WELCOME TO COREL PHOTO-PAINT™

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Corel PHOTO-PAINT™ is a bitmap-based image-editing program that makes it easy to retouch existing photos or create original graphics. Corel PHOTO-PAINT puts the tools and supplies of a professional graphic design studio at your fingertips. With a click of the mouse, you can choose from a vast array of media and textures, unlimited colors, brushes of every shape and size, and a library of ready-made images. You can create your images from scratch, touch-up photographs, add text and special effects, and change the lighting that surrounds your subject — all without leaving your chair. Corel PHOTO-PAINT provides hundreds of other fantastic features that you can use to imitate painting and photography techniques or to develop your own artistic style. You can also animate your images and share them with the world by publishing your work to the Internet.

About Corel Corporation

Corel Corporation is recognized internationally as a world leader in the development of graphics and business application software. Corel PHOTO-PAINT for Windows is available in more than 17 languages and has won more than 250 international awards from major trade publications. Corel PHOTO-PAINT is now available to Power Macintosh users.

We pride ourselves in delivering high-quality graphics, productivity, and business application software by actively seeking your input. We encourage this feedback and respond quickly to you, the users of Corel products worldwide.

Corel ships its products through a network of more than 160 distributors in 70 countries worldwide. Corel is traded on the Toronto Stock Exchange (symbol: COS) and the NASDAQ — National Market System (symbol: COSFF).

For more information about Corel and our products, see our World Wide Web site at **http://www.corel.com**.

Enough about us, what do you have to say?

In our continuing efforts to help you get the most from Corel applications, we look for new and better ways to document our products. If you've developed a unique effect that you'd like to share with us, please let us know. Send us the details and we may include them in future Corel learning materials. Address your letter to

Documentation Manager

Corel Corporation
1600 Carling Avenue
Ottawa, Ontario
Canada
KIZ 8R7
Fax: (613) 728-9790

Using Help

Corel PHOTO-PAINT features a variety of electronic resources that provide on-screen assistance as you need it. The main form of assistance is the online Help, which, apart from a minimum of graphics, is an electronic version of the Corel PHOTO-PAINT manual. You find information in online Help by double-clicking specially coded words, phrases, or icons that display topics. ToolTips describe individual features in the application, whereas the Corel PHOTO-PAINT tutorial guides you through basic tutorial procedures as you complete a range of practical tasks.

Accessing online Help

Online Help connects you to an overview or a procedure when you choose a topic from the table of contents or the index. You can also search for a topic using keywords that describe a feature or task.

To access online Help from the table of contents

1. Choose Help, Corel PHOTO-PAINT Help Contents.

2. Double-click a topic.

To access online Help using keywords

1. Choose Help, Corel PHOTO-PAINT Help Contents.

2. Choose the Index tab.

3. Do one of the following:

   - Double-click a topic.

   - Type a word in the search box, and click the Display button.

To access an online Help topic using a word search

1. Choose Help, Corel PHOTO-PAINT Help Contents.

2. Choose the Find tab.

3. Type a word in the search box, and click the Search button.

4. Choose a topic from the list, and click the Display button.

- You can also access online Help by typing a keyword in the Keyword box at the top of a Corel PHOTO-PAINT Help window.

- After you access an online Help topic, you can access related topics by choosing the green highlighted text, the How To buttons, the Related Topics buttons, or the Overview buttons.

- You can print a topic or keep it displayed on screen for easy reference. For more information about printing Help topics, see "Printing online Help" on page 4.

Accessing ToolTips

ToolTips identify the icons and buttons that correspond to various features in Corel PHOTO-PAINT, such as toolbars, Property Bars, and tool flyouts.

To access ToolTips

- Position the cursor over an icon or a button.

Accessing the tutorial

The Corel PHOTO-PAINT tutorial guides you through a series of practical lessons that give you a general idea of the application's major capabilities. Although intended mainly for novices, the tutorial also offers helpful information for advanced users and explores concepts that are common to many Corel PHOTO-PAINT operations.

To access the tutorial

- Choose Help, Corel PHOTO-PAINT Tutorial.

Printing online Help

You can print entire sections of the online Help or only specific topics.

To print an entire section

1. Choose Help, Corel PHOTO-PAINT Help Contents.
2. Choose a book and click the Print Topics button.

To print a topic

1. Choose Help, Corel PHOTO-PAINT Help Contents.
2. Choose a topic and click the Print Topic button.

- You can also print an individual topic by clicking the Print button in the Corel PHOTO-PAINT Help window.

Exploring the work area

An image that you open or create in Corel PHOTO-PAINT appears in an Image Window. You can open as many images as your computer's memory permits. If you have more than one image open, you can click inside an Image Window to make that image active. You can move an Image Window by dragging its Title Bar.

Application commands are accessible through the Menu Bar, toolbars, and flyouts. The Property Bar and Palettes provide access to commands that are relevant to the active tool or current task and can be opened, closed, and moved across your screen. You can also create multiple workspaces, which customize the look and feel of various Corel PHOTO-PAINT features. Workspaces are convenient if several people are using the same copy of Corel PHOTO-PAINT, or if you prefer to have different settings for different tasks.

Using the advanced drag and drop capabilities of Corel PHOTO-PAINT, you can drag an object from a Corel PHOTO-PAINT document and drop it directly into another document — in any other application that also supports the Macintosh drag and drop functionality. Coupled with the unique Corel PHOTO-PAINT interface, this drag and drop capability makes it easy to create professional images.

Working with bitmap images

When you create or edit images in Corel PHOTO-PAINT, you are working with bitmap images. Bitmaps are made of individual dots called pixels (picture elements) that are colored and arranged to form a pattern — much like the images on a television screen. When you zoom out or view a bitmap from a distance, its color and shape appear continuous. When you zoom in, you can see the individual pixels that make up the image.

The quality of a bitmap image depends on the resolution used to create and output it. Resolution refers to the amount of detail and information an image file contains and is measured in dots per inch (dpi). It also refers to the level of detail an input, output, or display device can produce. If you want your final output to look like its on-screen counterpart, you must be aware of the relationship between the resolution of your image on screen and the resolution of the device you use to output it. Whether you print a bitmap file to a 300-dpi laser printer or to a 1270-dpi imagesetter, the file prints at the resolution you set when you created the image — unless the printer resolution is lower than the resolution you set for your image on screen.

Using common button controls

The following table displays some common button controls that appear in various dialog boxes and Palettes for the Corel PHOTO-PAINT tools:

Control	Description
	Enable to preview the effect on screen
	Enable to display a single, large Result window in a dialog box or to disable the on-screen preview
	Enable to display Original and Result windows in a dialog box
	Enable to automatically update the preview as you make adjustments to the settings

You can pan around your image by clicking and dragging in the Image Window when you enable the On-Screen Preview button. You can also pan the original image or a result image in a dialog box. Zoom in to your image by clicking in the Image Window; hold down Option and click to zoom out. You can also zoom in or out in a dialog box.

Using the Toolbox

The Corel PHOTO-PAINT Toolbox contains tools for creating and manipulating objects and mask selections in your image. The zoom tools let you view specific areas of your image, and the shaping and painting tools let

you modify your image. The Toolbox also contains tools that let you apply modifications interactively.

Tool	Description
	The Object Picker tool lets you select and transform objects.
	The Mask Transform tool lets you transform selections.
	The Rectangle Mask tool lets you create rectangular selections.
	The Circle Mask tool lets you create elliptical selections.
	The Freehand Mask tool lets you create irregularly shaped or polygonal selections.
	The Lasso Mask tool lets you create irregularly shaped selections that include surrounding pixels of similar colors.
	The Scissors Mask tool lets you detect the edges of the objects in your image and place a mask marquee along those edges.
	The Magic Wand Mask tool lets you create irregularly shaped selections that include all adjacent pixels that are similar in color to the pixel you select.
	The Mask Brush tool lets you select an area on an image by painting over it.
	The Path Node Edit tool lets you create and edit paths.
	The Deskew Crop tool lets you define a cropping area and straighten crooked images.
	The Zoom tool lets you magnify areas of your image.
	The Hand tool lets you drag areas of an image into view when the image is larger than the Image Window.
	The Eyedropper tool lets you choose colors from an image.
	The Local Undo tool lets you restore images to the way they looked before your last brush stroke.

The Eraser tool lets you reveal the object or image background underneath the image area.	
The Color Replacer tool lets you replace your most recent paint strokes with the paper color.	
The Rectangle tool lets you draw hollow, filled, or rounded rectangles.	
The Ellipse tool lets you draw hollow or filled ellipses.	
The Polygon tool lets you draw hollow or filled polygons.	
The Line tool lets you draw single or joined line segments using the paint color.	
The Text tool lets you add text to your image and edit existing text.	
The Fill tool lets you fill areas on your image with color, texture, images, or designs.	
The Interactive Fill tool lets you create gradient fills.	
The Object Transparency tool lets you fade the colors of an object gradually toward the image background color.	
The Object Transparency Brush tool lets you brush areas on an object to increase their transparency.	
The Transparent Color Selection tool lets you make pixels with a specific color value in an object fully transparent.	
The Paint tool lets you paint an image using the paint color.	
The Effect tool lets you perform local color and tonal corrections.	
The Clone tool lets you duplicate part of an image and apply it to another part of the image or to another image altogether.	
The Image Sprayer tool lets you spray paint a series of bitmaps onto images.	

Accessing flyouts

Flyouts are toolbars that you access from a tool. A small black arrow in the bottom-right corner of a tool indicates that it is a flyout grouped with other tools.

To access flyouts

- Do one of the following:
  - Click the arrow on the tool.
  - Hold down the tool.

- You can display a flyout as a separate toolbar by clicking outside the button area and dragging the flyout from its host toolbar. Dragging flyouts off their host toolbars doesn't actually remove the flyout from the toolbar.

Using the Property Bar

The Property Bar is a context-sensitive command bar that displays different buttons and options, depending on the tool or object you choose. For example, when you click the Text tool, the Property Bar contains only text-related commands. You can customize your work area by displaying, hiding, or docking the Property Bar. The Property Bar can be docked to any side of your screen.

To display or hide the Property Bar

- Choose Window, Property Bar.

To dock the Property Bar

- Drag the Property Bar to any side of your screen.

- The Property Bar is horizontal when placed at the top or bottom of the screen, and vertical when placed on the left or right side.

Using toolbars

Each button on a toolbar represents a command. Some are shortcuts to menu commands; others are commands that are available only as toolbar buttons. You can customize your work area by displaying, hiding, sizing, or docking the toolbars. Toolbars can be docked to any side of your screen. You can also

arrange toolbars by snapping them to the edges of other toolbars, Palettes, the Property Bar, or the Image Window. Snapping makes it easy to arrange toolbars on screen and organize your work area.

To display or hide toolbars

1. Choose Window, Toolbars.

2. Do one of the following:

   - Enable the check boxes beside the toolbars you want to display.

   - Disable the check boxes beside the toolbars you want to hide.

To size a toolbar

- Drag the bottom-right corner of the toolbar.

To dock a toolbar

- Drag the toolbar to any side of the screen.

To snap a toolbar

- Drag the toolbar to the edge of another toolbar, a Palette, the Property Bar, or the Image Window.

Using Palettes

A Palette is a dialog box that contains the same controls as most dialog boxes, e.g., command buttons, options, and pop-up menus. Unlike most other dialog boxes, however, you can keep Palettes open while working on an image to access the operations you use most frequently, or to experiment with different effects.

The following table lists some common Palette operations:

To ...	Do this ...
Open a Palette	Choose Window, Palettes, and choose the Palette you want to open.
Move a Palette	Drag the Palette to another location.
Combine Palettes	Drag a Palette's tab onto another Palette.
Separate Palettes	Drag a tab out of the Palette.

Using multiple workspaces

A workspace is a configuration of settings you specify in the Preferences dialog box. You can create multiple workspaces for specific users or specific

tasks and then apply them when you want. You can also delete workspaces when they are no longer needed. For more information about using workspaces, see "Customizing workspace settings" on page 467.

To create a workspace

1. Choose Edit, Preferences.

2. From the list of categories, choose Workspace.

3. Click the New button.

4. In the New Workspace dialog box, type a name in the Name Of New Workspace box.

5. Choose a workspace on which to base the new Workspace from the Base New Workspace On pop-up menu.

6. Type a description in the Description Of New Workspace box.

• The description that you type in the Description Of New Workspace box appears on the Workspace page of the Preferences dialog box.

• You can enable the Set As Current Workspace check box in the New Workspace dialog box to apply the workspace immediately.

To choose a workspace

1. Choose Edit, Preferences.

2. From the list of categories, choose Workspace.

3. Choose a workspace from the Workspaces Available list.

4. Click the Set As Current button.

To delete a workspace

1. Choose Edit, Preferences.

2. From the list of categories, choose Workspace.

3. Choose a workspace from the Workspaces Available list.

4. Click the Delete button.

- You cannot delete the default workspace.

Corel services and support

Corel is committed to providing customers with high-quality technical support. The following sections describe the variety of support services available.

Classic technical support services

1-613-728-7070 (U.S. and Canada)

Free technical support is available to you for 30 days from the day you place your first call to Corel Technical Support. Corel representatives are available to respond to your call from Monday to Friday, 8:30 A.M. to 7:30 P.M. Eastern Standard Time.

During and after your Classic support period, you can also use the basic services listed as follows.

Basic services

Corel offers the following technical support options, most of which are available 24 hours a day, 365 days a year. These services are useful if you prefer not to pay for support or encounter problems during off-hours.

Interactive Voice Answering Network (IVAN)

The Interactive Voice Answering Network contains answers to commonly asked questions about Corel products and is available 24 hours a day, 365 days a year. It is regularly updated with the latest information, tips, and tricks. You can also request that IVAN solutions be faxed to you. There is no charge for this service beyond the cost of the telephone call. To call IVAN dial **(613) 728-7070**

Automated FAX on Demand

Technical Support maintains an automated FAX on Demand system of numbered documents that contain up-to-date information about common issues, tips, and tricks. This service is available 24 hours a day, 365 days a year.

FAX on Demand (613) 728-0826, extension 3080

You will be asked for a document number and your fax number. The document you request is automatically sent to you. To fax a catalog of

documents to yourself, call the Automated FAX on Demand system number and request document 2000.

AnswerPerfect

Customers can now submit support incidents (questions) by e-mail to Corel's Web site at a price of $14.95 U.S. per incident, payable by credit card for English language products only. Corel is committed to responding to AnswerPerfect support incidents within one business day.

Corel TutorLine

Now you can access a "how to" service that will allow Corel's Support staff to guide and tutor you through the features and functionality of Corel PHOTO-PAINT for the Power Macintosh. This line is not for technical issues, but to serve as an extension to the online and paper documentation. It is available to U.S. residents only. Corel TutorLine (900) 733-8789 ($2.00 U.S./minute. The first three minutes are free.)

Note: Persons under the age of 18 must have the consent of a parent or legal guardian to use this service.

Bulletin Board System (BBS)

If you have a modem and communications software package, you can access the Corel BBS. You can download files, including printer drivers, troubleshooting information, and utilities. You can also transfer problem files to Customer Support through the BBS. For an explanation of how to access and use the BBS, call:

European BBS (++353)-1-7082700

North American BBS (613) 728-4752

CompuServe

Interact with other users and Corel technicians to obtain product information and support. CompuServe is available 24 hours a day, 7 days a week, including holidays. Corel representatives will respond from 8:30 A.M. to 5:00 P.M. Eastern Standard Time, from Monday to Friday, excluding holidays.

If you have a CompuServe membership, you can access Corel technical information by entering one of the following at the CompuServe prompt:

- **GO COREL** (for English)
- **GO CORELGER** (for German)
- **GO CORELFR** (for French)

- **GO CORELNL** (for Dutch)
- **GO CORELSCAN** (for Scandinavian)

World Wide Web Site (WWW)

The World Wide Web address for Corel products on the Internet is
http://www.corel.com. At this location, you can quickly search Corel's
Searchable Knowledge Base. From the database you can read, print, or
download documents that contain answers to many of your technical
questions or problems. This site also contains files you can download.

File Transfer Protocol (FTP)

You can download updates, patches, and utilities by accessing our anonymous
FTP site at **ftp.corel.com**.

Priority technical support services

For details on the support options available to you after your Classic support
expires, please contact Corel Technical Support at **(613) 728-7070**.

- The terms of Corel technical support offerings are subject to change
  without notice.

Worldwide technical support

Corel customers residing outside North America can contact Corel Technical
Support representatives in Dublin, Ireland, or a local Authorized Support
Partner. Technical support outside North America is available to you at the
following locations. If your country is not listed below, please check the
Support section on our World Wide Web site at **http://www.corel.com**. You
can also call **(353)-1-7082500** for information about contacting
Technical Support.

Priority technical support services

To request an up-to-date listing of Corel Authorized Support Partners
worldwide, and a copy of Corel Priority Technical Support Policy, contact
Corel Technical Support at **(353)-1-7082500**.

Latin America

Argentina	(0541) 954-6500
Brazil	011 5505 4725

Chile	562 671-3060
Colombia	57-1-2150411
Mexico	01-800-024-2673

Europe

Austria	(01)-589-241-30
Belgium-French	(02)714-41-30
Belgium-Dutch	(02)714-41-31
Denmark	35-25-80-30
Finland	(90)-229-060-30
France	(1)-40-92-76-20
Germany	01805-2582-11
Hungary	36 1 3275737
Italy	06-523-542-37
Netherlands	020-581-4426
Norway	22-97-19-30
Portugal	05053 13330
Russia	95-361-2000
Spain	91-661-3627
Sweden	0680-711-751
Switzerland-French	0848-80-85-90
Switzerland-German	0848-80-85-90
United Kingdom	0171-298 85 16

Eastern Europe

Czech Republic	420-2-312-3871
Poland	0-71-347-72-79

Middle East

Dubai	971.4.523.526
Israel	02-6793-723

Asia Pacific

Australia	02 9898 6860
Hong Kong	8100-3729
India	91 11 3351948
Japan	03-5645-8379
Malaysia	800-800-1090
New Zealand	09 526 1155
Singapore	1-800-773-1400
South Korea	82-2-639-8778
Taiwan	(886) 2-593-3693

Africa

South Africa	021-658-4222

• The terms of Corel technical support offerings are subject to change without notice.

Before calling Corel Technical Support

Before calling Corel Technical Support, please have the following information available. This information assists the Technical Support representative in helping you more quickly and efficiently:

• A brief description of the problem, including the exact text of any error messages received, and the steps to recreate the problem.

• The type of computer, monitor, pointing device (e.g., mouse, tablet), printer, and video card (display adapter) in use.

• The versions of Macintosh operating system and the Corel product in use. Choose the About This Computer command from the Apple menu in the Finder to find which version of the Macintosh operating system you are running. To find the version of Corel PHOTO-PAINT, go to the folder where the application resides, select it and perform a "Get Info."

• A list of any programs loaded into RAM. Check the Startup folder on the System folder to determine if you are running any other programs.

Customer service worldwide

Corel Customer Service is operated by a number of third-party companies on behalf of Corel. If you would like additional information about Corel products or services, please call one of the telephone numbers listed below. If your country is not listed, please call the general number listed below. General customer service and product information can also be accessed through the World Wide Web at **http://www.corel.com**.

Country	Call this number
United States	1-800-772-6735
Canada	1-800-772-6735
Argentina	0-800-3-9192
Australia	1-800-658-850
Austria	0660-5875
Belgium	0800 11930
Denmark	800 187 55
Finland	0800-1-13502
France	05 90 65 12
Germany	0130 815074
Ireland	1800-242800
Italy	1678 74791
Japan	03-5645-8567
Korea	82-2-639-8778
Luxembourg	0800-2213
Mexico	1-800-024-2673
Netherlands	06-022-2084
New Zealand	0800-COREL-1
Norway	800 11661
Portugal	05055-3001
South Africa	0800-23-4211
Spain	900 95 35 38
Sweden	020 791 085
Switzerland	800-55-8224

United Kingdom	0800-581028
General	353-1-706-3912

GETTING STARTED

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Whether you use Corel PHOTO-PAINT to create new images or to retouch and enhance existing images, you can begin by setting up the image and organizing your work area. When you set up a new image, you define its properties, including its color mode and resolution. You can also create new images by copying the contents of the Clipboard or by duplicating existing images. When you open an existing image, its properties are already defined.

As you create or edit an image, you can customize your view of it, position and align objects in the Image Window, and access information about the image properties, such as size and color mode. Corel PHOTO-PAINT also provides you with the flexibility to undo and redo changes you make to the image or to return to a previously saved version of the image.

If you are using a pressure-sensitive pen to create or edit images, you can fine-tune its attributes in Corel PHOTO-PAINT so that your paint tools apply the effects you want.

Corel PHOTO-PAINT also lets you create automatic backups of your files as you work. When you are ready to end a Corel PHOTO-PAINT session, you can save your file in a variety of file formats.

To optimize speed and performance, you can customize the default workspace settings, such as units of measurement or grid color, to suit your working style and preferences.

Starting a new session

You can start a new Corel PHOTO-PAINT session by setting up a new image or by opening an existing image.

Setting up a new image

When you create an image from scratch, you open an Image Window and define the image properties, such as color mode, resolution, image size, and background color. The color mode defines the color characteristics of the image and is described in terms of component colors and bit-depth. For more information about color modes, see "Converting images" on page 339. The resolution refers to the degree of image detail. Together, the color mode and resolution affect the appearance of the image on screen and in printed form and determine its file size. The image size refers to the physical dimensions of the image as it is output and is measured in standard measurement units (e.g., inches or centimeters) or in pixels. The image background is white by default but can be replaced with another color or removed entirely.

You can also create a new image by pasting information from the Clipboard or by duplicating an existing image.

Opening an existing image

You can open almost any digitized image in Corel PHOTO-PAINT as long as it has been rasterized — rendered into pixels. If you want to edit a vector image, Corel PHOTO-PAINT opens it as a bitmap file. For information about opening images in different file formats, see "Importing and exporting" on page 517.

Because complex graphics can often be quite large, you can set up smaller, low-resolution versions of images for editing. You can then apply almost any effect or editing operation to the image without the delays that often occur with large, complex graphics. As you edit the low-resolution image, Corel PHOTO-PAINT records the operations that you perform. Later on, you can apply these operations to the original, high-resolution image.

Setting the properties of a new image

When you create an image, you can set the following properties: color mode, image size, resolution, and background color. The color mode is the system that defines the number of colors that make up the bitmap image. The image size is the physical dimensions of the image (width and height) as it is output (usually printed). Image resolution refers to the spacing of pixels in the image and is measured in pixels per inch (ppi) or dots per inch (dpi). It determines the amount of detail and information an image contains. The background color is the paper color. It is white by default.

To choose a color mode

1. Choose File, New.

2. Choose a color mode from the Color Mode pop-up menu.

To specify the image size

1. Choose File, New.

2. In the Image Size section, choose Custom from the Size pop-up menu.

3. Type values in the Width and Height boxes.

- You can create a file using a preset size. The presets change depending on the specified unit of measurement.

- When you choose a preset size from the Size pop-up menu, the image size appears in the Width and Height boxes automatically. If you want to use a different unit of measurement, choose another option from the pop-up menu beside the Width box.

- You can enable the Portrait or Landscape page layout buttons to set the paper orientation. The Portrait button causes the page to print from left to right across its shortest dimension. The Landscape button causes the page to print from left to right across its longest dimension.

To set the image resolution

1. Choose File, New.

2. Type a value in the Resolution box.

To choose the background color

1. Choose File, New.

2. Click the Paper Color picker, and choose a color.

- If you want to choose a paper color from a wider selection of colors or if you want to create a custom color, click the Paper Color picker, click the Other button, and choose an option from the Select Color dialog box.

- You can enable the No Background check box to create an image without a background.

- If you create an image with no background, you can always add a background later by choosing Image, Create Background. Corel PHOTO-PAINT creates a background using the current paper color.

Creating an image using the Clipboard contents

You can create a file with image data copied from the Clipboard.

To create a file using the Clipboard contents

1. Select some image data.

2. Choose Edit, Copy to copy the data to the Clipboard.

3. Choose File, New From Clipboard.

- You can also create a file using the Clipboard's contents by choosing Edit, Paste, As New Document.

Creating an image from an existing image

You can create an image by copying an existing image. You can copy the image so that the objects and background are separate from each other or are combined.

To copy an image

1. Choose Image, Duplicate.

2. Type a filename in the As box.

- You can enable the Merge Objects With Background check box in the Duplicate Image dialog box to combine the objects and background in the new image. When the objects are combined with the background, they become part of the it and can no longer be edited independently. For information about combining objects, see "Grouping and combining objects" on page 209.

Opening an image

You can import and edit almost any bitmap image in Corel PHOTO-PAINT. A bitmap image is composed of grids of pixels or dots.

To open an image

1. Choose File, Open.

2. Locate the folder where the file is stored.

3. Choose a file type from the Format pop-up menu.

4. Click the filename.

5. Click Open.

- You can enable the Preview check box to see a thumbnail representation of the image.

Opening a low-resolution version of a large image

If you are working with a large high-resolution image, you can speed up your editing tasks and improve efficiency by opening a low-resolution version of the image. When you save a low-resolution version of a file in the Corel PHOTO-PAINT file format, a record of your edits is automatically saved with the file. When you render the low-resolution file to a high-resolution copy, these edits are applied to the high-resolution copy. If you save the low-resolution copy in another file format, the editing record is lost.

When you create a low-resolution copy of the image, the image is resampled to 25% of its original size. You can also specify a custom size and resolution for the resampled image.

To open a low-resolution version of an image

1. Choose File, Low Res, Open.

2. Locate the folder where the file is stored.

3. Choose the filename.

4. Click Open.

5. In the Resample Image dialog box, click OK.

- If you're working with a low-resolution version of an animation file, you won't be able to save the edits you apply to it; you must render the file to a high-resolution version in the current working session and save the high-resolution animation file. This way, all your edits will be saved to the high-resolution copy.

To customize the size and resolution while opening a low-resolution version of an image

1. Follow steps 1 to 4 from the previous procedure.

2. In the Resample Image dialog box, choose a unit of measurement from the Units pop-up menu.

3. Type a value in the Width and Height boxes to specify the size of the low-resolution image.

4. Type values in the Horizontal and Vertical boxes to specify the resolution of the low-resolution image.

- Low-resolution copies of Encapsulated PostScript files cannot be resampled.

- If you save a low-resolution copy of an image that you want to open in Corel PHOTO-PAINT for Windows, render the file as a high-resolution image on your Macintosh, save it, and then open it in Windows. If you try to open the file in Windows without rendering it as a high-resolution image on the Mac OS, it won't open properly.

- The previous note is also valid for a low-resolution file saved in Windows that you want to open in Corel PHOTO-PAINT for Power Macintosh — the file won't open properly on the Macintosh unless you render and save it as a high-resolution image in Windows first.

- You can specify the size of the low-resolution image as a percentage of the original image size by typing values in the boxes beside the Width and Height boxes.

- You can set equal values for the horizontal and vertical image dimensions by enabling the Maintain Aspect Ratio check box in the Resample Image dialog box.

- You can set equal values for the horizontal and vertical image resolution by enabling the Identical Values check box in the Resample Image dialog box.

When you open a low-resolution image in the Image Window, you can edit it in the same way that you edit any other image. Corel PHOTO-PAINT records the operations that you perform on the low-resolution image, and when you choose the Render command, the program creates a high-resolution copy of the original image and applies the edits to that copy. You can overwrite the original image with this high-resolution copy, or you can save it with a new filename.

To apply low-resolution edits to the original image

1. Open the low-resolution copy with the edits to be applied.

2. Choose File, Low Res, Render.

3. Choose a unit of measurement from the Units pop-up menu.

4. Type values in the Width and Height boxes to specify the size of the high-resolution image.

5. Type values in the Horizontal and Vertical boxes to specify the resolution of the high-resolution image.

6. Save the new high-resolution file with the same filename as the original high-resolution image to overwrite the original file.

• The default size for the new high-resolution image is the size of the original high-resolution image.

• You can specify the new image size as a percentage of the original image size by typing values in the boxes beside the Width and Height boxes.

• You can set equal values for the horizontal and vertical image dimensions by enabling the Maintain Aspect Ratio check box in the Resample Image dialog box.

• You can set equal values for the horizontal and vertical image resolution by enabling the Identical Values check box in the Resample Image dialog box.

• You can also save the new high-resolution file with a new filename.

Viewing images

You can adjust the view of your images at any time. By default, images are displayed at 100% magnification; however, you can set a custom level of magnification to be used for opening images. Zoom in to get a closer look at

an image's detail; zoom out to view a larger portion of the image or the entire image. When you magnify the view of an image area, you can use the Hand tool to pan. Panning moves the image within the Image Window and lets you see, at the same level of magnification, areas that fall outside the Image Window. Zooming and panning don't change the size of your image — only your view of it.

You can maximize the viewing area on your screen and still be able to edit the image using the menus. By launching a full-screen preview, you can view an even larger representation of your image, but you won't be able to access any of the image-editing commands or features.

You can use the zoom controls in the Toolbox, the Zoom Toolbar, the Standard Toolbar, and the Property Bar. The Property Bar provides the most extensive selection of zoom controls, allowing you to zoom in on the active object, on all selected objects, or on all objects. You can also zoom in to the height or width of the Image Window, fit the entire image in the Image Window, or define a custom magnification. When you want to have zoom controls available no matter what the active tool is, use the Zoom toolbar as you can have it displayed at all times.

Setting the zoom level when opening images

You can specify the magnification to use when opening images. By default images are displayed at 100% magnification.

To set the zoom level when opening images

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Choose a magnification level from the Zoom State On Open pop-up menu.

Zooming in and out

Zooming in and out lets you view the image at the level of magnification you require when performing certain editing tasks. Zoom in to take a closer look at an image's detail, and zoom out to view a larger portion of the image or the entire image.

You can display the image at a preset magnification level in one step and you can also specify a custom magnification level.

To zoom in

1. Open the Zoom Tools flyout, and click the *Zoom tool*.

2. Click the area that you want to magnify.

- You can also zoom in by dragging diagonally around the area that you want to magnify.

To zoom out

1. Open the Zoom Tools flyout, and click the Zoom tool.

2. Hold down Option, and click the area in the Image Window from which you want to zoom out.

To zoom in or out by a preset level

1. Open the Zoom Tools flyout, and click the Zoom tool.

2. On the Property Bar, choose a magnification level from the Zoom Level pop-up menu.

- You can also zoom in or out by a preset level using the zoom controls on the Standard toolbar.

To specify a custom magnification level

1. Open the Zoom Tools flyout, and click the Zoom tool.

2. On the Property Bar, type a magnification level in the Zoom Level pop-up menu.

- If the value you specify exceeds the maximum magnification level, Corel PHOTO-PAINT displays the closest possible level.

Viewing image areas that fall outside the Image Window

You can use the Hand tool to move an image within the Image Window so that you can get the view that you want. Using the Hand tool is much like using your hand to move a piece of paper around on the top of a desk.

To view image areas that fall outside the Image Window

1. Open the Zoom Tools flyout, and click the *Hand tool*.

2. Drag the image until the area you want to see is visible in the Image Window.

- You can also click the Hand tool on the Property Bar for the Zoom tool to view image areas that fall outside the Image Window.

- You can also use the Navigator pop-up to view areas of your image that fall outside the Image Window. The Navigator pop-up is located in the bottom left corner of the Image Window.

Viewing a large representation of an image

If you want to view a large representation of your image, you can maximize the work area or launch a full-screen preview of the image. When the image is maximized, you can continue editing it. A full-screen preview lets you view an even larger representation of your image but does not let you access any of the image-editing commands.

To maximize the work area

- Choose View, Maximize Work Area.

- You can return to a normal view by choosing View, Maximize Work Area again.

To view a full-screen preview of your image

- Choose View, Full-Screen Preview.

- You can return to a normal view by pressing any key or clicking the screen.

Using the grid, rulers, and guidelines

The grid, rulers, and guidelines are designed to help you edit and arrange objects and images with precision. The grid is a series of evenly spaced horizontal and vertical lines that overlay your image so that you can create and align image components precisely. You can adjust the amount of space between the horizontal and vertical lines and select a color and style for the grid. The rulers are displayed on the left side and along the top of the Image Window. They help you size and position the objects in your image. Guidelines are lines that you can use to help you align objects. You can display horizontal and vertical guidelines in the Image Window by dragging them from the rulers or by setting values in the Preferences dialog box. Both the grid and guidelines are nonprinting lines.

You can customize the function and appearance of the grid, rulers, or guidelines before or after you begin creating and editing images.

Working with the grid

The grid works with the rulers to help you align and position objects accurately in your image. By default, the grid is displayed as a series of intersecting lines that are superimposed on your image and are spaced according to the settings you specify. You can customize the appearance of the grid by changing its color and style. Simplify alignment by choosing color and style options that make the grid most visible on your image.

To make alignment even easier, you can use the Snap To Grid command (View menu). This command causes the grid lines to become magnetic, ensuring that objects automatically line up with the grid as you move them.

Setting up the grid

You can customize the appearance of the grid on your screen by specifying frequency or spacing values. The frequency values determine the number of grid lines per unit of horizontal and vertical distance. The spacing values represent the exact distance you want between the grid lines.

To set up the grid

1. Choose Edit, Preferences.

2. From the Document category, choose Grid.

3. Enable one of the following buttons:

   • Frequency — sets the distance between grid lines according to how many lines you want per unit of horizontal and vertical distance

   • Spacing — specifies the exact distance between grid lines

4. Type values in the Horizontal and Vertical boxes.

• The Frequency button is not available if you are measuring in pixels.

• You can access the document preferences only if you have an image open in Corel PHOTO-PAINT.

• The values that you specify on the Grid page are measured in the units that you specify on the Ruler page in the Preferences dialog box. You can change these units by choosing other options from the Horizontal and Vertical pop-up menus on the Ruler page; however, the new units will also apply to the ruler.

- You can display the grid in the Image Window by enabling the Show Grid check box.

- You can align objects with the grid lines by enabling the Snap To Grid check box, which makes the grid lines magnetic and objects automatically align with them in the Image Window. For more information about the Snap To Grid command, see "Using the grid" on page 30.

Using the grid

You can display the grid to provide an accurate way of measuring and aligning objects in your image. For more precise alignment, you can make the grid magnetic and snap objects in your image to the grid lines.

To display or hide the grid

- Choose View, Grid.

  If a check mark appears beside the command name, the grid is displayed. If a check mark does not appear beside the command name, the grid is hidden.

To align an object to the grid

1. Choose View, Snap To Grid.

   If a check mark appears beside the command name, the snap command is enabled. If a check mark does not appear beside the command name, the command is disabled.

2. Drag an object to a point on the grid.

- You can change grid settings by choosing Edit, Preferences and specifying values on the Grid page in the Document category. For more information, see "Setting up the grid" on page 29.

Changing the color and style of the grid

After you set up the grid, you can customize its color and appearance so that it stands out against the image background and suits your work preferences.

To change the color and style of the grid

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Click the Grid Color picker, and choose a color.

4. Choose one of the following grid styles from the Grid Style pop-up menu:

   • Solid Line — creates a series of solid horizontal and vertical lines

   • Dashed Line — creates a series of dashed horizontal and vertical lines

   • Dots — creates a series of dotted horizontal and vertical lines

• If you want to choose from a wider selection of colors or if you want to create a custom color, click the Grid Color picker, click the Other button, and choose an option from the Select Color dialog box. For more information about choosing colors, see "Choosing colors" on page 318.

• You can display the grid in the Image Window by choosing View, Grid.

Working with rulers

The on-screen rulers appear by default along the top and left sides of the Image Window and provide a visual reference that can help you determine the size and position of any image component. As you move the cursor around the image, marks on the rulers indicate its current position relative to the rulers origin. The rulers origin is the point where the rulers' 0 points intersect. The cursor's coordinates, as defined by the rulers, are also displayed on the Image Info Palette. For more information about the Image Info Palette, see "Viewing image information" on page 54.

To increase the effectiveness of the rulers, you can customize their location and appearance. Move the rulers anywhere on the screen to create or position an object with precision. Change the ruler's unit of measurement to one that is most suitable for your image. You can also calibrate the rulers to ensure that distances on your screen match real-world distances. Calibration fine-tunes the rulers so that your output is accurate and consistent with the image on screen.

Setting up the rulers

You can customize the rulers by choosing a unit of measurement. The horizontal and vertical rulers can be set up using different units of measurement. You can also set the origin of the rulers. The origin is the location of the 0 point on the horizontal and vertical rulers.

To specify a unit of measurement for the rulers

1. Choose Edit, Preferences.

2. From the Document category, choose Ruler.

3. Choose a unit of measurement for the horizontal ruler from the Horizontal pop-up menu.

4. Choose a unit of measurement for the vertical ruler from the Vertical pop-up menu.

5. Choose an option from the Tick Divisions pop-up menu to specify the number of division marks ("ticks") between each unit of measurement.

- If the Same Units For Horizontal And Vertical Rulers check box is enabled, the Vertical pop-up menu is not available.

- You can enable the Same Units For Horizontal And Vertical Rulers check box to use the same unit of measurement for both the Horizontal and Vertical rulers.

- You can enable the Show Fractions check box to display fractions on the rulers.

To set the origin of the rulers

1. Follow steps 1 and 2 from the previous procedure.

2. Type values in the Horizontal Origin and Vertical Origin boxes.

Using the rulers

You can display the rulers along the side and top of the Image Window to help you keep track of the size and location of the parts of your image. You can also move the rulers anywhere on the screen to create or position an object with precision.

To display or hide the rulers

- Choose View, Rulers.

  If a check mark appears beside the command name, the ruler is displayed. If a check mark does not appear beside the command name, the ruler is hidden.

To move a ruler

- Hold down Shift, and drag the ruler to its new position.

- You can move both rulers at once by holding down Shift and dragging the intersection point of the two rulers.

- You can return a ruler to its original position by holding down Shift and double-clicking it.

- For information about choosing units of measurement for the rulers and setting their origin, see "Setting up the rulers" on page 31.

Calibrating the rulers

You can calibrate the rulers so that one inch in your on-screen image corresponds to one inch in your printed image. Calibrating the rulers lets you output an accurate representation of your image.

To calibrate the rulers

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Click the Calibrate Rulers button.

4. Hold up a clear plastic ruler next to the horizontal ruler displayed on your monitor.

5. Adjust the value in the Horizontal box on your screen so that one inch on the ruler corresponds exactly to one inch on the plastic ruler.

6. Adjust the value in the Vertical box on your screen so that one inch on the ruler corresponds exactly to one inch on the plastic ruler.

- You can also calibrate the rulers by typing values in the Horizontal and Vertical boxes.

Working with guidelines

Guidelines are lines that you can place anywhere in the Image Window to help you align and position image components. You can create any number of horizontal and vertical guidelines and save them with your image. You can also snap objects to guidelines so that the objects automatically align with the guidelines when moved nearby.

The easiest way to display guidelines on your screen is to drag them from the vertical or horizontal rulers to the Image Window. You can then select, move, and delete guidelines directly in the Image Window. When you select a guideline, it changes color. Deselected guidelines are blue, and selected

guidelines are red. You can also select, move, and delete guidelines on the Guidelines page in the Preferences dialog box.

Setting up guidelines

You can set up guidelines by specifying precise locations on the Horizontal and Vertical pages in the Preferences dialog box. The values that you specify in the Preferences dialog box are measured in the same units as the rulers and represent the location of the guidelines relative to the rulers' settings. For example, if you type 1 in the box, a guideline is placed at the 1 marker on the Horizontal or Vertical ruler. Guidelines work with rulers to help you align and position objects accurately throughout your images. You can also move and delete guidelines.

To add a guideline

1. Choose Edit, Preferences.

2. In the Document category, double-click Guidelines, and choose Horizontal or Vertical.

3. Type a value in the box at the top left corner of the Horizontal or Vertical page to specify the guideline location.

4. Click the Add button.

• You can also add a guideline by dragging from the horizontal or vertical ruler to the Image Window. To display the rulers, choose View, Rulers.

To move a guideline

1. Follow steps 1 and 2 from the previous procedure.

2. From the list on the Horizontal or Vertical page, choose the guideline that you want to move.

3. Type a value in the box at the top left corner on the Horizontal or Vertical page to specify a new location for the guideline.

4. Click the Move button.

• You can also move a guideline by selecting it with the Object Picker tool and dragging it to a new position in the Image Window.

To delete guidelines

1. Follow steps 1 and 2 from the "To add a guideline" procedure.

2. Choose a guideline from the list, and click the Delete button.

- You can click the Clear button to remove all horizontal or vertical guidelines from the Image Window.

- You can also delete a guideline by selecting it with the Object Picker tool and pressing Delete.

Using guidelines

You can display guidelines to provide an accurate way of measuring and aligning objects in your image. For more precise alignment, you can make the guidelines magnetic and snap objects in your image to them.

To display or hide guidelines

- Choose View, Guidelines.

  If a check mark appears beside the command name, the guidelines are displayed. If a check mark does not appear beside the command name, the guidelines are hidden.

To align an object to the guidelines

1. Choose View, Snap To Guidelines.

   If a check mark appears beside the command name, the Snap To Guidelines command is enabled. If a check mark does not appear beside the command name, the command is disabled.

2. Choose View, Guidelines.

3. Drag an object to a new point on the guidelines.

- You can change the guideline settings at any time. For more information, see "Setting up guidelines" on page 34.

Changing the color of guidelines

You can change the color of the guidelines to make them stand out against the image background.

To change the color of guidelines

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Click the Guideline color picker, and choose a color.

- For information about setting up and customizing guidelines, see "Using guidelines" on page 35.

- If you want to choose from a wider selection of colors or if you want to create a custom color, click the Guideline Color picker, click the Other button, and choose an option from the Select Color dialog box. For more information about choosing colors, see "Choosing colors" on page 318.

Customizing the Snap To Guidelines sensitivity

The Snap To Guidelines command makes guidelines magnetic. This means that when you move an object close to a guideline, the object automatically jumps to align with that line. You can set the sensitivity of the snapping so that if you move an object within the specified number of pixels of a guideline, the object snaps to that line.

To customize the Snap to Guidelines sensitivity

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Type a value in the Snap Tolerance box.

Undoing and redoing changes

If you make a change to your image and then wish that you hadn't, Corel PHOTO-PAINT lets you undo the operation. You can undo the changes you have made one at a time, starting with the most recent change. You can also specify the number of undo operations that you can perform in a session in the Preferences dialog box.

If you want to undo an effect that involves many commands and operations, you can use the Undo List command. Choose the command you want to revert to; the commands performed after this command are undone. If you want to undo all of the changes you've made to a file since your last save, use the Revert command.

The Checkpoint and Restore To Checkpoint commands let you undo all image edits up to a specific stage in its development. When you set a checkpoint, you ask Corel PHOTO-PAINT to remember an exact point in your image's development so that you can return to it later.

The Clear command wipes out your active object or background and leaves you with a blank object or background. When you use the Clear command, the deleted image is not copied to the Clipboard. Use this command only when you want to start over but also want to maintain the initial settings that you are currently using (i.e., paper color, size, resolution, and color mode).

After you undo an action, you can redo it using the Redo command, which essentially lets you undo what you have undone. If you want to undo or redo an action gradually, you can apply the Fade or Repeat commands.

When you save an image, the Undo and Undo List commands are cleared. These commands are also cleared when you choose Edit, Undo Special, Checkpoint. You can undo any image-editing effect that you've applied to your image; however, the File New, File Open, and File Save commands cannot be undone.

Enabling and disabling undo capabilities

You can reverse a previous action or a previous sequence of actions performed on an image.

To enable and disable undo capabilities

1. Choose Edit, Preferences.

2. From the Workspace category, choose Memory.

3. In the Undo section, do any of the following:

    • Enable or disable the Enable Undo check box.

    • Enable or disable the Enable Undo List check box.

4. Click OK.

5. Restart Corel PHOTO-PAINT to apply the changes.

• When you disable the Enable Undo check box, you can no longer reverse the last action you perform on an image. When you disable the Enable Undo List check box, you can no longer reverse the previous sequence of actions that you performed on an image.

• Although the Undo and Undo List commands are extremely useful when editing images, they occupy your computer's resources. If your computer does not have a lot of memory and you find that Corel PHOTO-PAINT is

not running at the speed you want, you can disable one or both of these commands to regain system resources.

- Because the low-resolution editing relies on the Undo List for rendering, disabling the Enable Undo List check box also disables the low-resolution rendering feature.

Choosing the number of undo levels

You can customize the performance of the Undo feature by choosing the number of levels that the command supports. Choosing undo levels instructs Corel PHOTO-PAINT to remember a specific number of actions so that you can reverse several actions consecutively.

To choose the number of undo levels

1. Choose Edit, Preferences.

2. From the Workspace category, choose Memory.

3. Type a value in the Undo Levels box.

4. Click OK.

5. Restart Corel PHOTO-PAINT to apply the changes.

- The maximum number of undo levels is 30.

- The number of undo levels you choose affects the size of the scratch disk required for Corel PHOTO-PAINT to run properly. Specify a smaller value for the undo levels if you find that your computer is not operating as fast as you want.

Undoing the last change

You can undo the last change made to an image.

To undo the last change

- Choose Edit, Undo.

- The name of the Undo command varies according to the last operation you performed. For example, when you move an object to a new location, the Undo command is called Undo Object Move.

- You can also hold down Control, click the Image Window, and choose Undo to undo the last change.

- If you undo an operation but then decide that you don't like the result, you can redo the operation by choosing Edit, Redo.

Undoing a series of changes

Use the Undo List command to undo a series of changes that you've made to an image. The command that you select and all other commands that follow it are undone and the image reverts to the state it was in before the selected command was executed.

To undo a series of changes

1. Choose Edit, Undo Special, Undo List.

2. Choose a command from the list.

3. Click Undo.

- If you undo a series of operations and then decide that you don't like the result, you can redo the operations by choosing Edit, Undo Special, Redo List.

Undoing all changes since you last saved

At any point in the image-editing process, you can return to the last saved version of the image.

To undo all changes since you last saved

- Choose File, Revert.

Removing the active object or background

You can remove the active object or background and start over again.

To clear the active object or background

- Choose Edit, Clear.

Repeating and fading operations

If you want to partially undo or redo operations, you can use the Repeat and Fade commands. When you repeat a command, the operation is reapplied to the image, often producing a stronger visual effect. When you fade a command, the operation's effect is gradually removed from the image. You can choose a merge mode to specify the method by which the selected paint, object or fill colors combine with the colors in the image when you fade them. You can also use the merge modes to fade effects.

To repeat the last operation

• Choose Edit, Repeat.

• The name of the Repeat command varies according to the last operation you've performed. For example, if you want to repeat a brush stroke that you've just applied to an image using the Paint tool, the Repeat command is called Repeat Tool Stroke.

To fade the last operation

1. Choose Edit, Fade Last Command.

2. Move the Percent slider to set the degree by which you want to fade the last operation.

3. Choose a merge mode from the Merge pop-up menu.

• You can also fade the last operation by typing a value in the Percent box in the Fade Last Command dialog box.

Redoing changes

If you undo an operation but then decide that you don't like the result, you can redo it using the Redo command. You can also redo a series of commands. When you choose a command in the Redo List dialog box, that command and all those that precede it are redone.

To redo the last change

• Choose Edit, Redo.

- The name of the Redo command varies according to the last command. For example, when you move an object to a new location and undo the operation, the Redo command is called Redo Object Move.

To redo a series of changes

1. Choose Edit, Undo Special, Redo List.

2. Choose a command from the list.

3. Click the Redo button.

- The more operations that you choose to redo, the longer your computer takes to redo them.

Reverting to a certain point in your image

Checkpoints mark your image at particular stages in its development. When you set a checkpoint, Corel PHOTO-PAINT records the image so that you can return to that point later on.

To set a checkpoint

- Choose Edit, Undo Special, Checkpoint.

To return to a checkpoint

- Choose Edit, Undo Special, Restore To Checkpoint.

Saving and closing images

As you create and edit your images, remember to save your files. If the image has already been saved, use the Save command to update the file under its existing filename. If you are saving an image for the first time, use the Save command or the Save As command to assign a new filename and a storage location.

When you save an image for the first time, it is saved as a Corel PHOTO-PAINT file by default; however, you can save the image as another file type. For more information about the file types that Corel PHOTO-PAINT supports, see "Importing and exporting" on page 517.

You can also use the Save As dialog box to save an existing image with a new name. This lets you save the new image with the image-editing effects intact and lets you retain a copy of the original file.

Safeguarding your work

It's important to safeguard your work against conditions that can corrupt and even destroy files. One simple way to safeguard your work is to save your image repeatedly throughout the editing process; however, Corel PHOTO-PAINT also provides automatic save and backup features that protect your files in case you forget to save them manually.

You can set values in the Preferences dialog box to specify automatic save intervals. If you enable the Auto-Save Every check box, your file is saved according to the time intervals that you set. If you prefer not to overwrite the original file that you have saved, you can save the modified image temporarily using checkpoints. Then when Corel PHOTO-PAINT performs automatic saves, the checkpoint image is updated. You can return to an image that you have saved as a checkpoint by choosing the Restore To Checkpoint command (Edit menu).

Another way to safeguard your work is to save your image in different locations. If you create a backup copy of your work, an exact replica of the image is created and stored in the location of your choice each time you save the original file. You can automatically create a backup copy of your image every time you save by enabling the Make Backup On Save check box on the Save page in the Preferences dialog box.

Scratch disk space

Scratch disk space is hard disk space that is used for temporary file storage. Using the available hard disk space to store temporary files that are not in use artificially increases the amount of memory available on your computer. When you choose appropriate scratch disk space, Corel PHOTO-PAINT is more efficient in dealing with large images.

Saving an image

You can preserve the changes that you make to images by saving them as you work. If you are saving an image for the first time, you must specify a name and location for the image file.

To save an image

1. Choose File, Save.

2. Locate the folder where you want to save the file.

3. Choose a file type from the Format pop-up menu.

4. Specify a filename, and click Save.

- You can also save an image by clicking the Save button on the Standard toolbar.

To save an image with a new name

1. Choose File, Save As.

2. Specify a filename, and click Save.

- If you want to save an image using a file format that is not displayed in the Format pop-up menu, you can export it. For more information, see "Exporting images in nonnative file formats" on page 523.

Saving an image automatically

You can automatically save your image as you work. If you do not want to overwrite a previously saved version of the image, you can create a checkpoint in the image. A checkpoint lets you temporarily save the image at a particular stage in its development so that you can revert to that stage later on if necessary.

To save your images automatically

1. Choose Edit, Preferences.

2. From the Workspace category, choose Save.

3. Enable the Auto-Save Every check box.

4. Type a value in the Minutes box to specify the time interval between auto-saves.

5. Enable one of the following buttons:
   - Save To File — overwrites the last version of the file that you saved to disk

   - Save To Checkpoint — temporarily saves the image in its current state without overwriting the version that has been saved to disk

- When you save the image manually or exit Corel PHOTO-PAINT, the version of the image that you saved as a checkpoint is lost.

- You can get confirmation for every auto-save operation by enabling the Warn Me Before Saving check box

Saving backup copies of your images

You can create an automatic backup copy of your image each time you save it so that you always have another version of the file on your computer. Backup files are especially useful in cases where the original file is corrupted or lost.

To save backup copies of your images

1. Choose Edit, Preferences.

2. From the Workspace category, choose Save.

3. Enable the Make Backup On Save check box.

4. Choose a location for the backup files.

To change the folder for the backup copies of your images

1. Follow steps 1 and 2 from the previous procedure.

2. Click the Select button, and locate the folder where you want to save backup copies of your image.

Choosing scratch disk space for temporary file storage

You can choose scratch disk space where temporary file information from a work session is stored. If you have two hard drives or two drive partitions, you can choose both a primary and a secondary scratch disk space. For best results, choose a disk that has free space two or three times larger than the size of your uncompressed image. If you have several images open at once, the total scratch disk size should be two or three times the total uncompressed size of all the images.

To choose scratch disk space for temporary file storage

1. Choose Edit, Preferences.

2. From the Workspace category, choose Memory.

3. From the Primary pop-up menu, choose the primary hard disk to use as scratch disk space.

4. From the Secondary pop-up menu, choose the secondary hard disk to use as scratch disk space.

5. Click OK.

6. Restart Corel PHOTO-PAINT to apply the changes.

- • The amount of scratch disk space is displayed on the Status Bar.

- • You can see the size of an active image by choosing File, Document Info. For more information about the Document Info dialog box, see "Viewing image information" on page 54.

Closing an image

Before you close an image, you can save the file to keep the changes made since it was last saved. If you want to ignore the changes, close the file without saving.

To close an image

- • Choose File, Close.

- • If you've opened several copies of the image (using the New Window command), the Close command will close only the current Image Window, not the entire image.

Using a pressure-sensitive pen

You can use a pressure-sensitive pen to access commands and draw your images in Corel PHOTO-PAINT. The Pen Settings Palette (Window menu) lets you control the relationship between the pressure you apply with the pen to the tablet and the effect produced by the brush tools. As you press down on a drawing tablet with the pen, the effect produced by a brush tool changes. For example, if you set the size to 10 pixels and apply pressure to the tablet, the nib widens (just as a real paintbrush does as you apply more pressure to the stroke) by a maximum of 10 pixels.

All options on the Pen Settings Palette correspond to brush tool attributes found on the Tools Settings Palette or on the Property Bar. Use the options on the Pen Settings Palette to set the maximum level by which the attributes vary when you apply pressure to the tablet. You can also assign any Corel PHOTO-PAINT tool to become active when you use your pen's eraser. If you want your pen to spread paint like a real paintbrush, you can set tilt and

rotation attributes on the Pen Settings Palette. Then, when you tilt or rotate the pressure-sensitive pen on the tablet, the paint spreads wider in certain areas, producing a more realistic effect. Each set of attributes can be saved as custom settings so that you can easily switch between them.

The following table describes how the brush tool attributes can vary with the amount of pressure that you apply to the tablet. All attributes affect the functionality of the Paint tool but might not affect all other brush tools. For example, the behavior of the Object Transparency Brush tool is not affected by the hue, saturation, brightness, bleed, or sustain color controls because it does not use color.

Attribute	Description
Size	A pixel value that determines the brush tool's size. Positive values increase the size of the brush tool as you increase the pressure. The tool's maximum size equals the nib's size plus the percentage that you set. Negative values decrease the size of the brush tool as you increase pressure. Artistic nibs do not support pressure-sensitive sizing. Instead, use variants of the circle and rectangular nibs to vary their shape.
Opacity	A maximum opacity value that is used when you apply pressure with the pen. Positive values make the stroke more opaque as you increase the pressure. Positive values have no impact if the tool's transparency is set to zero; negative values make the stroke more transparent as you increase the pressure. Negative values have no impact if the tool's transparency is already set to the maximum.
Softness	A percentage value that applies a soft edge to the stroke as you apply pressure with the pen. Positive values make the soft edge more apparent as you increase pressure; negative values make the soft edge less apparent as you increase pressure. Artistic nibs do not support pressure-sensitive softness.
Hue	A value, specified in degrees, that shifts the hue of the paint color around the Color Wheel up to the specified degree. Positive values shift the hue in a clockwise direction; negative values shift the hue in a counterclockwise direction. The hue attribute does not apply to images in the Grayscale color mode.
Saturation	A percentage value that represents the maximum variation in the saturation of the paint color. Positive values increase the saturation of the color as you increase pressure with the pen; negative values decrease the saturation of the color as you increase pressure. The saturation attribute does not apply to images in the Grayscale color mode.

Brightness	A percentage value that represents the maximum variation in the brightness of the paint color. Positive values increase the brightness of the color as you increase pressure with the pen; negative values decrease the brightness of the color as you increase pressure.
Texture	A percentage value that makes the Paint tool's current texture more or less visible in the stroke applied to the image as you increase pressure on the pen. Positive values make the texture more visible as you increase pressure; negative values make the texture less visible as you increase pressure.
Bleed	A percentage value that represents the maximum variation in the bleed value of the paint color. The bleed attribution makes a long brush stroke run out of paint and simply smear the background colors. Positive values increase the bleed as you increase pressure with the pen; negative values reduce the bleed as you increase pressure.
Sustain Color	A percentage value that represents the maximum variation in the sustain rate of the paint color. It works in conjunction with the bleed attribute and lets a long brush stroke that is running out of paint maintain traces of the paint color throughout the stroke. Positive values increase the sustain color rate as you increase pressure with the pen; this keeps more of the paint color in the stroke as you increase pressure. Negative values decrease the sustain color rate as you increase pressure; this makes the stroke run out of the color as you increase pressure.

Setting the pressure-sensitive pen attributes

You can customize the attributes of the pressure-sensitive pen. For more information about these attributes, see "Using a pressure-sensitive pen" on page 45.

To set the pressure-sensitive pen attributes

1. Choose Window, Palettes, Pen Settings.

2. Enable the check box associated with the settings that you want to customize.

3. Click the Value box associated with the attribute.

4. Type a value for the attribute in the Value box.

5. Click the Apply button.

6. Open the Paint Tools flyout, and click the *Paint tool*.

7. Drag the pen, varying the amount of pressure you apply to the tablet.

- Some pressure-sensitive pen attributes are set in percentages; others are set in angles; size is set in pixels.

- If you are not pleased with the effect of the current values or have saved them and want to create another customized series of values, you can reset all values by clicking the flyout arrow and choosing Clear Values.

Setting the tilt and rotation attributes of the pressure-sensitive pen

You can set the tilt and rotation value of the pressure-sensitive pen so that you can spread or spray paint. When you set an elongation value on the Pen Settings Palette and tilt or rotate your pen on the tablet, paint sprays out from the starting point.

To set the tilt and rotation attributes of the pressure-sensitive pen

1. Choose Window, Palettes, Pen Settings.

2. Enable the Elongation check box.

3. Type a value in the Value box beside the Elongation check box to specify the strength of the tilt and rotation effect.

Assigning a tool to the eraser of the pressure-sensitive pen

The eraser of your pressure-sensitive pen can be used to access any tool. The tool that you specify becomes active when you apply the pen's eraser to the pressure-sensitive tablet.

To assign a tool to the eraser of the pressure-sensitive pen

1. Choose Window, Palettes, Pen Settings.

2. Choose a tool from the Pen Eraser pop-up menu.

3. Click the Apply button.

Saving and loading pressure-sensitive pen settings

After you customize the pressure-sensitive pen settings, you can save them for use with different images later on. You can also load settings that you have previously saved.

To save pressure-sensitive pen settings

1. Choose Window, Palettes, Pen Settings.

2. Specify the tools and operations that you want to associate with the pen.

3. Click the flyout arrow, and choose Save Settings.

4. In the Save Pen Settings dialog box, type a name for the settings in the Save Settings As box.

- If you close the Pen Settings Palette immediately after saving your pen settings, an alert appears prompting you to apply those settings to the pen. If you choose not to apply the settings now, they are saved and can be used later. If you close the Pen Settings Palette without saving or applying your settings, they are lost.

To load previously saved pressure-sensitive pen settings

1. Choose Window, Palettes, Pen Settings.

2. Choose the settings that you want to load from the Settings pop-up menu.

3. Click Apply.

- The value that you assign to the pen's eraser is also saved when you save the pen settings.

Deleting a pressure-sensitive pen setting

You can delete a custom pressure-sensitive pen setting or all custom settings that you've saved.

To delete a custom pressure-sensitive pen setting

1. Choose Window, Palettes, Pen Settings.

2. Click the flyout arrow, and choose Delete Selected Setting to remove the active custom setting.

- You can remove all custom settings and return to the factory default settings by choosing Reset All Pen Settings. When you choose Reset All Pen Settings, an alert appears, warning you that the user-defined custom settings will be removed. Click Yes to delete all custom settings; click No to cancel the operation and return to the Pen Settings Palette.

Setting preferences

You can customize some Corel PHOTO-PAINT default settings to suit your preferences.

You can specify units of measurement for the following items:

- the object and mask transformations applied using the Tool Settings Palette for the Object Picker tool and the Mask Transform tool

- the information accessed from the Document Info command (File menu)

- the Deskew Crop tool and its associated Tool Settings Palette

- the horizontal and vertical rulers

The units that you set on the Ruler page in the Preferences dialog box apply to the current image only; the units you set on the General page apply to the active image and all other images you create.

You can also specify Nudge and Super Nudge distances to move objects and mask marquees in precise increments.

You can improve the display quality of an image by setting screen dithering. Screen dithering works by averaging the depth of pixels in a given area to create additional colors or shades of gray (depending on whether you're working with color, grayscale, or black-and-white images). Screen dithering is especially useful if you are displaying images that contain more colors than your monitor is capable of producing.

By default, when you resample, resize, or crop an image, the Image Window does not resize to accommodate the new image size. Instead, the Image Window maintains its original size and a border appears around the modified document. You can control the display of resampled images by specifying the size of the border or automatically resizing the Image Window to fit the modified image.

You can enable the tool warnings feature. Warnings provide information about the task or tasks that you're performing and help you avoid making mistakes when editing your images. They often appear when you attempt to perform operations that can permanently affect your image.

Choosing the unit of measurement

You can specify the unit of measurement that you want to use for the Horizontal and Vertical rulers and for the mask or object transformations that you apply to images.

To choose the unit of measurement

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Choose a unit of measurement from the Units pop-up menu.

• If you want to specify the unit of measurement for only one of the rulers, set values on the Ruler page in the Preferences dialog box.

Setting the nudge increments

The Nudge and Super Nudge commands let you move objects and mask marquees in precise increments. The nudge value defines the distance (in pixels) by which you want to move an object or mask marquee each time you press an Arrow key. The super nudge value is the multiple of the nudge distance you want to use when moving objects and mask marquees by holding down Shift and pressing an Arrow key.

To set the nudge increments

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Type a value in the Nudge box.

To set the super nudge increments

1. Follow steps 1 and 2 from the previous procedure.

2. Type a value in the Super Nudge box.

Setting the screen dithering

If you are working on an image that contains more colors than your monitor is capable of producing, you can set screen dithering. Screen dithering averages the depth of pixels in a given area to create additional colors or shades of gray.

To set the screen dithering

- Choose View, Screen Dithering, and choose one of the following:
  - None — disables dithering. This command is available only if your computer is in 16-bit color mode
  - Error Diffusion — provides the best results by spreading the dithering across a wider area and tailoring the dithering pattern to the transition being simulated
  - Ordered — approximates color blends using fixed dot patterns. This dithering type applies more quickly than Error Diffusion but is less accurate.

- The Screen Dithering commands are available only if your monitor is displaying less than 16-million colors (24-bit color).

Resizing the Image Window automatically

If you resize, resample, or crop an image, it may no longer fit in the Image Window. You can enable automatic resizing of the Image Window so that it conforms to the new image size.

To resize the Image Window automatically

1. Choose Edit, Preferences.
2. From the Workspace category, choose General.
3. Enable the Automatic View Resize check box.

Framing an image in the Image Window

If you are working with a large image or if you have zoomed in on an image, the Image Window might not be large enough to view the entire image. In this case, a border appears around the image. You can set the size of that gray border or frame within the Image Window.

To frame an image in the Image Window

1. Choose Edit, Preferences.
2. From the Workspace category, choose General.
3. Type a value in the Overscroll box to specify the size, in pixels, of the gray border that surrounds your image within the Image Window.

Choosing the colors of the transparency grid pattern

When you hide the background of an image in the Image Window, the rest of the image is displayed as a checkerboard grid. You can customize the colors of this grid pattern.

To choose the colors of the transparency grid pattern

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. In the Transparency Grid section, click the Color 1 color picker, and choose a color.

4. Click the Color 2 color picker, and choose a color.

- • You can create a custom color or choose from a wider selection of colors by clicking the Other button at the bottom of the Color 1 or Color 2 color pickers.

Enabling and disabling the read-only warning

Whenever you open a file that has the read-only property enabled (e.g., a Kodak Photo CD image file), an alert is displayed stating that the file is read-only and that the Save command is not available.

To enable and disable the read-only warning

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Enable the Enable Read-Only Warning check box to display the read-only warning; disable it to turn the warning off.

- • You can save the changes that you make to a read-only image by saving a copy of the file with a different filename or in a different location.

Enabling and disabling tool warnings

When you use tools, such as the Text tool and the Interactive Fill tool, the changes that you make to the image are displayed in the Image Window but are not permanently applied until you click the Apply button or click outside of the text. Enabling the tool warnings displays a message asking you to

confirm that you want to apply the changes performed on the image using any of these tools. Disabling the tool warnings makes the changes permanent as soon as they are performed.

To enable and disable tool warnings

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Enable the Enable Tool Apply Warning check box to display tool warnings; disable it to turn them off.

Enabling and disabling ToolTips

You can enable or disable ToolTips associated with most screen elements. ToolTips are small labels that appear when you rest the cursor over a tool, button, or other screen element. The labels identify the element above which the mouse is located and can be turned on or off.

To enable and disable ToolTips

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Enable the Show ToolTips check box to display the ToolTips; disable it to turn the ToolTips off.

Viewing image information

The Document Info dialog box and the Image Info Palette provide information about the active image.

Document Info dialog box

The Document Info dialog box displays information about the active Corel PHOTO-PAINT image, including its filename, width, height, resolution, and size. It also displays the file format (e.g., Corel PHOTO-PAINT Image), subformat (e.g., compressed, mixed, or uncompressed), the number of objects that the image contains, and whether the image has changed since the last time you saved it.

Image Info Palette

You can view dynamic information about your image using the Image Info Palette. This Palette displays your cursor coordinates and other information, such as angle, distance, center, radius, and color model values, dynamically as you move the cursor on screen.

The Image Info Palette displays the x and y coordinates of your cursor and the primary and secondary color model values that correspond to those coordinates. The color of the pixel defined by your cursor's x and y coordinates is also displayed, according to the color models that you specify. If you specify both primary and secondary color models, equivalent values for the color of the pixel defined by your cursor's x and y values are displayed. For example, if you specify 24-bit RGB as the primary color model and 8-bit Grayscale as the secondary color model, equivalent values for the selected pixel color are displayed for each color model.

The Image Info Palette can also display the following values, which vary according to the tools that you select:

Value	Description
A — Angle	Displays the angle at which your cursor is moving when you drag to create a selection or shape
D — Distance	Displays the distance that the cursor has moved relative to its start position when you drag to create a shape or selection
C — Center	Displays the x and y coordinates of the center position when you create a circular selection or shape
R — Radius	Displays the x and y coordinates of the radius of a circular selection or shape
X' — X Prime	Displays the change in the x coordinate from its starting position to its final position
Y' — Y Prime	Displays the change in the y coordinate from its starting position to its final position

Using the Document info dialog box

Corel PHOTO-PAINT lets you view detailed information about your image. After you open a file in the Image Window, you can view its name, dimensions, resolution, size, format, and color mode in the Document Info dialog box. You can also determine whether the image contains objects or has changed since the last time it was saved.

To use the Document info dialog box

• Choose File, Document Info.

Using the Image Info Palette

You can use the Image Info Palette to view information about your image as you work on it. The Image Info Palette displays the primary and secondary color models used to display the active image and the cursor's coordinates as

it moves over the image. The values displayed on the Image Info Palette vary according to the tools you use.

To view image information

• Choose Window, Palettes, Info.

To choose new color models

1. Choose Window, Palettes, Info.
2. Click the *Color Model Options button.*
3. In the Color Model Options dialog box, choose a color model from the Primary Color Model pop-up menu.
4. Choose a color model from the Secondary Color Model pop-up menu.

To display the secondary color model

1. Choose Window, Palettes, Info.
2. Click the Color Model Options button.
3. Enable the Display Secondary Color Model check box.

• For information about color models, see "Converting images" on page 339.

• You can change the units of measurement used to display the image information on the Image Info Palette by clicking the flyout arrow and choosing a new unit of measurement.

USING MASKS TO MAKE SELECTIONS

3

Masks are selection tools that let you optimize the retouching capabilities of Corel PHOTO-PAINT. Masks isolate the area that you want to protect from change when you apply color, filters, or other effects to an image. When you select part of an image using a mask tool, the area surrounding the selection is masked or protected. You can also specify to what degree a selection is editable by changing the mask transparency.

A mask covers all areas on the image except the large flower in the center, which is selected. Painting the image with a new color affects the selection only.

Mask types

There are two types of masks: regular and color-sensitive. Regular masks define selections based on discernible shapes in the image. Color-sensitive masks define selections based on the color of the pixels in the image.

After you use the mask tools to select an area on your image, you can paint, copy, and add special effects to the selection without affecting any other regions on the image. You can even transform selected or unmasked areas into objects, or float selections above the image so that they can be moved without affecting the underlying components.

Mask marquees

When you apply a mask to an image, a dashed outline, called the mask marquee, identifies which areas of the image have not been protected (i.e., the selected or editable area). By default, mask marquees are visible on your images; however, you can hide marquees by disabling the Marquee Visible command (Mask menu). Because images vary in color, from very light to very dark, you can customize the color of mask marquees. Customizing the marquee color makes it easy to identify precise areas and outlines on your image. You can also adjust the position of the mask marquee and change the appropriate threshold values. For more information about setting the mask marquee threshold, see "Moving mask marquees and selections" on page 86.

Mask overlay

Another way to identify the areas on your image that are masked or protected is to apply a mask overlay. A mask overlay is a red-tinted, transparent sheet that you can superimpose on your image. When a mask overlay is applied, the masked areas on your image are displayed in varying degrees of red (according to their transparency) and the editable areas on your image are transparent. The deeper the saturation of the red tint, the greater the degree of protection.

A mask overlay covers the masked or protected areas on an image.

Mask modes

Corel PHOTO-PAINT provides four mask modes that fine-tune the shape and behavior of masks on your image: Normal, Additive, Subtractive, and XOR. The Normal mode is the default state and lets you create a single mask on your image. When you make a selection in Normal mode, all other

selections are automatically removed from the image. The Additive mode lets you expand selections by removing parts of existing masks. The Subtractive mode lets you expand masks by removing parts of existing selections. The XOR mode lets you create complex masks in which the overlapping areas are protected. A Mask Mode Indicator appears on the bottom-right corner of the Status Bar and identifies the active mask mode. For more information about the Additive, Subtractive, and XOR modes, see "Expanding and reducing a selection" on page 107.

Paint On Mask mode

You can use the Paint On Mask mode to view a grayscale representation of your mask. When you view a mask in Paint On Mask mode, it is displayed in grayscale in the Image Window. The protected areas of your image are black, while the fully editable areas are white. Pixels included in the selection that are partially protected are displayed in varying degrees of gray.

Paint On Mask mode displays images in grayscale. Masked areas are black and selections are white.
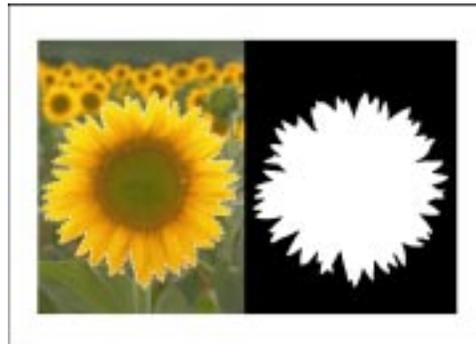
You can control the effect that a mask has on your image by assigning grayscale values between 0 and 255 to its pixels. Mask pixels that have a value of 0 (black) completely protect the underlying image. Mask pixels that have a value of 255 (white) leave the underlying image completely unprotected; these pixels define the selection. You can determine the degree to which the mask pixels protect the underlying image by assigning values between 0 and 255.

Mask behavior

Because masks are protective layers that cover your image, you can move, rotate, skew, distort, and stretch them without affecting the underlying picture. And since masks are only temporary tools that simplify your image-editing tasks, you must save them in a mask channel, save them to disk, or save the image in an appropriate file format to preserve them. If you close an image without saving its mask, the mask and all related information is lost.

Changing the color of the mask overlay

By default, the mask overlay is red; however, if you are working on an image that is primarily red, the overlay does not clearly identify those areas of your image that are selected. Changing the color of the mask overlay can clarify the distinction between the protected and selected areas on your image.

To change the color of the mask overlay

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Click the Mask Tint color picker, and choose a color.

- You can click the Other button at the bottom of the Mask Tint color picker to see more colors or to create a custom color.

- You can apply a mask overlay by enabling the Mask Overlay command in the Mask menu or by clicking the Mask Overlay button on the Standard toolbar.

Changing the color of a mask marquee

By default, mask marquees are black; however, you can choose a new color based on the colors in the active image. Choose marquee colors that make it easy to identify outlines and boundaries in your image.

To change the color of a mask marquee

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. In the Colors section, click the Mask Marquee color picker, and choose a color.

- You can click the Other button at the bottom of the Mask Marquee color picker to see more colors or to create a custom color.

Hiding and displaying a mask marquee

By default, mask marquees are visible in the Image Window, but you can hide or display them at any time.

To hide or display a mask marquee

• Choose Mask, Marquee Visible.

  A check mark appears beside the Marquee Visible command in the Mask menu when it is enabled. If there is no check mark, the mask marquee is not visible in the Image Window.

• You can also display the mask marquee by enabling the Show Mask Marquee button on the Standard toolbar.

Selecting image areas

Whether you create masks to select simple shapes, intricate areas, or specific colors on your image, you can use the tools in the Mask Tools flyout. When you create a mask from scratch, you use the mask tools to select an area on your image that you want to change. This area is surrounded by a mask marquee. The areas that you do not select are covered by a mask.

Creating masks from scratch can become tedious when the areas that you want to protect are intricately designed. For this reason, Corel PHOTO-PAINT also lets you create masks from existing items (e.g., objects, paths, or data that you have copied to the Clipboard). For more information about selecting complex image areas, see "Using alternative methods to select image areas" on page 79.

Inverting masks

Sometimes defining the image area that you want to protect is easier than defining the areas that you want to edit. In these cases, you can create a mask that protects the area you actually want to change, and then invert the mask's characteristics. When you invert a mask, the area on your image that was originally protected or masked becomes editable, and the area that was originally editable is protected by a mask.

After you select an area on an image, you can invert the selection. Here, the inverted selection is shown with a mask overlay.
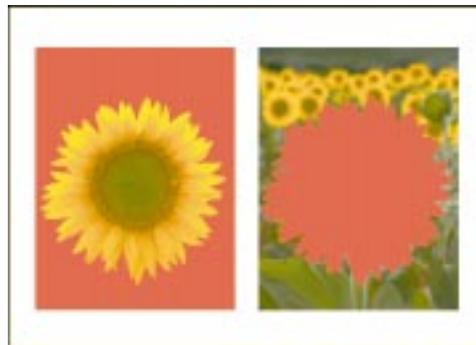
Applying anti-aliasing and feathering to masks

Anti-aliasing and feathering apply a smoothing effect to the pixels that lie on the edge of the mask, creating a more subtle transition between masked and editable regions. Anti-aliasing and feathering are especially useful for smoothing the jagged edges that often result from creating masks along curved or diagonal regions. For more information about edge control, see "Adjusting the edges of a selection" on page 104.

Anti-aliasing

Anti-aliasing makes some of the pixels located on the outside edge of a mask semitransparent, smoothing the transition between masks and selections. The anti-aliasing feature is available on the Property Bar and on the Tool Settings Palette for all mask tools except the Rectangle Mask tool. Rectangular masks do not contain diagonal pixels and do not have jagged edges.

Feathering

Feathering causes a gradual increase in the transparency of the pixels along the outside edge of a mask, smoothing the transition between the image's masked and editable regions. Feathering has a subtle effect on images and is not always visible on the mask marquee. You can preview the feathering effect by applying the mask overlay and zooming in on the outside edge of the mask marquee. You can set the width of the feathered edge in pixels on the Property Bar and on the Tool Settings Palette for the mask tools. You can fine-tune the position of marquees on feathered masks by adjusting the mask marquee threshold. For more information about adjusting mask marquees, see "Adjusting the position of a mask marquee" on page 86.

Compare these three images to view the effects of anti-aliasing (frame 2) and feathering (frame 3).
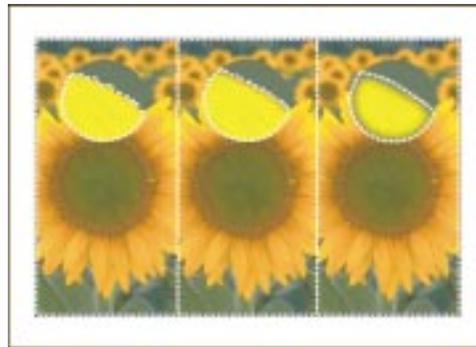
Using masks to select shapes

You can use the mask tools displayed in the Mask Tools flyout to select discernible shapes in your image. When you use these regular mask tools,

the area that is defined by the mask marquee is selected or editable and the rest of the image is covered by a mask. You can reverse the selected and protected areas on your image at any time by inverting the mask.
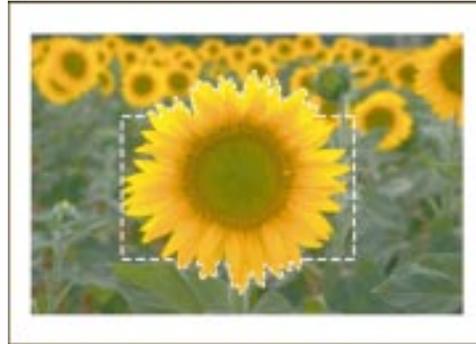
Regular mask tools

You can use a single mask tool to create a simple mask, or you can use any combination of mask tools to create more complex masks. When you choose a tool from the Mask Tools flyout, controls that apply specifically to the active tool are displayed on the Property Bar and on the Tool Settings Palette for the active tool. These controls let you adjust various mask properties, such as dimensions for rectangular or elliptical selections, feathering, anti-aliasing, mask alignment, color tolerance mode, nib attributes, and more.

Tool	Description
▢	The Rectangle Mask tool lets you select rectangular areas on your image.
◯	The Circle Mask tool lets you select circular or elliptical areas on your image.
◌	The Freehand Mask tool lets you select irregularly shaped areas. You can either drag the tool to select curved segments, click to establish anchor points joined by straight segments, or click and drag to select both curved and straight line segments.
🖌	The Mask Brush tool lets you select an area on your image by painting it.
✂	The Scissors Mask tool lets you select areas on your image that are difficult to isolate with the other mask tools. This tool detects areas on your image that are in contrasting color to their surroundings and places a marquee on these edges. You can also use the Scissors Mask tool as a freehand tool.

Before you begin using the mask tools to select image areas, make sure that you have enabled an appropriate mask mode. Corel PHOTO-PAINT also provides mask mode shortcut keys that allow you to temporarily switch modes while you select areas on your image. Holding down Command before selecting an area switches to the Additive mask mode, which lets you expand the editable regions of your image by removing portions of existing masks. Holding down Shift switches to the Subtractive mode, which lets you expand the protected regions of your image by enlarging existing masks. Holding down Command + Shift switches to the XOR mode, which lets you create complex masks in which the overlapping areas are protected. The Mask Mode Indicator identifies the active mask mode and is located on the bottom-right corner of the Status Bar. For more information about the Additive, Subtractive, and XOR modes, see "Expanding and reducing a selection" on page 107.

Selecting a rectangular area

You can use the Rectangle Mask tool to select rectangular areas on an image. You can specify precise values for the width and height of the selection on the Property Bar. After you select the area, you can fine-tune it using the Mask Transform tool or the Mask Brush tool.

You can use the Rectangle Mask tool to make a rectangular selection on an image.

To select a rectangular area

1. Choose Mask, Mode, Normal.
2. Open the Mask Tools flyout and click the *Rectangle Mask tool.*
3. In the Image Window, drag to select the area that you want to edit.

To select a rectangular area of fixed size

1. Choose Mask, Mode, Normal.
2. Open the Mask Tools flyout and click the Rectangle Mask tool.
3. Choose Fixed Size from the Mask Style pop-up menu on the Property Bar.

4. Type a value in the Mask Width box on the Property Bar.

5. Type a value in the Mask Height box on the Property Bar.

6. Click the image to position the top left corner of the selection.

To select a rectangular area of specific height or width

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the Rectangle Mask tool.

3. Choose Row(s) or Column(s) from the Mask Style pop-up menu on the Property Bar.

   If you choose Row(s), you must specify the number of rows of pixels to select (i.e., the height of the selection). In this case, the width is the full image width. If you choose Column(s), you must specify the number of columns of pixels to select (i.e., the width of the selection). In this case, the height is the full image height.

4. Type a value in the Height or Width box on the Property Bar.

   Only one of the boxes is available, depending on whether you chose Row(s) or Column(s) in step 3.

5. Click the image to position the top edge or the left edge of the selection.

- If you begin selecting an area using the Rectangle Mask tool and then hold down Command, the area that you select is a perfect square. If you hold down Option, the area you select is a rectangle that is drawn from the center. If you hold down Command + Option, the area you select is a perfect square that is drawn from the center. These shortcut key operations are available if you choose Normal from the Mask Style list box on the Property bar. Also, they are available only after you begin selecting an area on your image; otherwise, they are used to switch mask modes.

- You can create feathered edges for a mask with the Feather Width box on the Property Bar. In this box, you can type the number of pixels (along the edge of the mask selection) to which feathering will be applied. Feathered pixels gradually become more opaque towards the protected area of the mask and produce a softer, more natural-looking edge.

Selecting a circular or elliptical area

Use the Circle Mask tool to select a circular or elliptical area on your image. You can specify precise values for the width and height of the selection on the Property Bar. The specified width and height values are applied to the

imaginary horizontal and vertical lines respectively, passing through the center point of the selection.

To select a circular or elliptical area

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Circle Mask tool*.

3. Drag to select a circular or elliptical area.

To select a circular or elliptical area of fixed size

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the Circle Mask tool.

3. Choose Fixed Size from the Mask Style pop-up menu on the Property Bar.

4. Type a value in the Mask Width box on the Property Bar.

5. Type a value in the Mask Height box on the Property Bar.

6. In the Image Window, click to position the selection.

• Regardless of the method you choose to select circles or ellipses on your image, anti-aliasing is enabled by default to produce smooth-looking edges. You can disable the Anti-aliasing feature on the Property Bar or on the Tool Settings Palette for the Circle Mask tool.

• If you begin selecting an area using the Circle Mask tool and then hold down Command, the area that you select is a perfect circle. If you hold down Option, the area you select is an ellipse that is drawn from the center. If you hold down Command + Option, the area you select is a perfect circle that is drawn from the center. These shortcut key

operations are available if you chose Normal from the Mask Style list box on the Property Bar. Also, they are available only after you begin selecting an area on your image; otherwise, they are used to switch mask modes.

- You can create feathered edges for a mask with the Feather Width box on the Property Bar. In this box, you can type the number of pixels (along the edge of the mask selection) to which feathering will be applied. Feathered pixels gradually become more opaque towards the protected area of the mask and produce a softer, more natural-looking edge.

Selecting an irregular shape

You can select irregular shapes by combining straight line segments with curved segments using the Freehand Mask tool. If you select an irregular shape using only straight line segments, a minimum of three points is required.

You can use the Freehand Mask tool to select irregular shapes on an image. Here, the sunflower's petals are selected.

To select an irregular shape

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Freehand Mask tool.*

3. Click the image to position the first point in your selection.

4. Do one of the following:

   - Move the cursor to another location, and click to draw a straight line segment between this point and the starting point.

   - Click and drag to create freehand curved segments.

5. Repeat step 4 until the selection is complete.

6. Double-click to finish the selection.

- If you make a mistake when selecting an irregular shape using the Freehand Mask tool, you can press Esc to cancel the selection and start over, or press Delete to remove the last anchor point without removing the entire mask.

- You can connect a straight line segment to a freehand segment by drawing the freehand segment and releasing the cursor at the location you want the line segment to start. You can then move the cursor to the location you want the line segment to end, and click to end the selection.

- You can create feathered edges for a mask by using the Feather Width box on the Property Bar. In this box, you can type the number of pixels (along the edge of the mask selection) to which feathering will be applied. Feathered pixels gradually become more opaque towards the protected area of the mask and produce a softer, more natural-looking edge.

Selecting an area by auto-sensing its edges

You can use the Scissors Mask tool to select an irregularly shaped area within an image by auto-sensing its edges. As you move your cursor over an image, the Scissors Mask tool follows your movement and detects the edges of image areas that are in contrasting color between the starting point and the cursor's current location. A mask marquee is temporarily placed along that edge.

The Scissors Mask tool automatically senses the edges of objects in an image based on color changes.

To select an area by auto-sensing its edges

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Scissors Mask tool.*

3. On the Property Bar, click one of the following tolerance mode buttons:

   - Normal — determines the color tolerance based on color similarity

- HSB — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

4. On the Property Bar, type a tolerance value in the box(es) beside the tolerance mode buttons. If you choose Normal, one box is displayed; if you choose HSB, three boxes are displayed.

   Higher tolerance values mean that more colors are masked or protected.
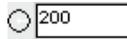
5. On the Property Bar, type a value from 10 to 999 in the *Radius box*.

6. Click to set the starting point.

7. Move the cursor to another location in the image, and click to set the marquee.

8. Repeat steps 6 and 7 until the selection is complete.

9. Double-click to finish the selection.

- When the Mask Visible check box is enabled on the Tool Settings Palette for the Scissors Mask tool, you can select areas across all visible objects; however, when this check box is disabled, you can select only areas on the active object. The active object is displayed with a red outline on the Objects Palette.

- The radius is a square that has dimensions (in pixels) equal to the value you type. The square determines the area in which the automatic edge detection works. When you move the cursor beyond the radius, the Scissors Mask tool can no longer detect edges.

- If you make a mistake when selecting an irregular shape using the Scissors Mask tool, you can press Esc to cancel your selection and start over, or press Delete to remove the last section that you selected.

- You can drag to define sections of the marquee in a freehand mode at any time. Return to the auto-sensing method by releasing the mouse button and moving the cursor to a new location on the image.

- You can also set color tolerance values on the Tool Settings Palette for the Scissors Mask tool.

- If you use anti-aliasing with the Scissors Mask tool, the selection might expand beyond the boundary that you defined. To ensure that the mask marquee remains along the detected edges within the defined Radius, do not use anti-aliasing.

Painting the area to select

You can create a selection or add to an existing selection by brushing over the area of the image that you want to select as if you were painting.

To paint the area to select

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Mask Brush tool.*

3. Drag over the area that you want to select.

- You can add to an existing selection by enabling the Additive mask mode. For more information about expanding selections, see "Expanding and reducing a selection" on page 107.

- If you begin selecting an area using the Mask Brush tool and then hold down Command, the area that you select is constrained to a straight line. If you hold down Command + Shift, you can change the direction of the constraint, and if you hold down Option you can change the size of the nib. These shortcut key operations are available only after you begin selecting an area on your image; otherwise, they are used to switch mask modes.

- You can adjust the size and shape of the brush by choosing the Mask Brush tool from the Mask Tools flyout and setting options on the Property Bar or on the Tool Settings Palette. For more information, see "Creating nibs" on page 127.

Selecting the entire image

You can select the entire image with the Select All command. When you use this command, a mask marquee appears along the outside edge of the image. If you zoom into the image, you cannot see the marquee.

When you select the entire image, all areas are editable.

To select the entire image

- Choose Mask, Select All.

- Double-clicking the Rectangle Mask tool, the Circle Mask tool, or the Freehand Mask tool also selects the entire image.

Inverting a mask

You can select complex, irregularly shaped areas by selecting the surrounding area and then inverting the mask. After you invert a mask, the area on your image that was originally selected is protected, and the area on your image that was originally protected is now selected.

When you invert a mask, the selection and the masked areas are reversed.
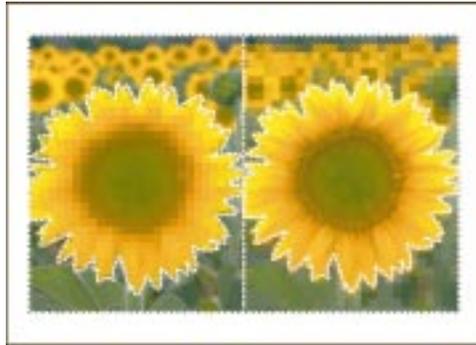
To invert a mask

- Choose Mask, Invert.

- You can also invert a mask by clicking the Invert Mask button on the Standard toolbar.

Using masks to select colors

You can use some of the mask tools displayed in the Toolbox or in the Color Mask dialog box to create masks that surround specific colors in your image. When you use these color-sensitive mask tools, the area that is defined by the mask marquee is selected (editable) and the rest of the image is protected by a mask. You can reverse the selected and protected areas on your image at any time by inverting the mask. For more information about selecting areas, see "Selecting image areas" on page 61. You can use

color-sensitive masks when you want to select a particular color or a range of colors in an image.

Color-sensitive mask tools

The following table lists and describes the color-sensitive mask tools.

Tool	Description
	The Lasso Mask tool lets you select colors for editing in an area on your image. You can draw freehand or click to establish anchor points on your image. The first point that you click is called the seed color. This color — and all other pixels in the area that fall within the specified color tolerance range — are masked or protected on the image. The pixels that fall within the area but do not fall within the color tolerance range that you define for the seed color are selected or editable. You can define the color tolerance on the Property Bar or on the Tool Settings Palette for the active tool.
	The Magic Wand Mask tool lets you select colors for editing in an area on your image. The first point that you click with the Magic Wand Mask tool is called the seed color. This color — and all other colors that fall within the specified tolerance range and that lie adjacent to the seed color — are selected or editable. All other colors are masked or protected. You can define the color tolerance on the Property Bar or on the Tool Settings Palette for the active tool.

Color Mask dialog box

You can use the commands and options in the Color Mask dialog box to define more complex, color-sensitive masks that let you select colors anywhere on your image rather than just in a single area. The Eyedropper tool in the Color Mask dialog box lets you specify the color or range of colors that you want to select. The colors that do not fall within the color tolerance and threshold values that you set in the Color Mask dialog box are masked or protected on the image.

You can fine-tune the color-sensitive masks that you create by setting mask modes, preview display options, color tolerance, and threshold values in the Color Mask dialog box. The Color Mask dialog box is not available when you are working with black-and-white or duotone images.

Selecting colors in a particular area on an image

You can use the Lasso Mask tool to select colors in a particular area on your image. The first color that you select and all other colors in the selection that fall within the defined color tolerance are masked or protected.

To select colors in a particular area on an image

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Lasso Mask tool.*

3. Click the image to establish an anchor point, move to the next position, and continue clicking at different points until the area is selected.

4. Double-click to set the mask.

• When the Mask Visible check box is enabled on the Tool Settings Palette for the Lasso Mask tool, you can select areas across all visible objects; however, when this check box is disabled, you can select only areas on the active object. The active object is displayed with a red outline on the Objects Palette.

• You can also drag to draw freehand.

To change the color tolerance of the Lasso Mask tool

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the Lasso Mask tool.

3. On the Property Bar, click one of the following tolerance mode buttons:

  • Normal — determines the color tolerance based on color similarity

  • HSB — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

4. On the Property Bar, type a tolerance value in the box(es) beside the tolerance mode buttons. If you choose Normal, one box is displayed; if you choose HSB, three boxes are displayed.

   Higher tolerance values mean that more colors are masked or protected.

5. Follow steps 3 and 4 from the previous procedure to reapply the mask with the new settings.

- You can also set color tolerance values on the Tool Settings Palette for the Lasso Mask tool.

Selecting adjacent colors on an image

You can use the Magic Wand Mask tool to select a large area that contains similar colors (e.g., a sky that contains various shades of blue). This tool selects colors that are adjacent to one another and that fall within the color tolerance range. When you use this tool, the mask marquee expands to include all adjacent pixels that fall within the tolerance range.

The image background is selected with the Magic Wand Mask tool. Two separate marquees are required to identify the selection.
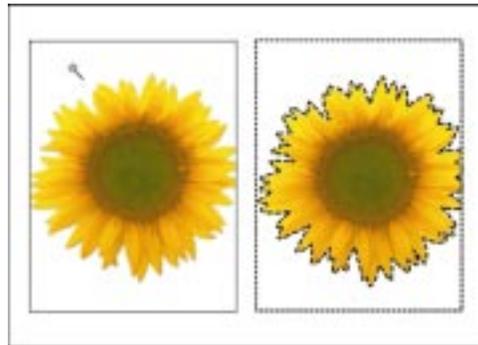
To select adjacent colors on an image

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click the *Magic Wand Mask tool*.

3. On the Property Bar, click one of the following tolerance mode buttons:
   - Normal — determines the color tolerance based on color similarity
   - HSB — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

4. On the Property Bar, type a tolerance value in the box(es) beside the tolerance mode buttons. If you choose Normal, one box is displayed; if you choose HSB, three boxes are displayed (one for Hue, one for Saturation, and one for Brightness).

   Higher tolerance values mean that more colors are masked or protected.

5. Click the color that you want to select.

- When the Mask Visible check box is enabled on the Tool Settings Palette for the Magic Wand Mask tool, you can select areas across all visible objects; however, when this check box is disabled, you can select areas only on the active object. The active object is displayed with a red outline in the Objects Palette.

- You can also set color tolerance values on the Tool Settings Palette for the Magic Wand Mask tool.

- You can expand or reduce a selection by enabling the Additive or Subtractive mask modes. For more information about expanding or reducing selections, see "Expanding and reducing a selection" on page 107.

Selecting specific colors anywhere on an image

You can select not only adjacent pixels of similar color but also pixels that fall within a defined color range anywhere in the image. You can select several different colors in an image or protect a color that appears in several isolated locations in the image.

To select colors anywhere on an image

1. Choose Mask, Color Mask.

2. Click one of the following mask mode buttons:

   - *Normal* — creates a single mask in the Image Window

   - *Additive* — expands the editable regions of your image by removing parts of existing masks

   - *Subtractive* — expands the protected regions of your image by removing parts of existing selections

   - *XOR* — lets you create complex masks in which overlapping areas of the editable regions are protected

3. Choose Sampled Colors from the color options pop-up menu.

4. Click the *Eyedropper tool*.

5. Click the color that you want to select on the image.

6. Repeat step 5 to select additional colors.

• Color-sensitive masks can produce selections that have sharp angles and bends. You can blend the edges of your color-sensitive masks by moving the Smooth slider in the Color Mask dialog box.

• If colors from a previous session appear in the Color Mask dialog box, click the Reset button.

• If you want to add a preset color quickly without selecting it on the image itself, you can choose another option from the color options pop-up menu.

• You can enable the Preview button to examine the color mask before applying it to the image.

• You can preview a color mask in the following display options: Overlay, Grayscale, White Matte, Black Matte, and Marquee. The Marquee display option is available only if the Marquee Visible command is enabled in the Mask menu.

• You can remove selected colors from a preview by disabling the X check box in the list of sampled colors.

Adjusting the tolerance of a color-sensitive mask

You can adjust the tolerance to determine which pixels are selected or editable, and which are protected when you fine-tune your color mask. A pixel is included in the selection if its grayscale value falls within the defined tolerance; therefore, setting higher tolerance values includes more colors in the selection.

To set the default tolerance

1. Choose Mask, Color Mask.

2. Click the flyout arrow and choose Set Tolerance Default.

3. Type a tolerance value in the Default Tolerance box.

To adjust the tolerance for a color in a mask

1. Choose Mask, Color Mask.

2. Choose a color from the list of sampled colors.

3. Click the More button.

4. Enable one of the following tolerance mode buttons:

   - Normal — determines the color tolerance based on color similarity

   - HSB Mode — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

5. Move the tolerance slider to set the tolerance value(s) for the sampled color or type precise values in the box beside the slider.

   If you are using Normal mode, one tolerance slider and one value box are displayed. If you are using HSB mode, three sliders and three value boxes are displayed (one for Hue, one for Saturation, and one for Brightness).

- After you enable the Normal or HSB Mode tolerance mode buttons, you can set the tolerance values of the selected color directly in the sampled colors list. If the Normal button is enabled, click once in the N box to the right of the Color box and type a value between 0 and 100. If the HSB button is enabled, type values in the hue, saturation, and brightness boxes.

- You can enable the Preview button to examine the color mask before you apply it to the image.

Adjusting the threshold of a color-sensitive mask

Setting threshold values in the Color Mask dialog box lets you convert selected colors to black or white. Adjust the preview display options to view different representations of the threshold when it is applied to your image. Masked areas are always displayed in black; selections are always displayed in white — however, black and white translate differently, depending on the preview method you have selected in the Color Mask dialog box.

To adjust the threshold for a mask

1. Choose Mask, Color Mask.

2. Click the *Normal mask mode button.*

3. Choose Grayscale from the preview pop-up menu.

4. Click the More button in the Color Mask dialog box.

5. Do one of the following:

   • Enable the To Black button to convert the selected color to black on the image.

   • Enable the To White button to convert the selected color to white on the image.

6. Move the Threshold slider to set the brightness level at which the selected colors are converted to black or white.

• The To Black command uses black to display the pixels with a brightness value that is below the threshold you set using the Threshold slider. The To White command uses white to display the pixels with a brightness value that is above the threshold you set using the Threshold slider.

• You can enable the Preview button to examine the color mask before you apply it to the image.

• If you enable the To Black button, a value of 0 is black; higher values are shades of gray. If you enable the To White button, a value of 255 is pure white; lower values are shades of gray. You can type precise threshold values in the Threshold box beside the slider.

Saving and loading color-sensitive masks

After you create a color-sensitive mask on your image, you can save the mask for use on other images. You can also load a mask that you have previously saved. When you save a color-sensitive mask, the file is saved in the Corel PHOTO-PAINT Color Mask file format.

To save a color-sensitive mask

1. Choose Mask, Color Mask.

2. Create a color-sensitive mask on the active image.

3. Click the flyout arrow and choose Save Color Mask.

4. Locate the folder where you want to save the color mask.

5. Specify a filename, and click Save.

To load color-sensitive masks

1. Choose Mask, Color Mask.

2. Click the flyout arrow and choose Open Color Mask.

3. Locate the folder where the color-sensitive mask is stored.

4. Choose the filename, and click Open.

• If you load a color-sensitive mask without saving the current color-sensitive mask, the current mask is lost.

• You can also save color-sensitive masks as mask channels by clicking the flyout arrow in the Color Mask dialog box, and choosing Mask To Channel. For more information about saving masks as channels, see "Managing multiple masks" on page 118.

Using alternative methods to select image areas

Although the regular and color-sensitive mask tools provide flexibility when you select shapes and colors on your images, there are other ways to select complex image areas.

Objects and text

If you have created an object and you want to select an area that has the same shape, you can use the Create From Object(s) command in the Mask menu. By default, text created in Corel PHOTO-PAINT is considered an object. If you want to select an area on your image in the shape of text, you can use the Render Text To Mask command on the Property Bar for the Text tool, or you can click the Render to Mask check box on the Tool Settings Palette.

Clipboard contents

You can also use the contents of the Clipboard when you select an area on your image. You can use the Paste As New Selection command (Edit menu) to paste the Clipboard's contents into the active image as a floating selection. When a selection floats on your image, you can move it without affecting the underlying image. In this case, a floating selection behaves somewhat like a mask because you can apply effects or color to the image and only affect those pixels that are floating above it in the selection.

If you use another mask tool outside the selection, the floating selection is combined with the image background and the mask marquee disappears. You can merge the selection with the background without losing the marquee by defloating the selection. For more information about floating selections, see "Using the Clipboard to select areas on an image" on page 82.

Paths

Paths are a series of lines and curves that you draw using the Path Node Edit tool. If the area that you want to select on your image is complicated, you can use the Path Node Edit tool to define it. Then, you can convert the area that lies outside the path to a mask using the Path To Mask button on the Property Bar. The area enclosed by the path is then selected. If you create an open path (one in which the first and last nodes are not joined), the mask marquee automatically joins the first and last nodes to define the selection more accurately.

Color channels

The number of color channels in an image depends on the color mode of the image. For example, an RGB image has a red channel (R), a green channel (G), a blue channel (B), and a composite channel that combines the R, G, and B channels to display the image in full color.

The R, G, and B channels contain the color information for the image's red, green, and blue components, respectively. You can view the image using these individual channels to clearly display the contrast between the areas that you want to select and those that you want to mask. Then you can use the Magic Wand Mask tool or the Lasso Mask tool to select an area directly on the channel. For more information about using these tools to select colors, see "Selecting colors in a particular area on an image" on page 72 and "Selecting adjacent colors on an image" on page 74. When you make a channel visible, the selection is outlined by a mask marquee.

Selecting text-shaped areas on an image

You can select text-shaped areas on an image when you create the text, or you can convert existing text into a selection. If you convert existing text into a selection, both the text object and the text-shaped selection appear in your image. Corel PHOTO-PAINT creates a mask around the text, and the text-shaped area of the image is selected and editable. The text is displayed in the current paint color.

Text-shaped selections can be made using the Render Text To Mask feature.

To select text-shaped areas on an image

1. Click the *Text tool*.

2. Set the font style, font size, and other text attributes on the Property Bar.

3. Click either the *Render Text To Mask button* on the Property Bar or the Render to Mask check box on the Tool Settings Palette.

4. Click inside the Image Window to anchor the cursor and type the text.

5. Click another tool in the Toolbox.

   Corel PHOTO-PAINT creates a mask around the text so that the text-shaped area on the image is selected and editable.

- You can use the Render to Mask feature to apply color or special effects, such as embossing or blurring, to a text-shaped area on an images.

To select the area defined by existing text

1. Click the Text tool.

2. Set the font style, font size, and other text attributes on the Property Bar.

3. Disable either the Render Text To Mask button on the Property Bar or the Render to Mask check box on the Tool Settings Palette.

4. Click inside the Image Window to anchor the cursor and type the text.

5. Open the Object/Mask Tools flyout and click the *Object Picker tool.*

6. Choose Mask, Create From Object(s).

- You can use the Render to Mask feature to apply color or special effects, such as embossing or blurring, to a text-shaped area on an images.

- You can move the object with the Object Picker tool or move the selection using the Mask Transform tool.

Using objects to select areas on an image

You can select areas based on the shape of existing objects in the image. You can also use multiple objects to select areas on an image.

To create a mask from an object

1. Open the Object/Mask Tools flyout and click the *Object Picker tool.*

2. Select an object.

3. Choose Mask, Create From Object(s).

• To create a selection from several objects, hold down Shift, click each object you want to include in the mask, and then choose Mask, Create From Object(s).

Using the Clipboard to select areas on an image

Information that is cut or copied to the Clipboard can be pasted into Corel PHOTO-PAINT as a floating selection. You can apply color or effects to the selection, or you can invert the area to mask it. If you move a floating selection, the image pixels that it contains move with it.

To use the Clipboard contents to select areas on an image

1. Do one of the following to place data in the Clipboard:

   • Choose Edit, Copy to copy the selected data to the Clipboard.

   • Choose Edit, Cut to remove the selected data from the active window and copy it to the Clipboard.

2. Choose Edit, Paste, As New Selection.

• When you click the Mask Transform tool, or use any of the other mask tools outside of the selection, the pixels inside the selection are merged with the background. You can merge the selection with the background without loosing the marquee by defloating the selection. For more information about floating or defloating selections, see "Moving mask marquees and selections" on page 86.

• You can cut or copy selections from any application; however, if you are working with an image file in Corel PHOTO-PAINT, select the area that you want to copy to the Clipboard using a *mask tool*.

Pasting data into an existing selection

You can paste data from the Clipboard into an area that you have selected using a mask. The Clipboard's contents appear inside the current selection.
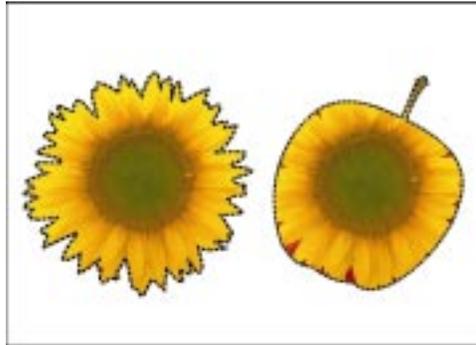
To paste data into an existing selection

1. Do one of the following to place data in the Clipboard:

   • Choose Edit, Copy to copy the selected data to the Clipboard.

   • Choose Edit, Cut to remove the selected data from the active window and copy it to the Clipboard.

2. In Corel PHOTO-PAINT, choose Edit, Paste, Into Selection.

• When you paste data into a selection, a clip mask is created from the original data and the pasted data is an object that is enabled to the clip mask but not linked. For more information about clip masks, see "Editing an object's transparency" on page 232.

• You can cut or copy selections from any application; however, if you are working with an image file in Corel PHOTO-PAINT, select the area that you want to copy to the Clipboard using a mask tool.

• Once you have pasted data into a selection, you can drag it to a new location on the image.

Using paths to select areas on an image

You can select areas on an image based on the shape of open or closed paths. In fact, the additional editing capabilities of the Path Node Edit tool make it easy to select complex image areas.

To use an existing path for image area selection

1. Click the *Path Node Edit tool*.

2. Click the *Open Path button* on the Property Bar.

3. Locate the folder where the path file is stored.

4. Choose the filename.

5. Click Open.

6. Click the *Path To Mask button* on the Property Bar.

- You can enable the Anti-Aliasing check box in the Path To Mask dialog box to smooth the edges of the selection. Anti-aliasing may require additional processing time.

To create a path for image area selection

1. Click the *Path Node Edit tool*.

2. Click the *New Path button* on the Property Bar.

3. Click the image to place the first point of the path.

4. Continue clicking the image until you complete the path's outline.

5. Click the Path To Mask button on the Property Bar.

- If the path consists of several separate closed paths, any overlapping areas between the paths are protected by a mask; only the nonintersecting areas are selected and editable.

- You can enable the Anti-Aliasing check box in the Path To Mask dialog box to smooth the edges of the selection. Anti-aliasing may require additional processing time.

Using color channels to define a selection

You can use individual color channels to help you define a selection. Viewing images in their color channels can make it easier to distinguish between the areas that you want to select and those that you want to protect.

To use color channels to define a selection

1. Choose Window, Palettes, Channels.

2. On the Channels Palette, choose the channel you want to preview.

3. On the Channels Palette, enable or disable the *Eye icon* beside a color channel to add or remove the color channel from the preview.

4. Open the Mask Tools flyout and do one of the following:

   • Click the *Lasso Mask tool.*

   • Click the *Magic Wand Mask tool.*

5. Select an area on the image.

• You can protect the selected area and make the rest of the image editable by choosing Mask, Invert. For more information about inverting masks, see "Inverting a mask" on page 71.

Selecting areas across all visible objects

You can use the Lasso Mask tool, the Scissors Mask tool, or the Magic Wand Mask tool to select areas on your image that include all objects — as if they were merged with the background. When the Mask Visible check box is enabled on the Tool Settings Palette for any of these tools, you can select areas across all visible objects; however, when this check box is disabled, you can select areas only on the active object. The active object is displayed with a red outline on the Objects Palette.

To select areas across all visible objects

1. Open the Mask Tools flyout and click one of the following tools:

   • *Lasso Mask tool*

- *Scissors Mask tool*
- *Magic Wand Mask tool*

2. Choose Window, Palettes, Tool Settings.

3. Enable the Mask Visible check box on the Tool Settings Palette for the active tool.

4. Click a color on the image.

Moving mask marquees and selections

When you move a mask marquee, you can reposition the marquee itself or you can move the marquee and the pixels that it contains.

You can move a mask marquee or an entire selection to a new location on the image.
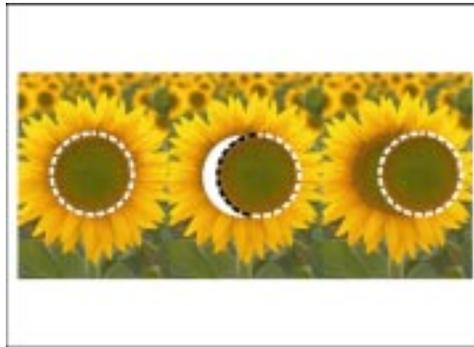
Moving the marquee

You can move a mask marquee independently of the selection that it defines by clicking the Mask Transform tool and dragging the marquee to a different position on the image. Moving the marquee does not affect the underlying image.

Moving the selection

You can move a selected area on the image using the Rectangle Mask, Circle Mask, Freehand Mask, Lasso Mask, Scissors Mask, or Magic Wand Mask tools in the Normal mask mode. Choose one of these mask tools, and drag the selection to its new location. By default, the pixels inside the marquee are cut from the image when the mask is moved. A paper-colored area in the shape of the selection is left on the image where the selection was originally located.

If you choose the Float command (Mask menu) before you move the selection, you create a floating selection. This means that the selected area is copied to a new location, while the underlying image remains intact. While the selection is floating, you can paste copies of it onto the image, much like using a stamp to replicate a signature or shape. You can float or defloat a

selection by enabling and disabling the Float/Defloat Mask button on the Property Bar.

Aligning mask marquees

Mask marquees can be aligned to objects, to the entire image, to guidelines, or to the grid. You can manually align a marquee to guidelines or to the grid by moving the mask to the desired location; or, you can use the Snap To commands (View menu) to force the marquee to move to the next guideline or grid line. To center mask marquees on a guideline, you must disable the Snap To command first.

If you want to specify precise alignment options for the mask marquee, use the Align command (Mask menu). The Mask Align dialog box lets you choose from a variety of alignment options, including aligning a marquee to the center of the image, to the active object, or to the selected objects. Masks can be aligned horizontally and vertically in many combinations.

Adjusting the position of mask marquees

By default, the mask marquee is placed along the outermost edge of the selection. You can, however, adjust the marquee's position to fine-tune the outlined areas of a selection. The shape of the selection remains intact; only the position of the marquee changes. This makes it easier to see the result of the changes that you are applying.

The position of the mask marquee, also called its threshold, is set in relation to the transparency value of the pixels located on the edge of the selection. The result of changing the marquee's threshold is most apparent when the new threshold value is applied to a selection that has a wide feathered edge or that has been created with anti-aliasing.

For example, setting a threshold value of 1 places the marquee along the first line of pixels that are completely opaque on the selection's edge. Setting the threshold value to 255 places the marquee along the first line of pixels that are completely transparent on the selection's edge.

Moving the selected area on an image

When you move a mask selection, both the mask marquee and the pixels that it encloses are moved to a new location. The area that is exposed by moving the mask selection is filled with the current paper color.

To move a selection

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click one of the following tools:

- *Rectangle Mask tool*

- *Circle Mask tool*

- *Freehand Mask tool*

- *Lasso Mask tool*

- *Scissors Mask tool*

- *Magic Wand Mask tool*

3. Drag the selection to a new location.

- You can copy a selection to a new location by choosing Mask, Float and dragging the selection to a new location.

- You can also move a selection and leave the background intact by holding down Option and dragging the selection to a new location; or, you can hold down Control, click the selection, choose Copy, and paste the selection into the new location.

- You can also hold down Control, click the image, choose Cut, and paste the selection into the new location to fill the exposed area with the paper color.

Moving a mask marquee

You can move a mask marquee to a new location on an image without moving the selection that it encloses.

The mask marquee is moved to a new location on the image.

To move a mask marquee

1. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

2. Drag the marquee to a new location on the image.

Moving a mask marquee in preset increments

You can set a precise distance increment by which to nudge mask marquees when you move them to a new location. You can move the marquee in increments of the nudge distance, or you can set a Super Nudge distance as a multiple of the first nudge distance to move the marquee further in a single operation. The Super Nudge value represents the number of times the Nudge distance is repeated.

To move a mask marquee in preset increments

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Type a distance increment (in pixels) in the Nudge box.

4. Click OK.

5. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

6. Press an Arrow key to move the marquee in the arrow's direction by the Nudge distance.

To move a mask marquee in larger increments

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. Type a value in the Super Nudge box.

4. Click OK.

5. Open the Object/Mask Tools flyout and click the Mask Transform tool.

6. Hold down Shift and press an Arrow key to move the marquee by the Super Nudge distance.

Aligning a mask marquee

You can align mask marquees to objects, to the edges or center of the image, or to a grid. By default, masks are aligned to the center of the image.

To align a mask marquee to the edges or center of the image

1. Choose Mask, Align.

2. In the Align To section, enable the Document button.

3. Enable one of the following vertical alignment check boxes:

   • Top — moves the marquee to the top of the image

- Center — moves the marquee to the vertical center of the image
- Bottom — moves the marquee to the bottom of the image

4. Enable one of the following horizontal alignment check boxes:

- Left — moves the marquee to the left edge of the image
- Center — moves the marquee to the horizontal center of the image
- Right — moves the marquee to the right edge of the image

To align a mask to one or more objects

1. Select the object(s) to which you want to align the mask.

2. Choose Mask, Align.

3. In the Align To section, enable one of the following buttons:

- Active Object — aligns the mask to the active object in the image
- Selected Object(s) — aligns the mask to the selected object in the image

4. Enable one of the following vertical alignment check boxes:

- Top — moves the marquee to the top of the active or selected object(s)
- Center — moves the marquee to the vertical center of the active or selected object(s)
- Bottom — moves the marquee to the bottom of the active or selected object(s)

5. Enable one of the following horizontal alignment check boxes:

- Left — moves the marquee to the left edge of the active or selected object(s)
- Center — moves the marquee to the horizontal center of the active or selected object(s)
- Right — moves the marquee to the right edge of the active or selected object(s)

- You can also open the Mask Align dialog box by clicking the Align Mask button on the Property Bar when a mask tool is active.

- You can align mask marquees in your image precisely by snapping them to grid lines. For more information about the grid and guidelines, see "Using the grid, rulers, and guidelines" on page 28.

Adjusting the position of a mask marquee

Fine-tune the placement of mask marquees on your image by adjusting their position on the edge of the selection. When you adjust the position of a mask marquee, the area on the image that it encloses is not altered; the position of the marquee is set in relation to the transparency of the pixels on the edge of the selection.

To adjust the position of a mask marquee

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. In the Threshold section, type a grayscale value (from 1 to 255) in the Mask box.

- When you adjust the position of a mask marquee, it becomes located along pixels that have the specified threshold value. This threshold value is also used for all other masks you create until you change the value.

Removing a mask

When you remove a mask from an image, the entire image is considered editable. You can save a mask to a disk or to a mask channel before removing it so that you can access it later on.

To remove a mask

- Choose Mask, Remove.

- If the selected area on your image was floating before you removed the mask, it is automatically merged with the background.

- Before you remove a mask, determine whether you want to save it for use on other images. For more information, see "Saving and loading color-sensitive masks" on page 78 and "Saving masks in channels" on page 120.

- You can also remove masks by clicking the Remove Mask button on the Standard toolbar.

Transforming selections

You can transform a selection by rotating, mirroring, resizing, scaling, skewing, distorting, or applying perspective to its mask marquee. If the selection is floating above the image, it is automatically combined with the underlying image before the transformation is applied. All transformations are applied using the Mask Transform tool and its associated commands, which are displayed on the Tool Settings Palette and on the Property Bar. You can also transform a selection directly in the Image Window by dragging the selection handles that surround it when the Mask Transform tool is active.

After you select the area on your image that you want to transform, click the Mask Transform tool to display handles for resizing, scaling, and mirroring. Clicking the Mask Transform tool and then clicking once inside the selection displays handles for rotating and skewing. Clicking another time inside the selection displays handles for distorting. Clicking again inside the selection displays handles for applying perspective.

For more precise transformations, you can display a nonprintable grid on screen. The Snap To Grid command (View menu) makes the grid magnetic, which means that as you start dragging the handles, the mask marquee automatically jumps to the closest grid line.

When you resize, scale, skew, or rotate a selection, its edges can become somewhat jagged. For this reason, the Property Bar and the Tool Settings Palette each provide an anti-aliasing option, which is enabled by default.

The horizontal and vertical values displayed on the Property Bar and on the Tool Settings Palette for transformations are based on the current unit of measurement; you can change the unit of measurement in the Preferences dialog box (Edit menu).

You can apply transformations to the physical appearance of a selection (not just its shape), by converting the selection to an object. For more information, see "Creating and copying objects" on page 190.

Selecting a mask marquee

Before you can transform a selection, you must select the mask marquee. When you select a mask marquee, its selection handles are displayed in the Image Window.

To select a mask marquee

- Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

Rotating a selection

You can change the orientation of a selection by rotating the mask marquee with the Mask Transform tool. You can specify a precise angle of rotation on the Property Bar, or you can perform the rotation directly in the Image Window. By default, the mask marquee rotates around its center point, but you can drag the center of rotation to another location, or you can specify new ruler coordinates for the center of rotation on the Property Bar.

Transform mask marquees by rotating them on an image.

To rotate a selection using the Property Bar

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Rotate mode* from the transform pop-up menu on the Property Bar.

4. Type a value in the Horizontal Transformation box on the Property Bar to specify the horizontal distance between the ruler's origin and the center of rotation.

5. Type a value in the Vertical Transformation box on the Property Bar to specify the vertical distance between the ruler's origin and the center of rotation.

6. Type the rotation angle in the Rotation Angle box.

7. Click the Transform button on the Property Bar to preview the rotation in the Image Window.

8. Click the Apply button to apply the rotation.

To rotate a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Click inside the selection.

4. Drag a corner handle until you're satisfied with the marquee's rotation.

5. Double-click inside the selection to apply the rotation.

- You can move the center of rotation relative to its current location by enabling the Relative Center button and typing new values in the Horizontal and Vertical Transform boxes on the Property Bar.

- Before applying the rotation, you can return the selection to its original position by pressing Esc or double-clicking outside the selection. You can also cancel the rotation by holding down Control, clicking inside the selection, and choosing Reset.

- You can also apply the rotation by holding down Control, clicking inside the selection, and choosing Apply.

- You can reduce jagged edges by enabling the Anti-Aliasing button on the Property Bar.

Resizing a selection

You can resize a selection by specifying new vertical and horizontal dimensions on the Property Bar or by dragging the mask marquee selection handles on screen. If you drag one of the marquee's center selection handles, only one of its dimensions is affected. If you drag one of the marquee's corner handles, you can modify both dimensions proportionately or nonproportionately.

To resize a selection using the Property Bar

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Size mode* from the transform pop-up menu on the Property Bar.

4. Type the horizontal dimension in the Horizontal Transformation box on the Property Bar.

5. Type the vertical dimension in the Vertical Transformation box on the Property Bar.

6. Click the Transform button to preview the transformation in the Image Window.

7. Click the Apply button to apply the transformation.

To resize only one dimension of a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Drag a center handle on any side of the mask marquee.

4. Double-click inside the selection to apply the transformation.

To resize both dimensions of a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Drag a corner handle to size the selection proportionately.

4. Double-click inside the selection to apply the transformation.

- Hold down Option while you resize a marquee to resize the selection from the center. This means that the change in size occurs in two opposite directions when you drag a center handle, and in all four directions when you drag a corner handle.

- Hold down Command while you resize a marquee to resize the selection in 100% increments.

- Hold down Shift while you resize a marquee to resize the selection non-proportionately.

- Before applying the transformation, you can return the selection to its original size by pressing Esc or by double-clicking outside the mask marquee. You can also cancel the transformation by holding down Control, clicking inside the marquee, and choosing Reset.

Scaling a selection

You can scale a selection by specifying new vertical and horizontal dimensions on the Property Bar or by dragging the mask marquee selection handles on screen.

Transform a mask marquee by scaling it on an image.
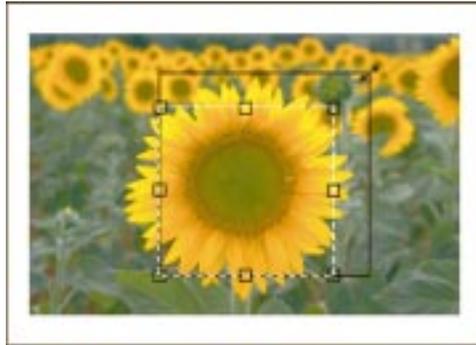
To scale a selection using the Property Bar

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Scale mode* from the transform pop-up menu on the Property Bar.

4. Type a scaling percentage in the Horizontal Transformation box on the Property Bar.

5. Type a scaling percentage in the Vertical Transformation box on the Property Bar.

6. Click the Transform button to preview the transformation in the Image Window.

7. Click the Apply button to apply the transformation.

- You can click the Maintain Aspect button on the Property Bar to scale both sides of the selection proportionately.

To scale a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Choose the Scale mode from the transform pop-up menu on the Property Bar.

4. Drag a corner handle to scale the selection proportionately.

5. Double-click inside the selection to apply the transformation.

- Before applying the transformation, you can return the selection to its original size by pressing Esc or by double-clicking outside the selection. You can also cancel the transformation by holding down Control, clicking inside the selection, and choosing Reset.

- You can also apply the transformation by holding down Control, clicking inside the selection, and choosing Apply.

- You can reduce jagged edges by enabling the Anti-Aliasing button on the Property Bar.

Creating a mirror image of a selection

You can mirror the area that you've selected by setting options on the Property Bar or by dragging the marquee's selection handles directly in the Image Window.

The mask marquee is reflected or mirrored on the image.
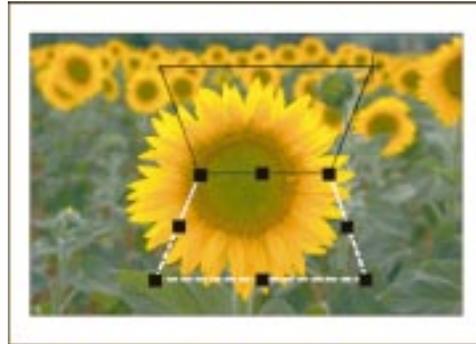
To mirror a selection using the Property Bar

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Scale mode* from the transform pop-up menu on the Property Bar.

4. Enable one of the following buttons:

   - *Flip Object Horizontally button* — mirrors the selection along a vertical axis

   - *Flip Object Vertically button* — mirrors the selection along a horizontal axis

5. Click the Transform button to preview the transformation in the Image Window.

6. Click the Apply button to apply the transformation.

To mirror a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Choose the Scale mode from the transform pop-up menu on the Property Bar.

4. Drag a center handle across the selection beyond the opposite center handle.

5. Double-click inside the selection to apply the transformation.

- You can make the mirrored marquee the same size as the original by holding down Command while you drag the center handle.

- You can have additional control over the size and placement of the mirrored selection by enabling the Snap To Grid command in the View menu. For more information about aligning objects to grids, see "Working with the grid" on page 29.

- Before applying the transformation, you can return the selection to its original position by pressing Esc or by double-clicking outside the selection. You can also cancel the transformation by holding down Control, clicking inside the selection, and choosing Reset.

- You can also apply the transformation by holding down Control, clicking inside the selection, and choosing Apply.

Skewing a selection

You can skew the area that you've selected by setting options on the Property Bar or by dragging the skewing arrows in the Image Window.

The mask marquee is skewed or slanted on the image.
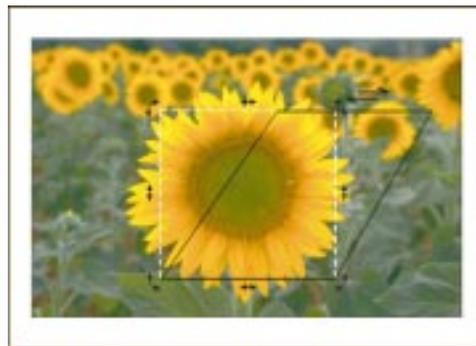
To skew a selection using the Property Bar

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Skew mode* from the transform pop-up menu on the Property Bar.

4. Type a value in the Horizontal Transformation box on the Property Bar.

5. Type a value in the Vertical Transformation box on the Property Bar.

6. Click the Transform button to preview the transformation in the Image Window.

7. Click the Apply button to apply the transformation.

• The values in the transformation boxes on the Property Bar represent the angles (in degrees) at which you want to slant the shape of the selection.

To skew a selection directly in the Image Window

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the Mask Transform tool.

3. Choose the Skew mode from the transform pop-up menu on the Property Bar.

4. Drag the skewing arrows (the two two-headed center arrows on each side of the highlighting box) in the direction that either arrow points.

5. Double-click inside the selection to apply the transformation.

• Before applying the transformation, you can return the selection to its original shape by pressing Esc or by double-clicking outside the selection. You can also cancel the transformation by holding down Control, clicking inside the selection, and choosing Reset.

• You can also apply the transformation by holding down Control, clicking inside the selection, and choosing Apply.

Distorting a selection

You can use the Mask Transform tool to distort the shape of a selection in the Image Window. Distortion transforms the selection by stretching and bending the mask marquee.

To distort a selection

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Distort mode* from the transform pop-up menu on the
   Property Bar.

4. Drag the arrows to distort the shape of the selection.

5. Double-click inside the selection to apply the transformation.

- After creating the mask, you can also display the distortion arrows by
  clicking twice inside the selection.

- Before applying the transformation, you can return the selection to its
  original shape by pressing Esc or by double-clicking outside the selection.
  You can also cancel the transformation by holding down Control, clicking
  inside the selection, and choosing Reset.

- You can also apply the transformation by holding down Control, clicking
  inside the selection, and choosing Apply.

Applying perspective to a selection

You can add a three-dimensional appearance to the shape of your selections
by applying perspective directly in the Image Window.
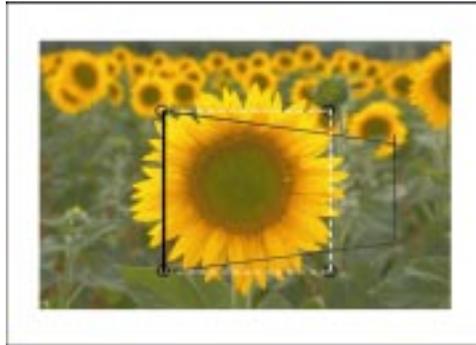
To apply perspective to a selection

1. Create a mask using one of the mask tools.

2. Open the Object/Mask Tools flyout and click the *Mask Transform tool*.

3. Choose the *Perspective mode* from the transform pop-up menu on the Property Bar.

4. Drag a handle to create a three-dimensional appearance.

5. Double-click inside the selection to apply the transformation.

- After creating the mask, you can also display the perspective arrows by clicking three times inside the selection.

- When you drag one handle, the handle immediately counterclockwise to it moves in the opposite direction.

- Before applying the transformation, you can return the selection to its original appearance by pressing Esc or by double-clicking outside the selection. You can also cancel the transformation by holding down Control, clicking inside the selection, and choosing Reset.

- You can also apply the transformation by holding down Control, clicking inside the selection, and choosing Apply.

Adjusting the transparency of masks and selections

Think of a mask as a mesh that sits between your image and any effects that you want to apply. When you apply an effect, it must seep through the mesh before it reaches your image. You can adjust how tight or how loose the mesh is anywhere in the mask. The looser the mesh, the more editable a selection is; in other words, the more the changes affect the image. The tighter the weave of the mesh, the less the changes affect the image. Mask transparency

refers to the tightness of that mesh; it is controlled by the value of each pixel in the mask.

Understanding transparency

Suppose you have a picture of a flower and you want to apply a special effect to only one petal on that flower. If you want the edges of the petal to receive 100% of the effect and the inside of the petal to receive only 50%, you can adjust the transparency of the pixels in the selection.

All pixels have a transparency value between 0 (black) and 255 (white). The transparency value determines how much or how little the pixel can be changed. If a pixel has a transparency value of 0, none of the effects that you apply change the image. All pixels with a value of 0 are part of the mask. If a pixel has a transparency value of 255, all of the effects that you choose are fully applied. All pixels with a value of 255 are part of the selection. If the area of the mask that covers the inside of the petal has a transparency value of 127, the image in that area receives 50% of the effect. A solid fill color applied through the semitransparent mask results in a semitransparent fill.

Setting mask transparency

You adjust the transparency of a mask by painting the pixels with one or more shades of gray. When you use the Paint On Mask command, the grayscale representation of the mask is displayed in the Image Window. White represents the areas of the image you have selected that are 100% transparent; black represents the mask pixels that are 100% opaque.

You apply the paint by clicking a paint tool, choosing a shade from the on-screen Color Palette, and brushing over the pixels in the mask. The darker the shade, the less the color or effects that you apply later change the image. You can use the Fill tool to adjust the transparency of the entire mask by applying a uniform, fountain, texture, or bitmap fill. All tools are available to edit a mask in Paint On Mask mode. You can even paste an image into the mask; the image's grayscale values change the transparency of pixels in the mask and cause the level of protection of the mask vary from one place to another. If you choose another color from the on-screen Color Palette, it is applied to the mask in its corresponding shade of gray.

When you return to the image by disabling the Paint On Mask command, the changes that you've made to the mask might not be readily apparent. The mask marquee only excludes pixels within its boundary if the transparency of those pixels goes below a certain level. For example, if you paint a square of light gray in the middle of the selection while in Paint On Mask mode and then return to the image, the mask marquee doesn't visibly change. A change is apparent only when you apply a color or special effect; you can then see that only a percentage of the effect has penetrated the image where the

square was painted. You can view the various transparency levels in the mask by applying the mask overlay.

Editing the transparency of a mask or selection

You can use the Paint tool, the Fill tool, Interactive Fill tool, and Clone tool to edit the transparency of a mask or selection. In fact, any effect that you can apply to a grayscale image can also be applied when you edit the transparency of a mask.

To adjust the transparency of a mask or selection

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on your image.

3. Choose Mask, Paint On Mask.

4. Choose a color from the on-screen Color Palette.

5. Click a paint tool.

6. Brush over the white area of the image to change the shade of the pixels.

7. Choose Mask, Paint On Mask.

   If a check mark does not appear beside the command name, the Paint On Mask mode is disabled. If a check mark appears beside the command name, the command is enabled.

- You can open the on-screen Color Palette by choosing Window, Color Palette, and choosing a color palette.

  When you adjust the transparency of a mask or selection, a grayscale representation of the mask is displayed in the Image Window. The area that you selected on your image is white and the protected area is black. The darker the shade, the more opaque the pixels become when painted.

- You can adjust the size and shape of the brush on the Property Bar or on the Tool Settings Palette for the active brush tool.

- You can paint the black areas of the mask to make those areas somewhat transparent.

- You can also enable or disable the Paint On Mask mode by clicking the Paint On Mask button on the Standard toolbar.

Adjusting the edges of a selection

When you use one of the mask tools to select an area on your image, the edges of the selection are outlined by a mask marquee. The mask marquee marks the boundary between the selected areas on your image and the masked or protected areas. You can't see the marquee when you apply the mask overlay or when you enable the Paint On Mask mode.

Selecting circular, diagonal, or other irregular shapes on your image can sometimes cause the edges of the selection to appear jagged. You can use the feathering and smoothing features to soften the transition between the selected and protected areas on your image. You can also change the edges of a selection by applying color to the mask marquee.

Feathering

Feathering can be applied to the edges of a selection during or after its creation. It is particularly useful if you have edited the contents of the selection but not the surrounding pixels and would prefer to make the transition between the two areas less noticeable. For example, suppose that you want to brighten a few flower bushes in a photograph. Feathering lets you brighten the flower bushes gradually so that you can't tell that the image was edited. You can also use feathering to blend a selection that you have pasted onto your image with the background.

Smoothing

Smoothing lets you round off the sharp angles in a selection and results in a more fluid selection shape. If you use a color-sensitive mask to select a complex area on your document, you may want to smooth the sharp angles in the selection.

Applying color

You can also edit the edges of a selection by applying color to the mask marquee using a brush or effect tool. Depending on the effect you want to achieve, you can either emphasize or minimize the boundary between the selected areas and the protected ones.

Feathering the edges of a selection

Feathering changes the transparency of the pixels on the edge of a selection. This means that any effect or command that is applied to the selection fades gradually as it approaches the masked area on the image. Pixels along the selection's edge with a grayscale value higher than the threshold are included in the selection; all other pixels are masked.

To feather the edges of a selection

1. Choose Mask, Shape, Feather.

2. Type a value in the Width box.

3. Choose a feathering direction from the Direction pop-up menu:

   - Inside — feathers toward the inside of the selection's edge and appears to blend the background into the selection

   - Outside — feathers toward the outside of the selection's edge and blends the selection so that it appears to overlap the background

   - Middle — places an equal number of feathered pixels on the inside and outside of the selection's edge

   - Average — samples all of the pixels in the area you specified in the Width box and assigns an average color value to each

4. Choose an edge type from the Edges pop-up menu.

- The feathering direction determines where the feathering is located relative to the mask marquee.

- If you choose Average direction in step 3, the Edges pop-up menu is not available.

- You can see the effect of feathering by enabling the Paint On Mask mode and viewing the image in grayscale. Notice how the feathered part is displayed in various shades of gray that are progressively darker as you approach the mask, which is displayed in black.

Removing feathering from a selection's edge

You can remove the feathering from the edge of a selection by setting threshold values. The threshold determines where a new, sharp edge is created along the feathered edge. Feathering is removed by changing the grayscale value of the pixels on either side of the feathered edge to 0 (black) or 255 (white). Black areas are masked and white areas are selected.

To remove feathering from a selection's edge

1. Choose Mask, Shape, Threshold.

2. Type a value between 0 and 255 in the Level box.

Smoothing the edges of a selection

When you use a complex, color-sensitive mask to select an area on your image, the selection often has sharp bends and turns. You can smooth the edges of your selection by toning down the contrast between pixels on the edge of a selection. When you smooth the edge of a selection, masked areas that are completely surrounded by the selection might be removed.

To smooth the edges of a selection

1. Choose Mask, Shape, Smooth.

2. Type a value in the Radius box.

• The value in the Radius box determines the intensity of the smoothing effect.

Applying color or an effect along the edge of a selection

You can apply color or a special effect along the edge of a selection to clearly identify or blend the boundary between selected or editable areas on your image and those areas that are protected by a mask. If you have applied a brush stroke along a mask but want to enhance its effect, you can repeat the stroke.

To apply color or an effect along the selection

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on the image.

3. Click one of the following:

   • *Paint tool*

   • *Effect tool*

   • *Image Sprayer tool*

   • *Eraser tool*

   • *Color Replacer tool*

4. Set the tool's attributes on the Property Bar.

5. Choose Edit, Stroke, Stroke Mask.

6. Choose one of the following positions for the border of color:

   • Middle Of Mask Border — centers the stroke on the selection's edge

- Inside Of Mask — places the stroke inside the selection's edge
- Outside Of Mask — places the stroke outside the selection's edge

- You can also set the tool's attributes on the Tool Settings Palette.

To reapply color or an effect along the selection

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on your image.

3. Click one of the following tools:
   - Paint tool
   - Effect tool
   - Image Sprayer tool
   - Eraser tool
   - Color Replacer tool

4. Choose Edit, Stroke, Repeat Stroke.

5. Choose a brush stroke from the Stroke pop-up menu.

6. Type a value in the Repeat box.

7. Click the *Repeat Stroke On Mask button.*

- The value that you type in the Repeat box determines the number of times the stroke is repeated along the mask marquee.

- You can customize the stroke that is repeated along the mask marquee by setting scale, angle, and color values in the Repeat Stroke dialog box. For more information about repeating brush strokes, see "Repeating and modifying brush strokes" on page 150.

Expanding and reducing a selection

You can use the mask modes and sizing commands to increase or decrease the shape of a selection on your image.

Mask modes

The Normal, Additive, Subtractive, and XOR mask modes let you create, expand, or reduce selections on an image. You can access these modes by choosing Mask, Mode, and choosing an option from the submenu. You can also choose a mask tool and click one of the mask mode buttons on the Property Bar. If you are creating a color-sensitive mask using the Color Mask dialog box, you can access the mask mode buttons directly in the Color Mask dialog box.

Mask mode	Description
▣	The Normal mode lets you select a single area on your image. It is the default mode.
⊞	The Additive mode lets you select two or more areas on your image. You can also use this mode to expand existing selections.
⊟	The Subtractive mode lets you remove selected areas from your image.
▢	The XOR mode lets you select two or more areas on your image. If two selections overlap, the overlapping regions are included in the mask.

After you change mask modes, the new mode remains active until you change modes again. You can switch between mask modes using keyboard shortcuts. Holding down Command before selecting an area on your image with a mask tool invokes the Additive mode, holding down Shift invokes the Subtractive mode, and holding down Command + Shift invokes the XOR mode.

Expand or reduce a selection using the four mask modes; Normal, Additive, Subtractive, and XOR.
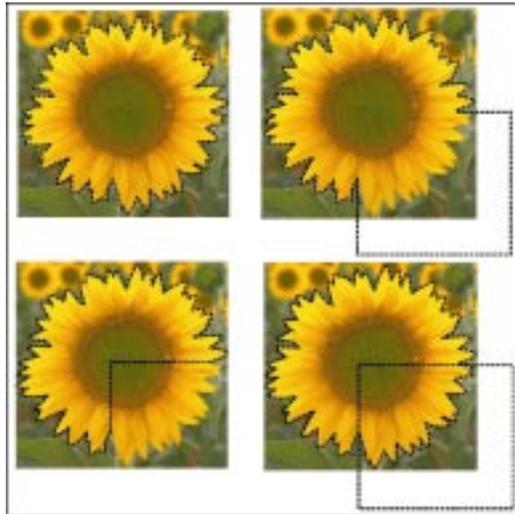
After you select a mask mode, you can use the Command and Option keys to constrain your selection to a specific shape. For example, if you begin selecting an area using the Rectangle Mask tool and then hold down Command while completing the selection, the area you select is a square. If you hold down Option, the area you select is a rectangle that is drawn from the center. And if you hold down Command + Option, the area you select is a square that is drawn from the center.

Selecting areas on an image

If you have trouble selecting the area that you want to edit, make sure that you are using the correct mask mode on your image. For example, if you select an area on an image using the Rectangle Mask tool, but the editing effect that you choose is applied to areas outside the rectangle, you are probably using the Rectangle Mask tool in the Subtractive mode.

Shaping a selection

The following commands let you expand or reduce selections in an image and can be accessed by choosing Mask, Shape:

Command	Description
Border	Lets you select a border-shaped area on your image by creating two mask marquees. These marquees have the same shape and share the same center point but are separated by a specific number of pixels.
Remove Holes	Selects any masked areas that are completely enclosed by a selection
Smooth	Lets you round off any sharp angles on the edge of a selection
Expand	Enlarges a selection by adding a specific number of pixels to its edge
Reduce	Shrinks a selection by removing a specific number of pixels from its edge

Using tools in Paint On Mask mode

Before you expand or reduce a selection, switch to the Paint On Mask mode to display the mask in grayscale. You can edit the mask in Paint On Mask mode in the same way that you edit other grayscale images. Adding black to the selection decreases its shape because black pixels mask the image. Adding white to the selection increases its shape because white pixels are editable. Adding gray to the mask increases the selection by changing the degree of transparency of pixels already included in the selection. Other ways of reducing a selection include erasing selected areas using the Eraser tool or expanding a selection by increasing the transparency of pixels using the Effect tool.

When you edit a selection in Paint On Mask mode, you are not editing the active image; instead, you are editing the selection that you've made on that

image using a mask. This means that when you use the mask tools to select an area in Paint On Mask mode, you are actually creating a mask on a mask.

Adding areas to a selection

You can add to the shape of a selection using any of the mask tools except the Mask Transform tool. Use the Additive mode to add new areas to an existing selection. Use the XOR mode to add new areas while excluding regions that overlap within the original selection.

Selecting an area on an image using the Additive mode (2) and XOR mode (3) shown with mask overlay applied.
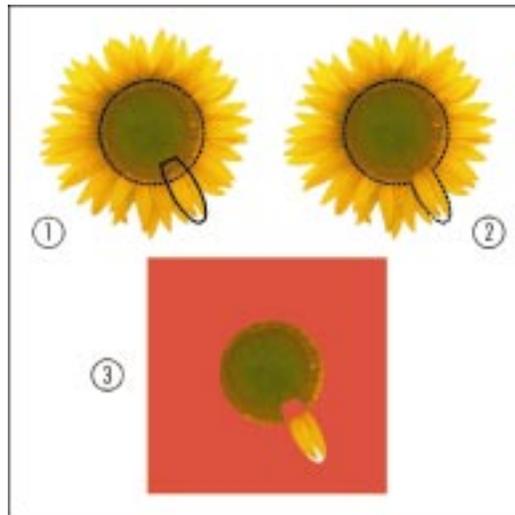
To add areas to a selection

1. Choose Mask, Mode, Additive.

2. Open the Mask Tools flyout and click a mask tool.

3. Select an area on the image.

To add areas to a selection but exclude overlapping regions

1. Choose Mask, Mode, XOR.

2. Open the Mask Tools flyout and click a mask tool.

3. Select an area on the image that overlaps with the original selection.

Removing holes from a selection

When you use the Lasso Mask tool, the Magic Wand Mask tool, or the Color Mask command to select areas on your image, you often end up with masked or protected regions that are completely surrounded by the selection. You can remove these "holes" to make them part of the selection.

To remove holes from a selection

• Choose Mask, Shape, Remove Holes.

Expanding or reducing a selection by a specific number of pixels

You can resize the area that you've selected on an image by expanding or reducing the selection by a specific number of pixels. The mask marquee moves inward or outward by the number of pixels that you specify.

To expand a selection by a specific number of pixels

1. Choose Mask, Shape, Expand.

2. Type a value in the Width box.

To reduce a selection by a specific number of pixels

1. Choose Mask, Shape, Reduce.

2. Type a value in the Width box.

Adding adjacent pixels of similar color to a selection

The Grow command uses the current color tolerance to add adjacent pixels of similar color to a selection.

To add adjacent pixels of similar color to a selection

• Choose Mask, Shape, Grow.

- The selection expands according to the new tolerance value. The next time that you apply the Grow command, you will not have to change the tolerance value again.

- The selection expands until it reaches pixels that are dissimilar in color to those located along the edge of the original selection.

- You can adjust the tolerance value that the Grow command applies by clicking the Magic Wand Mask tool and setting new tolerance values on the Property Bar or on the Tool Settings Palette.

To expand the selection further

1. Open the Mask Tools flyout and click the *Magic Wand Mask tool*.

2. On the Property Bar, click one of the following color tolerance mode buttons:

    - Normal — determines the color tolerance based on color similarity

    - HSB — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

3. On the Property Bar, type a tolerance value in the box(es) beside the tolerance mode buttons. If you choose Normal, one box is displayed; if you choose HSB, three boxes are displayed.

    Higher tolerance values mean that more colors are masked or protected.

4. Choose Mask, Shape, Grow.

5. Adjust the tolerance mode and apply the Grow command until you are satisfied with the shape of the selection.

- If you have enabled the Mask Visible check box on the Tool Settings Palette for the Magic Wand Mask tool, adjacent pixels of a similar color are selected on all visible objects in the image.

- You can also add adjacent pixels of similar color to a selection by clicking the Grow button on the Property Bar.

Adding all pixels of similar color to a selection

The Similar command uses the current color tolerance to expand a selection throughout the image — even if the image pixels are not adjacent to one another.

To add all pixels of similar color to a selection

- Choose Mask, Shape, Similar.

- All pixels that lie within the new tolerance setting are selected. Corel PHOTO-PAINT selects areas throughout the image that contain colors similar to those located along the edge of the original selection.

- To adjust the tolerance value that the Similar command applies, choose the Magic Wand Mask tool and set new values on the Property Bar.

To add more colors to the selection

1. Open the Mask Tools flyout and click the *Magic Wand Mask tool.*

2. On the Property Bar, click one of the following color tolerance mode buttons:

   - Normal — determines the color tolerance based on color similarity

   - HSB — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

3. On the Property Bar, type a tolerance value in the box(es) beside the tolerance mode buttons. If you choose Normal, one box is displayed; if you choose HSB, three boxes are displayed.

   Higher tolerance values mean that more colors are masked or protected.

4. Choose Mask, Shape, Similar.

- If you have enabled the Mask Visible check box on the Tool Settings Palette for the Magic Wand Mask tool, pixels of a similar color are selected on all visible objects in the image.

- You can also add pixels of similar color to a selection by clicking the Similar button on the Property Bar.

Removing selected areas

You can remove areas from a selection using any of the mask tools except the Mask Transform tool.
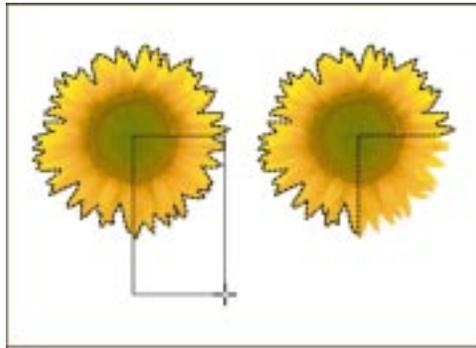
To remove selected areas

1. Choose Mask, Mode, Subtractive.

2. Open the Mask Tools flyout and click a mask tool.

3. Select an area on your image.

- Overlapping areas are removed from the selection. These areas are now masked.

- If you are using the Magic Wand Mask tool, click a pixel that represents the color you want to remove from the selection.

Creating a border-shaped selection

The Border command converts the existing mask marquee into two marquees that have the same shape and share the same center but that are separated by a specific number of pixels. Use a border-shaped selection to frame parts of an image with a color, a texture, or a special effect.

To create a border-shaped selection

1. Choose Mask, Mode, Normal.

2. Open the Mask Tools flyout and click a mask tool.

3. Select an area on your image.

4. Choose Mask, Shape, Border.

5. Type a value in the Width box.

6. Choose an edge type from the Edges pop-up menu.

- A soft edge produces a more gradual blend with the background image than does a hard edge.

- The border's width is determined by adding the value that you type in the Width box to both sides of the original marquee.

Expanding or reducing a selection using tools

You can use most Corel PHOTO-PAINT tools to expand or reduce a selection using a grayscale representation of its pixels. These tools include the Paint, Effect, Clone, Eraser, Color Replacer, Image Sprayer, and shape tools.

Any tool that is used to add white to the grayscale representation of the image increases the selection; any tool used to add black decreases the selection. Adding gray expands the selection if painted on black areas and changes the transparency of pixels already in the selection if painted on white areas.

To expand a selection using tools

1. Choose Mask, Paint On Mask.

2. Click one of the following tools:

- *Paint tool*
- *Effect tool*
- *Clone tool*
- *Eraser tool*
- *Color Replacer tool*
- *Image Sprayer tool*
- *Shape tools*

3. Adjust the tool's attributes on the Property Bar.

4. Paint on the image to expand or reduce the selection.

5. Choose Mask, Paint On Mask to return to the image.

- If you select the Paint tool or a shape tool, the paint and fill colors that you choose are converted to their grayscale equivalents.

- You can also adjust a tool's attributes on the Tool Settings Palette.

Saving masks and selections

Although mask channels are saved with images in formats that support mask information (e.g., the Corel PHOTO-PAINT file format), mask information is lost if you save an image to a different file format without first saving the mask. Corel PHOTO-PAINT lets you save your masks separately from the images that you used to create them. Saving a mask lets you remove it from the Image Window so that you can create another mask without losing the original one. When you save a mask to disk, you can use it again on any image.

You can also save the selected regions of a masked image as bitmaps. After you save a selection, you can use the irregularly shaped bitmap in illustration or page layout applications, or in other Corel PHOTO-PAINT files.

Saving and loading a mask

Corel PHOTO-PAINT saves masks as grayscale images. Once the mask is saved, you can load it into any image file. If the mask was created in another image that has different dimensions from the new image, the mask is stretched or compressed to accommodate the new image size.

To save a mask as a separate file

1. Choose Mask, Save, Save To Disk.

2. Locate the folder where you want to save the mask.

3. Choose a file format from the Format pop-up menu.

4. Specify a filename, and click Save.

To load a saved mask

1. Choose Mask, Load, Load From Disk.

2. Locate the folder where the mask is stored.

3. Choose the file format of the mask from the Format pop-up menu.

4. Choose the filename, and click Open.

•   You can enable the Preview check box when loading a mask to see a thumbnail representation of the mask.

Saving selected areas on your image

If you want to create a nonrectangular bitmap for use in an illustration or page layout application, you can save only those pixels that are selected on an image.

To save selected areas on your image

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on your image.

3. Choose File, Export, Export to File.

4. Locate the folder where you want to save the file.

5. Choose Encapsulated PostScript file format from the Format pop-up menu.

6. Specify a filename, and click Save.

7. Click OK.

8. In the EPS Export dialog box, enable the Save check box.

9. Enable the Image Enclosed By Mask button.

- If the image contains floating objects, Corel PHOTO-PAINT prompts you to merge them with the background before opening the EPS Export dialog box. For more information about objects, see "Working with text and objects" on page 189.

- You can enable the Crop Image To Mask/Path When Saving button in the EPS Export dialog box to permanently remove the masked areas from the image.

Creating an object from a selection

You can use the Cut, Copy, and Paste commands to create an object from a selection.

To create an object from a selection

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on your image.

3. Do one of the following:
   - Choose Edit, Cut to remove the selection from the current image and copy it to the Clipboard.
   - Choose Edit, Copy to copy the selection to the Clipboard.

4. Do one of the following:
   - Choose Edit, Paste, As New Document to paste the object into a new document.
   - Choose Edit, Paste, As New Object to paste the object into the active image.

Managing multiple masks

If you are editing complex images, it is sometimes convenient to access multiple masks at once so that you can switch between them. Although only one mask can be displayed on an image at a time, you can store your masks in mask channels for later use. After it is saved in a mask channel, a mask can be loaded and reused within the same image repeatedly. This lets you switch from one mask to another without having to recreate the mask each time.

When you save a mask in a mask channel, it remains active on the image and is listed as the current mask on the Channels Palette. If you select a different area on your image and alter the shape of the mask, the channel is not affected by the changes. You can save as many masks as you want on the Channels Palette.

If you save a mask in a channel, it is available for use at any time on the active image; however, if you open a new image, the mask is no longer available. To save masks so that they can be applied to any image at any time, you can save them to disk. For more information about saving masks, see "Saving masks and selections" on page 116.

When you save an image in Corel PHOTO-PAINT format, all mask channel information is saved with it. If you save an image in a different file format, the channels are lost when the image is closed. If you want to save an image in a format that does not support mask channel information, save the mask to disk.

Using mask channels

You can display any combination of color channels on the image with a mask channel. You can use the Channels Palette to access both the color and mask channels. If you view the mask channel independently of all color channels in Paint On Mask mode, the mask is displayed as a grayscale image. If you display the mask channel along with a color channel, the mask is displayed as an overlay with varying degrees of opacity.

You can edit a mask channel in the same way that you edit any other mask or selection. A mask channel becomes editable when you enable the Eye icon on the Channels Palette.

Creating a mask channel

You can create mask channels for an image and set their properties including channel name, color, opacity, and fill color.

To create a mask channel

1. Choose Window, Palettes, Channels.

2. Click the flyout arrow, and choose New Channel.

3. In the Channel Properties dialog box, type a name for the channel in the Name box.

4. In the Color section, do one of the following:

   • Click the color picker and choose a color.

   • Click the color picker and click Other to choose a color or create a custom color.

5. Type a value in the Opacity box to set the transparency of the color.

6. Enable one of the following buttons:

   • Fill Black — creates a white marquee on a black background

   • Fill White — creates a black marquee on a white background

- If you want the mask overlay to appear inverted on your image, enable the Invert Overlay check box in the Channel Properties dialog box.

To create a mask channel from the current mask

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on your image.

3. Choose Window, Palettes, Channels.

4. Click the *Save Mask to New Channel button.*

- You can adjust the channel properties for a mask you have created by double-clicking the mask channel name in the Channels Palette. After you specify the fill color when creating the channel, you cannot adjust it later on. For more information about changing channel properties, see "Editing a mask channel" on page 121.

Saving masks in channels

Create a mask channel when you want to store the current mask for use in the same image later on. The mask channel is saved with the image if you use a file format that supports mask information, such as the Corel PHOTO-PAINT format.

To save a mask in a channel

1. Open the Mask Tools flyout and click a mask tool.

2. Select an area on the image.

3. Choose Mask, Save, Save As Channel.

4. Type the name of the mask channel in the As box.

- If you create a color-sensitive mask in the Color Mask dialog box, you can save it as a mask channel by opening the Color Mask dialog box (Mask menu) and choosing Mask To Channel in the flyout menu. For more information about creating color-sensitive masks, see "Using masks to select colors" on page 71.

Displaying or hiding a mask channel

You can display an image's mask channels individually or with any combination of color channels by enabling the Eye icon in the Channels Palette. If you display a mask channel alone in the Image Window, it is represented as a grayscale image. If you display a mask channel with one or all of the color channels, it is represented as a tinted overlay. The areas that you've selected on your image are transparent in the overlay.

To display a mask channel

1. Choose Window, Palettes, Channels.

2. Enable the *Eye icon* that is associated with the mask channel you want to display.

To hide a mask channel

1. Choose Window, Palettes, Channels.

2. Disable the Eye icon that is associated with the mask channel you want to hide.

- A mask channel that is editable or active cannot be hidden. You must first choose another channel to be editable or active, then hide the mask channel. Active channels are displayed with a red outline on the Channels Palette.

Editing a mask channel

You can change the name, color and opacity of a mask channel. You can also apply all of the editing features that you apply to masks while working in Paint On Mask mode.

To edit a mask channel

1. Choose Window, Palettes, Channels.

2. Do one of the following:

   - Double-click a mask channel on the Channels Palette, and change its name, color, or opacity in the Channel Properties dialog box.

   - Click a mask channel on the Channels Palette, and use any tools and commands to edit the channel in the Image window.

- The channel's thumbnail is automatically updated on the Channels Palette.

Combining masks and mask channels

You can combine the current mask with a mask channel to expand the selected area on your image. The area that you expand is defined by the grayscale values (between 0 and 255) of the mask channel.

To combine masks and mask channels

1. Choose Window, Palettes, Channels.

2. Choose the mask channel to which you want to add a mask.

3. Open the Mask Tools flyout and click a mask tool.

4. Select an area on the image.

5. On the Channels Palette, do one of the following:
   - Click the Save Mask To New Channel button
   - Click the Save to Current Channel button

Reapplying a mask that is saved in a channel

Before you can use a mask that you've saved in a mask channel, you must reapply it to the active image.

To reapply a mask that is saved in a channel

1. Choose Window, Palettes, Channels.

2. Choose a mask channel from the Channels Palette.

3. Click Mask, Mode and choose one of the following:
   - Normal — replaces the current selection with the mask in the selected mask channel
   - Additive — adds the selection defined in the mask channel to the current selection
   - Subtractive — removes the selection in the mask channel from the current selection
   - XOR — adds the selection defined in the mask channel to the current selection. Overlapping selections are masked.

4. Click the *Channel To Mask button* on the Channels Palette.

Saving and opening a mask channel

Save a mask channel to disk when you want to use the mask information that it contains with other images or in future Corel PHOTO-PAINT sessions. You can also save a mask channel to disk when you are saving the image in a file format that does not support mask channel information.

To save a mask channel to disk

1. Choose Window, Palettes, Channels.
2. Choose a mask channel from the Channels Palette.
3. Click the flyout arrow at the top of the Channels Palette, and choose Save As.
4. Locate the folder where you want to save the channel.
5. Choose a file format from the Format pop-up menu.
6. Specify a filename, and click Save.

To open a mask channel saved to disk

1. Choose Window, Palettes, Channels.
2. Click flyout arrow at the top of the Channels Palette, and choose Open.
3. Locate the folder where the file is stored.
4. Choose the filename, and click Open.

- If you load a mask that was created in another image using different dimensions, the mask is automatically stretched or compressed to cover the entire active image; however, the mask's aspect ratio might be modified.

- You can enable the Preview check box when opening a mask channel to preview the channel file.

Moving and deleting mask channels

By default, mask channels appear in the order that you create them; however, you can reorder the channels in the Channels list. If you have many mask channels in a single image, you may want to save the ones you are not using to disk, and then delete them from the Channels list. You can always load a mask that you've saved to disk when needed.

To move a mask channel

- Drag the mask channel to a new position on the Channels Palette.

To delete a mask channel

1. Choose Window, Palettes, Channels.
2. Choose a mask channel from the Channels list.
3. Click the *Delete Current Channel button.*

PAINTING, FILLING, AND EDITING IMAGES

4

Whether you are painting simple images or editing complex designs, Corel PHOTO-PAINT provides the brushes, paints, and tools you need to accomplish the task. You can choose a paintbrush, blend colors, and paint images using a variety of tools and effects. For more information about choosing colors for your painting, filling, and editing operations, see "Working with color" on page 317.

Choosing paint brushes and merge modes

Before you can create and edit images in Corel PHOTO-PAINT, you must choose the paintbrush and merge mode that produce the effect you want. You can choose any of the preset brushes that are supplied with Corel PHOTO-PAINT, or you can create custom brushes using the controls on the Property Bar for any of the brush tools. Most brushes behave alike and are used in the same way — you choose a nib, specify a paint color, and click and drag to paint your image. However, the purpose and function of each brush differs, allowing you to create exciting, new effects with every stroke. After you choose a paintbrush, you can choose a paint color and merge mode. Merge modes specify how the current paint color blends with the colors of the image you are creating or editing. When you merge colors, you blend a source color with a base color to produce a result color.

Painting images

You can create exciting images using the Corel PHOTO-PAINT painting tools and effects. Use the shape tools to create simple squares, rectangles, ellipses, polygons, or lines or use the paint tools to draw with water colors, oil pastels, felt markers, chalk, crayons, and pencils. You can duplicate your paint strokes using the Repeat Stroke dialog box or the clone tools; create symmetrical designs, twists, pods, and rings using brush symmetry and orbits; or spray paint an entire list of images using the Image Sprayer tool.

Filling images

You can fill the objects in your image with colors, textures, bitmap images, and designs. There are five types of fills you can use in Corel PHOTO-PAINT: uniform, fountain, bitmap, texture, and gradient. Uniform fills let you fill objects and images with solid colors. Fountain fills let you fill objects and images with colors that progress from one color to another in concentric square, conical, linear, rectangular, or radial patterns. Bitmap fills let you fill objects and images with bitmap images. Texture fills let you fill objects and images with mathematically generated images that have customizable attributes. Gradient fills let you fill objects and images with colors that fade according to the shape or type of area that you are filling.

Editing images

Once the basic components of an image are in place, you can fine-tune their colors, modify their objects, and add effects using the Corel PHOTO-PAINT image-editing tools. You can smudge, smear, or blend paint, dodge and burn images, saturate or desaturate objects, or adjust the hue of images to create professional results. If you make a mistake when editing images, you can undo operations and restore images to their original appearance using the undo tools.

Choosing a paintbrush and merge mode

Before you can create or edit images in Corel PHOTO-PAINT, you must choose a paintbrush and merge mode. The paintbrush you choose determines the appearance of the brush stroke on your image. You can choose one of the preset Corel PHOTO-PAINT brushes or create custom brushes by setting values on the Property Bar for the tool you're using. The merge mode you choose determines the color of the brush stroke on your image. Merge modes control the way the current paint color blends with the base color of the image. Merge modes are also called paint modes.

Creating custom brushes

Whether you choose a preset brush that is supplied with Corel PHOTO-PAINT or create a custom brush, you can adjust the brush's settings to produce different paint strokes. You can customize the brush type, change the texture, or modify the dab and stroke attributes.

Choosing nibs

You can change the appearance of a brush stroke on your image by adjusting the nib's size, shape, flatness, transparency, and edge behavior. Basic nib controls are available on the Property Bar for the brush tools; however, more advanced customization features are available on the Tool Settings Palette. You can also create a nib that is based on a selection in an image.

Adding texture to your brush strokes

You can customize the texture of a brush to create unique effects throughout the stroke, on the edge of the stroke, or both — in varying amounts. You can also control the bleed rate of the watercolors you use to paint your images. The brush texture controls are available on the Tool Settings Palette for all of the brush tools.

Adjusting dab and stroke attributes

When you set the attributes of a brush tool's dab or stroke, you can imitate various artistic styles. You can specify the number of dabs in the brush stroke, the layout of the dabs along the brush stroke, and the way that color is dispersed throughout the brush stroke. When using the Paint tool, the Effect tool, or the Clone tool, you can also customize the behavior of the brush strokes, as well as the smoothing, anti-aliasing, and fade-out rate.

Creating nibs

You can choose a preset nib for your brush or you can create a custom nib by setting values on the Tool Settings Palette. You can also use the mask tools to create a custom nib that is based on a selection in your image.

Zooming in on the image lets you see the different strokes that have been applied to the butterfly's wing.

To create a nib

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Click the *nib picker,* and choose a brush nib.

To customize a nib

1. Follow steps 1 to 3 from the previous procedure.

2. Type a value in the Size box to adjust the size of the nib.

3. Type a value between 0 and 99 in the Transparency box to adjust the transparency of the paint.

4. Type a value between 0 and 360 in the Rotate box to create a calligraphic effect.

5. Type a value between 0 and 99 in the Flatten box to change the shape of the nib.

6. Type a value between 0 and 100 in the Soft Edge box to cause the paint to fade along the edges of the nib.

To create a nib that is based on a mask

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Click a brush tool.

4. Choose Window, Palettes, Tool Settings.

5. Click the flyout arrow beside the nib shape icons, and choose Create From Contents Of Mask.

6. In the Create A Custom Brush dialog box, type a value in the Nib Size box.

Creating textured brushes

You can create textured brushes that let you simulate artistic effects by loading a preset texture or creating custom textures. You can adjust a brush's texture to customize the appearance of the paint strokes you apply to an image.

A texture has been added to the background color to create a spiderweb effect.

To load a preset brush texture

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Brush Texture from the pop-up menu at the top of the Tool Settings Palette.

4. Click the flyout arrow beside the texture thumbnail, and choose Load A Texture.

5. Locate the folder where the texture is stored.

6. Choose the filename, and click Open.

To create custom brush textures

1. Follow steps 1 to 3 from the previous procedure.

2. Type a value in the Brush Texture box to adjust the amount of texture applied to the brush stroke.

3. Type a value in the Edge Texture box to adjust the amount of texture applied to the edge of the brush stroke.

Adjusting the bleed rate

The Bleed and Sustain Color controls work together to regulate the application of color in a brush stroke. During the course of an extended stroke, a brush stroke with a bleed value runs out of paint and smears the background colors (as though you were painting with a wet brush). If a

Sustain Color value is specified, traces of the paint color remain throughout the brush stroke.

To adjust the bleed rate of a brush

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Brush Texture from the pop-up menu at the top of the Tool Settings Palette.

4. Type a value in the Bleed box to control the rate at which the paint color is applied throughout brush strokes.

5. Type a value in the Sustain Color box to retain traces of the paint color throughout extended brush strokes.

Adjusting dab attributes

You can customize the attributes of a brush stroke by specifying the number and spacing of the dabs in the stroke. You can also adjust the colors used to create the dabs in a brush stroke.

Brush dabs are created when you click a brush tool rapidly, without dragging it across the image. Here, brush dabs add color to the image background.

To adjust the number and spacing of dabs

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Dab from the pop-up menu at the top of the Tool Settings Palette.

4. Type a value in the Number Of Dabs box to specify the number of dabs in the brush stroke.

5. Type a value in the Spacing box to specify the amount of space that appears between dabs.

6. Type a value in the Spread box to specify the distance between dabs along the width of the brush stroke.

To adjust the dab color variation

1. Follow steps 1 to 3 from the previous procedure.

2. Move the Hue slider to adjust the hues used in the brush stroke.

3. Move the Saturation slider to adjust the saturation of the colors used in the brush stroke.

4. Move the Lightness slider to adjust the lightness of the brush stroke.

Adjusting stroke attributes

You can adjust the smoothness, fade-out rate, and color variation of a brush stroke to customize its appearance on your images. Smoothness creates a smooth, fluid brush stroke. The fade-out rate controls the way that paint fades as it approaches the edge of a brush stroke. Color variation specifies the colors that are used throughout the stroke. The brush stroke cycle begins with the paper color and ends with the color that you choose from the Cycle Color picker. The number of colors displayed in the cycle is controlled by the H Variance Speed slider.

To adjust the fade-out rate of a brush

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Stroke from the pop-up menu at the top of the Tool Settings Palette.

4. Type a value in the Smoothing box to specify the smoothness of the brush stroke.

5. Type a value in the Fade Out box to specify the rate at which colors fade in a brush stroke.

- You can enable the Anti-Aliasing check box to smooth the jagged edges of the brush strokes.

To adjust the stroke color variation in a brush stroke

1. Follow steps 1 to 3 from the previous procedure.

2. Click the Cycle Color picker, and choose a color for the second stroke in the cycle.

3. Move any of the following sliders:

   - H — adjusts the hues used in the brush stroke

   - S — adjusts the saturation of the colors used in the brush stroke

   - L — adjusts the lightness of the brush stroke

- You can enable the Longer Hue Direction check box to include all colors that fall between the current paint color and the cycle color in the brush stroke.

Saving custom brushes

After you customize a brush using the controls on the Tool Settings Palette, the brush can be saved for use with other images. Custom brushes are added to the Type pop-up menu on the Tool Settings Palette and to the Brush Type pop-up menu on the Property Bar. You can only save brushes for the Paint, Effect, and Clone tools.

To save a custom brush

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Customize the brush's attributes.

4. Click the Save Brush button at the bottom of the Tool Settings Palette.

5. In the Save Brush dialog box, type a name in the Save New Brush Type As box.

Choosing a merge mode

You can control the result that a paint or effect tool has on an image by merging the colors in different ways. When you merge colors, you are blending or combining a source color with a base color to produce a result color. The source color is the current paint color — the color you are applying to your image using a paint tool or effect. The base color is the color displayed on the original image — the color you are altering in some way.

The result color is the color that is produced after the color merge. Merge modes are also called paint modes in Corel PHOTO-PAINT.

Using the Normal merge mode

The Normal merge mode replaces the base color with the current paint color. This is the default merge mode.

To access the Normal merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Normal from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Normal merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Add merge mode

The Add merge mode adds the values of the current paint and base colors.

To access the Add merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Add from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Add merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Subtract merge mode

The Subtract merge mode adds the values of the current paint and base colors, and subtracts 255 from the result. Because this merge mode treats

the color channels as subtractive, the result color is never lighter than the original base color. For example, painting blue on white yields blue, and painting blue on black yields black.

To access the Subtract merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Subtract from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Subtract merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Difference merge mode

The Difference merge mode subtracts the current paint color value from the base color value and applies the absolute value of the result. If the value of the current paint color is 0, the base color does not change.

To access the Difference merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Difference from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Difference merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Multiply merge mode

The Multiply merge mode multiplies the values of the paint and base colors and divides the result by 255. Unless you paint on white, the final result is always darker than the original base color. Multiplying black with any paint

color produces black. Multiplying white with any paint color leaves the color unchanged.

To access the Multiply merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Multiply from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Multiply merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Divide merge mode

The Divide merge mode divides the base color value by the paint color value, and ensures that the result is less than, or equal to 255.

To access the Divide merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Divide from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Divide merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the If Lighter merge mode

The If Lighter merge mode replaces the base color with the current paint color when the current paint color is lighter than the base color. If the paint color is darker than the base color, the base color is not changed.

To access the If Lighter merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose If Lighter from the Paint Mode pop-up menu on the Property Bar.

- You can also access the If Lighter merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the If Darker merge mode

The If Darker merge mode applies the current paint color to the base color when the current paint color is darker than the base color. If the paint color is lighter than the base color, the base color is not changed.

To access the If Darker merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose If Darker from the Paint Mode pop-up menu on the Property Bar.

- You can also access the If Darker merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Texturize merge mode

The Texturize merge mode converts the current paint color to grayscale and multiplies the grayscale value by the base color value.

To access the Texturize merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

- Open the Shape Tools flyout, and click a shape tool.

2. Choose Texturize from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Texturize merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Color merge mode

The Color merge mode uses both the hue and saturation values of the current paint color and the lightness value of the base color to create a result.

To access the Color merge mode

1. Do one of the following:

- Open the Paint Tools flyout, and click a brush tool.
- Open the Fill Tools flyout, and click a fill tool.
- Open the Shape Tools flyout, and click a shape tool.

2. Choose Color from the Paint Mode pop-up menu on the Property Bar.

- This merge mode is the opposite of the Lightness merge mode.

- You can also access the Color merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Hue merge mode

The Hue merge mode uses the hue value of the current paint color and both the saturation and lightness values of the base color to create a result.

To access the Hue merge mode

1. Do one of the following:

- Open the Paint Tools flyout, and click a brush tool.
- Open the Fill Tools flyout, and click a fill tool.
- Open the Shape Tools flyout, and click a shape tool.

2. Choose Hue from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Hue merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Saturation merge mode

The Saturation merge mode uses the saturation value of the current paint color and both the lightness and hue values of the base color to create a result.

To access the Saturation merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Saturation from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Saturation merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Lightness merge mode

The Lightness merge mode uses the lightness value of the current paint color and both the hue and saturation values of the base color to create a result.

To access the Lightness merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Lightness from the Paint Mode pop-up menu on the Property Bar.

- This merge mode is the opposite of the Color merge mode.

Using the Invert merge mode

The Invert merge mode creates a result color using the current paint color's complimentary color. This merge mode inverts the value of the current paint color and applies the inverted value to the base color. If the value of the paint color is 127, the color does not change because this value lies in the center of the color wheel.

To access the Invert merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Invert from the Paint Mode pop-up menu on the Property Bar.

Using the Logical AND merge mode

The Logical AND merge mode converts the paint and base color values to binary numbers, and then applies the Boolean algebraic formula "AND" to them.

To access the Logical AND merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Logical AND from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Logical AND merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Logical OR merge mode

The Logical OR merge mode converts the paint and base color values to binary numbers, and then applies the Boolean algebraic formula "OR" to them.

To access the Logical OR merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Logical OR from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Logical OR merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Logical XOR merge mode

The Logical XOR merge mode converts the paint and base colors to binary numbers, and then applies the Boolean algebraic formula "XOR" to them.

To access the Logical XOR merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Logical XOR from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Logical XOR merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Behind merge mode

The Behind merge mode applies the current paint color to those areas of the image that are transparent. This creates an effect that is like looking through the clear, silver-free areas on a 35-mm negative.

To access the Behind merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Behind from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Behind merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Screen merge mode

The Screen merge mode inverts and multiplies the values of the paint and paper colors. The result color is always lighter than the original base color.

To access the Screen merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Screen from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Screen merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Overlay merge mode

The Overlay merge mode multiplies or screens the current paint color, according to the value of the base color.

To access the Overlay merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Overlay from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Overlay merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Soft Light merge mode

The Soft Light merge mode applies a soft, diffused light to the base color.

To access the Soft Light merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Soft Light from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Soft Light merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Hard Light merge mode

The Hard Light merge mode applies a hard, direct spotlight to the base color.

To access the Hard Light merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Hard Light from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Hard Light merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Color Dodge merge mode

The Color Dodge merge mode simulates the photographic technique called dodging, which lightens image areas by decreasing the exposure.

To access the Color Dodge merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Color Dodge from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Color Dodge merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Color Burn merge mode

The Color Burn merge mode simulates the photographic technique called burning, which darkens image areas by increasing the exposure.

To access the Color Burn merge mode

1. Do one of the following:

   - Open the Paint Tools flyout, and click a brush tool.

   - Open the Fill Tools flyout, and click a fill tool.

   - Open the Shape Tools flyout, and click a shape tool.

2. Choose Color Burn from the Paint Mode pop-up menu on the Property Bar.

- You can also access the Color Burn merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Red merge mode

The Red merge mode applies the current paint color to the red channel of an RGB image.

To access the Red merge mode

1. Do one of the following:
    - Open the Paint Tools flyout, and click a brush tool.
    - Open the Fill Tools flyout, and click a fill tool.
    - Open the Shape Tools flyout, and click a shape tool.
2. Choose Red from the Paint Mode pop-up menu on the Property Bar.

- The Red, Green, and Blue merge modes are only available when the active image is an RGB image.

- You can also access the Red merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Green merge mode

The Green merge mode applies the current paint color to the green channel of an RGB image.

To access the Green merge mode

1. Do one of the following:
    - Open the Paint Tools flyout, and click a brush tool.
    - Open the Fill Tools flyout, and click a fill tool.
    - Open the Shape Tools flyout, and click a shape tool.
2. Choose Green from the Paint Mode pop-up menu on the Property Bar.

- The Red, Green, and Blue merge modes are only available when the active image is an RGB image.

- You can also access the Green merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Blue merge mode

The Blue merge mode applies the current paint color to the blue channel of an RGB image.

To access the Blue merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Blue from the Paint Mode pop-up menu on the Property Bar.

- The Red, Green, and Blue merge modes are only available when the active image is an RGB image.

- You can also access the Blue merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Cyan merge mode

The Cyan merge mode applies the current paint color to the cyan channel of a CMYK image.

To access the Cyan merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Cyan from the Paint Mode pop-up menu on the Property Bar.

- The Cyan, Magenta, Yellow, and Black merge modes are only available when the active image is a CMYK image.

- You can also access the Cyan merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Magenta merge mode

The Magenta merge mode applies the current paint color to the magenta channel of a CMYK image.

To access the Magenta merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.
   - Open the Shape Tools flyout, and click a shape tool.
2. Choose Magenta from the Paint Mode pop-up menu on the Property Bar.

- The Cyan, Magenta, Yellow, and Black merge modes are only available when the active image is a CMYK image.

- You can also access the Magenta merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Yellow merge mode

The Yellow merge mode applies the current paint color to the yellow channel of a CMYK image.

To access the Yellow merge mode

1. Do one of the following:
   - Open the Paint Tools flyout, and click a brush tool.
   - Open the Fill Tools flyout, and click a fill tool.

- Open the Shape Tools flyout, and click a shape tool.

2. Choose Yellow from the Paint Mode pop-up menu on the Property Bar.

- The Cyan, Magenta, Yellow, and Black merge modes are only available when the active image is a CMYK image.

- You can also access the Yellow merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Using the Black merge mode

The Black merge mode applies the current paint color to the black channel of a CMYK image.

To access the Black merge mode

1. Do one of the following:

- Open the Paint Tools flyout, and click a brush tool.

- Open the Fill Tools flyout, and click a fill tool.

- Open the Shape Tools flyout, and click a shape tool.

2. Choose Black from the Paint Mode pop-up menu on the Property Bar.

- The Cyan, Magenta, Yellow, and Black merge modes are only available when the active image is a CMYK image.

- You can also access the Black merge mode on the Tool Settings Palette for the brush, fill, or shape tools.

Painting images

Painting is one of the most basic operations that you can perform in Corel PHOTO-PAINT. Whether you are creating simple images or complex designs, you can use the paint tools, brushes, and nibs to apply brush strokes. Use the more advanced paint tools to further enhance images by creating shapes and lines, cloning objects and images, spray painting image lists, and painting with abstract pods, twists, and curls, called orbits.

Applying brush strokes

Using the Corel PHOTO-PAINT brush tools, you can paint with water colors and oil pastels, draw with felt markers, chalk, crayons, pens, and pencils, and even spray paint images to create exciting effects. You can change the effect of a brush stroke on an image by customizing the size, shape, and transparency of the nib. You can also customize the brush texture and set the stroke and dab attributes. The brush tools can be accessed from the Paint Tools flyout and customized on the Property Bar or on the Tool Settings Palette for the active tool.

After you click a brush tool and apply strokes to an image, you can repeat, modify, and save the strokes. The Repeat Stroke dialog box lets you repeat the last stroke you applied to an image, modify previous strokes to create new effects, and save brush strokes for use with other images. You can also use the Repeat Stroke dialog box to paint along the border of a path or within the constraints of a mask.

Drawing shapes and lines

You can paint squares, rectangles, circles, ellipses, and polygons on your images using the shape tools. Shapes can be outlined or filled with color and can be rendered as separate objects or merged directly with the image background. You can also paint straight line segments on your images. When you create line segments using the Line tool, you can control the width of the line, the way that multiple line segments join together, and the transparency of the lines. All lines are colored with the current paint color. You can customize the attributes of the shape tools and the Line tool on the Property Bar or on the Tool Settings Palette for the active tool.

Cloning objects

Cloning lets you duplicate the objects in an image. Objects can be cloned within an image or can be copied to different images in Corel PHOTO-PAINT. There are five types of clone tools: Clone, Impressionism Clone, Pointillism Clone, Clone From Saved, and Clone From Fill. You can use these tools to repair damaged areas, to restore images to their previous appearance, to create artistic effects, or to copy fills from one location to another. The Clone tools can be accessed from the Paint Tools flyout and customized on the Property Bar or on the Tool Settings Palette for the active tool.

Spray painting images

You can create exciting artistic effects by spray painting your Corel PHOTO-PAINT images with full-color bitmaps. Enhance your landscape images by spray painting clouds across a bright-blue sky or foliage across a lawn background. You can also spray paint abstract designs to create the

appearance of graffiti. In fact, any bitmap image can be loaded directly into the Image Sprayer tool and spray painted on images. You can also create custom bitmap image lists for the Image Sprayer tool. The Image Sprayer tool can be accessed from the Paint Tools flyout and customized on the Property Bar or on the Tool Settings Palette.

Painting with orbits and symmetry

Painting with orbits lets you create twists, pods, rings, and other bizarre effects on your images. You can choose any of the preset orbits that are supplied with Corel PHOTO-PAINT or you can create custom orbits using the controls on the Tool Settings Palette for the Paint and Image Sprayer tools.

You can add symmetrical designs to your Corel PHOTO-PAINT images by painting in brush symmetry mode. The brush symmetry mode dramatically affects the operation of all the brush tools, allowing you to mirror complex strokes and create seemingly impossible effects. In brush symmetry mode, satellite brush nibs called points are added at various distances around the active brush tool and are controlled by a center point. You can specify the point around which the symmetry occurs by setting the location of the center point in your image. As you create brush strokes, the satellite points revolve around the center point and duplicate your strokes in symmetrical patterns. There are two brush symmetry modes: radial and mirror.

Applying a brush stroke

After you choose a brush tool and merge mode, you can apply a brush stroke to your image and begin painting. You can choose a paint color from the on-screen Color Palette or by double-clicking the Paint swatch on the Status Bar. For more information about choosing paint colors, see "Working with color" on page 317.

To apply a brush stroke

1. Click a brush tool.

2. Choose Window, Palettes, Tool Settings.

3. Customize the brush's attributes.

4. Choose a color swatch from the on-screen Color Palette.

5. Click and drag in the Image Window.

- You can apply brush strokes to individual objects in your image. The changes that you make become part of the last selected object unless you select or create another object before painting on the image. You can retain the object's original shape by enabling the Lock Transparency check box on the Objects Palette. For more information about objects, see "Working with text and objects" on page 189.

Repeating and modifying brush strokes

You can repeat and modify the brush strokes that you've already applied to your image. This makes it easy to duplicate or adjust intricate brush strokes. Before you repeat or modify brush strokes, you must save them in the Repeat Stroke dialog box. When you save brush strokes, they are saved with the list of preset brush strokes.

To save brush strokes

1. Open the Paint tools flyout, and click the *Paint tool*.
2. Click and drag in the Image Window.
3. Choose Edit, Stroke, Repeat Stroke.
4. Click the Stroke flyout button, and choose Add Last Tool Stroke.
5. Locate the folder where you want to save the stroke.
6. Specify a filename, and click Save.

To repeat brush strokes

1. Choose Edit, Stroke, Repeat Stroke.
2. Choose a stroke from the Stroke pop-up menu.
3. Click inside the Image Window.

To modify repeated brush strokes

1. Follow steps 1 and 2 from the previous procedure.
2. Type a value in any of the following boxes:
   - Scale % — changes the size of the repeated brush strokes
   - Scale Variation % — specifies the range of the random size variation between repeated brush strokes. The larger the value, the greater the size variation between repeated brush strokes.
   - Repeat — specifies the number of brush strokes that are repeated when you apply the stroke

- Angle — changes the angle of the repeated brush strokes
- Angle Variation — specifies the range of the random angle variation between repeated brush strokes
- Accumulate Angle — specifies the exact angle between each repeated brush stroke, starting with the angle value in the Angle box

3. Click the More button.

4. Enable one of the following buttons:
   - Use Color From Image — assigns an image color to each repeated brush stroke
   - Use Current Paint Color — assigns the current paint color to each repeated brush stroke

5. Move any of the following sliders:
   - Hue Variance — controls the variation in hue between successive, repeated brush strokes
   - Saturation Variance — controls the variation in saturation between successive, repeated brush strokes
   - Lightness Variance — controls the variation in lightness between successive, repeated brush strokes

6. Click inside the Image Window.

- You can type 100 in the Scale % box to duplicate the size of the original stroke.

Drawing shapes and lines

You can draw simple shapes and lines using any of the tools in the Shape Tools flyout. If you create the shape or line as an object, you can edit it independently of the background image. If you do not create the shape or line as an object, it instantly merges with the background and can no longer be edited independently.

To draw rectangles or ellipses

1. Open the Shape Tools flyout, and click one of the following tools:
   - Rectangle tool — creates square or rectangular shapes
   - Ellipse tool — creates circular or elliptical shapes

2. Click the Edit Fill button on the Property Bar.

3. Click one of the following fill buttons:

- Uniform Fill — applies a solid color to the area you are filling

- Fountain Fill — applies a range of colors in a concentric square, conical, linear, rectangular, or radial pattern to the area you are filling

- Bitmap Fill — applies a fill created from any bitmap image to the area you are filling

- Texture Fill — applies a mathematically generated image with customizable attributes to the area you are filling

4. Click OK.

5. Drag to draw the shape in the Image Window.

- Hold down Command while clicking and dragging to constrain the shape to a circle or square. Hold down Option while clicking and dragging to size the rectangle or ellipse from the center point.

- You can round the corners of a rectangle by typing a value in the Roundness box on the Property Bar.

To draw a polygon

1. Open the Shape tools flyout, and click the *Polygon tool*.

2. Click the Edit Fill button on the Property Bar.

3. Click one of the following fill buttons:

- Uniform Fill — applies a solid color to the area you are filling

- Fountain Fill — applies a range of colors in a concentric square, conical, linear, rectangular, or radial pattern to the area you are filling

- Bitmap Fill — applies a fill created from any bitmap image to the area you are filling

- Texture Fill — applies a mathematically generated image with customizable attributes to the area you are filling

4. Click OK.

5. Click once to set an anchor point, move the cursor, and click again.

6. Continue clicking and dragging until the polygon is complete.

7. Double-click to complete the polygon and apply the fill.

To draw straight lines

1. Open the Shape Tools flyout, and click the *Line tool*.

2. Choose a method of joining the segments from the Shape Joints pop-up menu on the Property Bar.

3. Click and drag to draw straight line segments in the Image Window.

- If you enable the Render To Object button on the Property Bar, the shapes you draw are individual objects.

- You can enable the Disable Fill button on the Property Bar for the shape tools to remove the fill from the shapes you draw with the active tool.

- You can type a value in the Transparency box on the Property Bar to adjust the transparency of a shape or line. High values increase the transparency; low values increase opacity.

- You can create paint-colored outlines around a shape by typing a value in the Width box on the Property Bar. If you click the Line tool, the value that you type in the Width box determines the width of the line.

Cloning images, objects, and fills

When you clone images, objects, or fills in Corel PHOTO-PAINT, the image, object, or fill is duplicated. You can add cloned items to another part of the active image or to another image entirely. You can also clone with impressionism or pointillism to create exciting designs on your images. If you make a mistake while cloning, you can undo the operation and return the image to its original appearance.

Cloning lets you repair dust and scratch damage or other imperfections that might appear on images that you scan into Corel PHOTO-PAINT.

To clone images or objects

1. Open the Paint Tools flyout, and click the *Clone tool*.

2. Choose Window, Palettes, Tool Settings.

3. Choose Clone from the pop-up menu at the top of the Tool Settings Palette.

4. Choose a brush type from the Type pop-up menu.

5. Choose Dab from the pop-up menu at the top of the Tool Settings Palette, and do one of the following:

   • Enable the Merged Source check box to clone the entire image.

   • Disable the Merged Source check box to clone the active object.

6. Click the image to set a source point for the cloning operation.

7. Click and drag in the Image Window.

• You must disable the Cumulative check box before you can enable the Merged Source check box on the Tool Settings Palette.

To clone with impressionism

1. Follow steps 1 to 3 from the previous procedure.

2. Click the flyout arrow beside the clone tool list, and click the *Impressionism Clone tool*.

3. Follow steps 6 and 7 from the previous procedure.

To clone with pointillism

1. Follow steps 1 to 3 from the "To clone images or objects" procedure.

2. Click the flyout arrow beside the clone tool list, and click the *Pointillism Clone tool*.

3. Follow steps 6 and 7 from the "To clone images or objects" procedure.

To clone a fill

1. Follow steps 1 to 3 from the "To clone images or objects" procedure.

2. Click the flyout arrow beside the clone tool list, and click the *Clone From Fill tool*.

3. Click and drag in the Image Window.

To undo cloning

1. Follow steps 1 to 3 from the "To clone images or objects" procedure.

2. Click the flyout arrow beside the clone tool list, and click the *Clone From Saved tool*.

3. Click and drag across the image area that you want to restore.

- If you are creating an image from scratch, you must save it before using the Clone From Saved tool.

- You can hold down Option, and click to reset the clone source point.

Spray painting images

You can use the Image Sprayer tool to spray paint your images with full-color bitmaps. The image sequence that you load in the Image Sprayer tool is contained in a special file, called an image list. You can change the size, tiling, and order of the images in the sequence, or you can create new image lists from any object.

You can create an image list using a single object in an image.

After you load the object in the Image Sprayer tool, you can spray paint it across the original image.

To spray paint images

1. Open the Paint tools flyout, and click the *Image Sprayer tool*.
2. Click and drag in the Image Window.

To load an image list

1. Open the Paint Tools flyout, and click the Image Sprayer tool.
2. Click the *Load Image Sprayer List button* on the Property Bar.
3. Locate the folder where the image list is stored.
4. Choose the filename, and click Open.

To customize the spraying sequence

1. Open the Paint Tools flyout, and click the Image Sprayer tool.
2. Type a value in the Size box on the Property Bar to adjust the nib width in pixels.
3. Type a value in the Transparency box on the Property Bar to adjust the transparency of the images.
4. Type a value in the Number Of Dabs box on the Property Bar to adjust the number of images sprayed with each dab of the brush.
5. Type a value in the Spacing box on the Property Bar to adjust the distance between dabs along the length of a brush stroke.
6. Type a value in the Spread box on the Property Bar to adjust the distance between dabs along the width of the brush stroke.
7. Type a value in the Fade Out box on the Property Bar to adjust the length of the brush stroke before it fades out.
8. Choose an image sequence from the Image Choice pop-up menu on the Property Bar to adjust the order of the images in the image list.

- You can also customize the spraying sequence on the Tool Settings Palette for the Image Sprayer tool.

- If you want to set precise values for the image sequence, you can type values in the Image Choice From and To boxes on the Property Bar. These values let you choose the images that are included in the spraying sequence.

Creating and editing image lists

An image list is a file that contains the images you load into the Image Sprayer tool. You can use any of the preset image lists supplied with Corel PHOTO-PAINT, or you can create a custom image list from selected objects. You can also create an image list from a whole image. After you create an image list, you can edit it in the same way that you edit any other Corel PHOTO-PAINT image.

To create an image list using objects

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select the objects you want to include in the image list.

3. Open the Paint Tools flyout, and click the *Image Sprayer tool*.

4. Choose Window, Palettes, Tool Settings.

5. Click the flyout arrow, and choose Save Objects As Image List.

6. Specify a filename, and click Save.

- You can also save objects in an image list by clicking the Save Object(s) As Image List button on the Property Bar.

- If you create an image list using a single object, you can create a directional image list. Directional image lists spray images according to the direction that your mouse moves across the background.

To create an image list using images

1. Open the Paint Tools flyout, and click the Image Sprayer tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Image Sprayer from the pop-up menu at the top of the Tool Settings Palette.

4. Click the flyout arrow, and choose Save Document As Image List.

5. Type a value in the Images Per Row box to specify the number of horizontal tiles in the image list.

6. Type a value in the Images Per Column box to specify the number of vertical tiles in the image list.

7. Type a value in the Number Of Images box to specify the number of images to include in the list.

8. Click OK.

9. Specify a filename, and click Save.

To edit an image list

1. Open the Paint Tools flyout, and click the Image Sprayer tool.

2. Choose Window, Palettes, Tool Settings.

3. Choose Image Sprayer from the pop-up menu at the top of the Tool Settings Palette.

4. Click the flyout arrow, and choose Edit Current Image List.

5. Edit the image list images.

6. Choose File, Save As.

7. Do one of the following:

   • Click Save to overwrite the last version of the image list.

   • Locate the folder where you want to save the file, specify a filename, and click Save to save the edited image list as a new file.

• After you edit an image list, you must reload it into the Image Sprayer tool to activate the changes.

Painting with orbits

You can create spectacular and bizarre paint effects by painting your image with orbits. Orbits let you paint using creative new designs, such as twists, pods, and rings. You can use the preset orbits that are provided with Corel PHOTO-PAINT, or you can create custom orbits for your images.
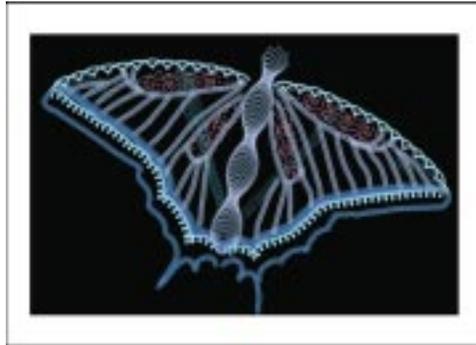
To paint with orbits

1. Open the Paint Tools flyout, and click the *Paint tool*.

2. Choose Window, Palettes, Tool Settings.

3. Choose Orbits from the pop-up menu at the top of the Tool Settings Palette.

4. Enable the Enable Orbits check box.

5. Choose an orbit from the Presets pop-up menu.

6. Click and drag in the Image Window.

To customize orbits

1. Follow steps 1 to 4 from the previous procedure.

2. Type a value in the Number Of Orbits box to specify the number of orbits that are applied to each brush stroke.

3. Type a value in the Radius box to specify the distance between the center of the brush stroke and the orbits.

4. Type a value in the Rotation Speed box to specify the speed at which the orbits rotate around the brush stroke.

5. Type a value in the Grow Speed box to specify the speed at which the orbits move toward the center of the brush stroke.

6. Move the Grow Amount slider to specify the distance that the orbits move when rotating toward the center of the brush stroke.

7. Enable the Include Center Point ? check box to display the point around which the orbits rotate.

- You can also set the distance that the orbits move when rotating toward the center of the brush stroke by typing a value in the Grow Amount box.

- You can also paint with orbits using the Image Sprayer tool.

Painting with symmetry

You can paint symmetrical designs on your images by changing the operating mode of the brush tools. There are two modes for symmetrical painting: radial and mirror. When you paint in radial mode, satellite points move toward the brush's center point as you paint. When you paint in mirror mode, an identical stroke is created on the horizontal and vertical plane of the image.

You can create symmetrical images by launching the symmetrical painting mode. When you paint with symmetry in mirror mode, your brush strokes are mirrored on the image.
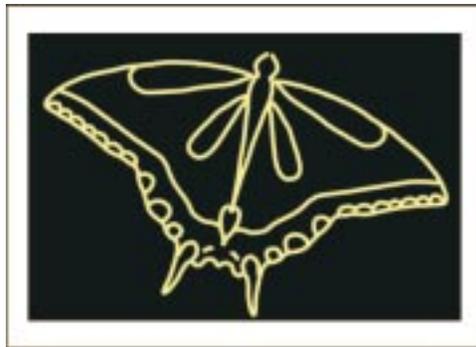
To paint with symmetry

1. Click a brush tool.

2. Choose Window, Palettes, Symmetry.

3. Enable one of the following brush symmetry buttons:

   - None — disables the brush symmetry mode

   - Radial — adds satellite points at intervals along the radius of the brush nib. Type the number of satellite points that you want to apply to a brush stroke in the # Points box. The satellite points move toward the brush's center point as you create brush strokes in the Image Window. The relationship between the tool and points is determined by the position of the center point.

- Mirror — produces an identical stroke on the horizontal and vertical plane of the image. Enable the Horizontally check box to create a second brush stroke to the right or left of the original brush stroke. Enable the Vertically check box to create a second brush stroke above or below the original brush stroke. The location of the second mirrored stroke is determined by the position of the center point.

4. Enable the Set Center check box, and click the image to position the center point of the brush stroke.

- You can click the Reset button to clear the settings on the Brush Symmetry Palette.

- You can also set the center point of the brush stroke by typing values in the Left and Top boxes on the Brush Symmetry Palette.

- You can choose a unit of measurement for the center point from the Units pop-up menu.

Filling images with color

After you create the basic outline for an image in Corel PHOTO-PAINT, you can fill the objects and background with color. You can also change the appearance of existing images by filling objects with different colors. Corel PHOTO-PAINT lets you fill images with solid colors, color progressions, bitmaps, and textures. You can also adjust the transparency of the fill colors by applying a gradient fill. You can use fills to create backgrounds, apply textures, and create many other artistic effects.

Uniform fills

Uniform fills let you fill images with solid colors. You can create custom colors for a uniform fill by choosing a color model, fixed palette, mixer, or custom palette from the Uniform Fill dialog box. You can apply uniform fills to an entire image, or you can use the Fill tool or a mask tool to fill part of an image.

Fountain fills

Fountain fills let you fill images with colors that progress from one to another in linear, radial, conical, square, or rectangular patterns. You can create simple two-color fills that progress from one defined color to a second defined color or you can create custom fountain fills that progress through multiple colors. You can apply fountain fills to an entire image, or you can use the Fill tool or a mask tool to fill part of an image.

Bitmap fills

Bitmap fills let you fill images with a series of bitmap images. Any bitmap image can be used as a bitmap fill; however, images that tile seamlessly to create a contiguous pattern (e.g., coins and bricks) work best.

You can fill images using the sample bitmaps that are supplied with Corel PHOTO-PAINT, or you can create custom bitmap images for the fill. Use the Create Fill From Selection command to save selected areas on an image as custom bitmap fills. Custom bitmap fills are added to the Bitmap Fill picker in the Bitmap Fill dialog box and can be deleted at any time. After you load a bitmap image in the Bitmap Fill dialog box, you can customize its appearance by sizing, skewing, rotating, scaling, and offsetting the tiles. You can apply bitmap fills to an entire image, or you can use the Fill tool or a mask tool to fill part of an image.

Texture fills

Texture fills let you fill images with textured patterns. You can fill images using the sample textures that are supplied with Corel PHOTO-PAINT, or you can create custom textures for the fill. Sample textures include water, minerals, clouds, and three-dimensional patterns. You can apply texture fills to an entire image, or you can use the Fill tool or a mask tool to fill part of an image.

Gradient fills

Gradient fills let you fill images with gradual color blends. A gradient fill creates smooth transitions between colors by gradually changing their transparency as it progresses from the start color to the end color. You can apply preset gradient fills or create custom fills using the Interactive Fill tool.

Working with uniform fills

Uniform fills are even-colored, solid fills that can be applied to an entire image or to part of an image using the fill or mask tools. You can choose the colors used in a uniform fill by loading color models, color matching systems, and color mixers in the Uniform Fill dialog box. For more information about choosing colors, see "Working with color" on page 317.

Applying uniform fills

Uniform fills let you fill an entire image or part of an image with a solid color. When filling part of an image, you can use the Fill tool or a mask tool to define the image area.

Uniform fills let you fill images, objects, or backgrounds with solid colors.
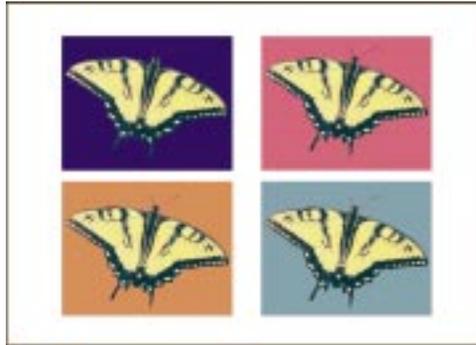
To apply a uniform fill to an entire image

1. Choose Edit, Fill.

2. Click the *Uniform Fill button*.

3. Click the Edit button.

4. In the Uniform Fill dialog box, choose a color model from the Model pop-up menu.

5. Choose a color from the color selection area.

To apply a uniform fill to part of an image

1. Open the Fill Tools flyout, and click the *Fill tool*.

2. Click the Edit Fill button on the Property Bar.

3. Click the Uniform Fill button.

4. Click the Edit button.

5. In the Uniform Fill dialog box, choose a color model from the Model pop-up menu.

6. Choose a color from the color selection area.

7. Click OK to close all dialog boxes.

8. On the Property Bar, do one of the following to define a range for the fill:

   • Click the Normal button, and type a value in the Color Similarity box.

   • Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes.

9. Click the area you want to fill in the Image Window.

- You can select an object before applying a uniform fill to apply the fill to that object only.

Loading the color model and palette for a uniform fill

You can change the color of a uniform fill by loading a color model or color palette in the Uniform Fill dialog box. You can load fixed color palettes, color mixers, or custom color palettes. For more information about choosing color models and palettes, see "Working with color" on page 317.

To load a color model or mixer

1. Open the Fill tools flyout, and click the *Fill tool.*

2. Click the Edit Fill button on the Property Bar.

3. Click the *Uniform fill button.*

4. Click the Edit button.

5. Click one of the following buttons:

   - *Color Viewers* — lets you choose colors from different representations of the visual spectrum

   - *Mixers* — lets you mix and choose colors from the mixing area

6. Choose a color model from the Model pop-up menu.

7. Choose a color from the color selection area.

To load a palette

1. Follow steps 1 to 4 from the previous procedure.

2. Click one of the following buttons:

   - *Custom Palettes* — loads a custom color palette

   - *Fixed Palettes* — loads a fixed color palette

3. Choose a palette from the Type pop-up menu.

4. Click the color scroll bar to change the range of colors displayed in the color selection area.

5. Choose the color swatch you want to use.

Working with fountain fills

You can add color to an image by filling the image or its components with fountain fills. Fountain fills are color progressions that follow linear, radial,

conical, square, or rectangular paths. When you create fountain fills, you choose the shape and the start and end colors. The object or image is filled with colors that cascade from the start color to the end color, according to the shape of the fountain fill.

There are two types of fountain fills: two-colored and custom. Two-colored fountain fills blend directly from the start color to the end color. Custom fountain fills contain a series of colors that cascade from the start color to the end color. You can customize fountain fills by adjusting the center point around which the colors progress or by changing the angle of the fill in the Fountain Fill dialog box. You can also change the size of the blended area that lies between the solid colors in the fountain fill. If you create a custom fountain fill that you want to apply to other images, you can save the fill and its attributes. When you save a custom fountain fill, the name of the fill is added to the end of the Presets list in the Fountain Fill dialog box. You can also delete fills from this list when you no longer need them. The Fountain Fill dialog box can be accessed from the Edit Fill And Transparency dialog box, from the Edit Fill button on the Property Bar, or from the Edit button on the Tool Settings Palette for the Fill tool.

Applying fountain fills

Fountain fills let you fill an entire image or part of an image, with colors that progress from one color to another in a linear, radial, conical, square, or rectangular pattern. When filling part of an image, you can use the Fill tool or a mask tool to define the image area.

Fountain fills let you add colors that progress from one shade to another in specific patterns.
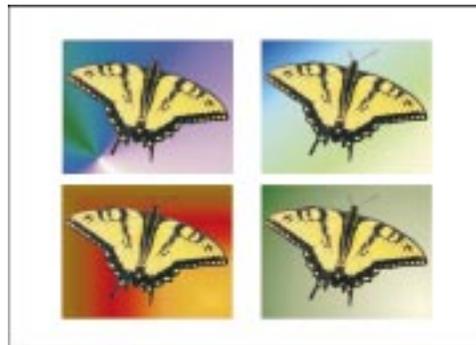
To apply a fountain fill to an entire image

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

- Choose a fountain fill type from the Type pop-up menu.
- Choose a preset fountain fill from the Presets pop-up menu.

To apply a fountain fill to part of an image

1. Open the Fill Tools flyout, and click the *Fill tool*.
2. Click the Edit Fill button on the Property Bar.
3. Click the Fountain Fill button.
4. Click the Edit button.
5. Do one of the following:
   - Choose a fountain fill type from the Type pop-up menu.
   - Choose a preset fountain fill from the Presets pop-up menu.
6. Click OK to close all dialog boxes.
7. On the Property Bar, do one of the following to define the color tolerance for the fountain fill:
   - Click the Normal button, and type a value between 0 and 100 in the Color Similarity box.
   - Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes.
8. Click the area you want to fill in the Image Window.

- You can select an object before applying a fountain fill to apply the fill to that object only.

Applying a two-color fountain fill

A two-color fountain fill is a fill that flows smoothly from one color to another. The fill can flow in a straight line across the image (linear), in concentric circles from the center of the image (conical), in rays from the center of the image (radial), in rectangles from the center of the image (rectangular), or in concentric squares from a center point.

To apply a two-color fountain fill

1. Choose Edit, Fill.
2. Click the *Fountain Fill button*.
3. Click the Edit button.

4. Do one of the following:

   - Choose a fountain fill type from the Type pop-up menu.

   - Choose a preset fountain fill from the Presets pop-up menu.

5. Enable the Two Color button in the Color Blend section.

6. Click the From color picker, and choose the color that starts the fountain fill's color progression.

7. Click the To color picker, and choose the color that ends the fountain fill's color progression.

8. Move the Mid-point slider to set the midpoint between the two colors.

9. Click one of the following buttons:

   - *Direct Color Path* — determines the intermediate fill colors according to hue and saturation changes along a straight line, beginning at the start color and continuing across the color wheel to the end color

   - *Counterclockwise Color Path* — blends colors along a counterclockwise path around the color wheel

   - *Clockwise Color Path* — blends colors along a clockwise path around the color wheel

- You can also set a midpoint by typing a value in the Mid-point box.

Creating custom fountain fills

You can customize fountain fills by adding intermediate colors using the Preview Ribbon. You can also specify where you want the intermediate colors to appear. You can add up to 99 intermediate colors to your fountain fill.

To create custom fountain fills

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

   - Choose a fountain fill type from the Type pop-up menu.

   - Choose a preset fountain fill from the Presets pop-up menu.

5. Enable the Custom button in the Color Blend section.

6. Double-click the Preview Ribbon to add a color marker.

7. Choose a color swatch from the palette to assign it to the color marker.

8. Type a value in the Position box to specify the placement of the color marker above the Preview Ribbon.

9. Repeat steps 6 to 8 until you are satisfied with the fill color.

- You can change the color assigned to a selected color marker by clicking the Current color picker and choosing a color swatch. To assign more precise colors to a color marker, you can click the Current color picker and choose the Other button to open the Fountain Fill color dialog box.

- You can preview the fountain fill in the preview window at the top of the Fountain Fill dialog box.

- You can also drag a color marker to a new position above the Preview Ribbon.

Adjusting the center point

Most fountain fills radiate from a point that appears in the center of the fill. Radial and square fountain fills progress in a series of concentric circles or squares from the center of the object outward; conical fountain fills progress in a circular path from the center of the object outward; and rectangular fills progress in a series of rectangles from the center of the object outward. Negative values shift the center to the left, positive values shift the center to the right.

To change the center point

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

    - Choose a fountain fill type from the Type pop-up menu.

    - Choose a preset fountain fill from the Presets pop-up menu.

5. Type a value in the Horizontal box.

6. Type a value in the Vertical box.

• Linear fountain fills have no center point.

• You can position the center point of a fountain fill dynamically by clicking and dragging in the preview window at the top of the Fountain Fill dialog box.

Adjusting the angle

You can adjust the angle of linear and conical fountain fills. Changing the angle affects the slant of the fountain fill. Positive values rotate the fill counterclockwise; negative values rotate the fill clockwise.

To adjust the angle

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

   • Choose a fountain fill type from the Type pop-up menu.

   • Choose a preset fountain fill from the Presets pop-up menu.

5. Type a value in the Angle box.

• You can adjust the angle of linear fountain fills by clicking and dragging in the preview window at the top of the Fountain Fill dialog box.

Adjusting the number of fountain steps

When you create a fountain fill, the space required to blend the colors is divided into fountain steps. Fountain steps control the appearance of a fountain fill on screen and on the printed page. Increasing the number of steps used to display the fountain fill creates a smooth color blend but slows down the printing process. Decreasing the number of steps used to display the fountain fill creates a coarse transition from one color to another but speeds up the printing process.

To adjust the number of fountain steps

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

   - Choose a fountain fill type from the Type pop-up menu.

   - Choose a preset fountain fill from the Presets pop-up menu.

5. Type a value in the Steps box.

Adjusting the edge pad

The edge pad value determines how long the beginning and ending colors remain as solid colors before they start blending with the next color in the fountain fill. A higher value allows the colors to remain solid longer before blending and causes the colors to spread more quickly. A lower value results in a smooth transformation between the two colors. You cannot adjust the edge pad for conical fountain fills.

To adjust the edge pad

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

   - Choose a fountain fill type from the Type pop-up menu.

   - Choose a preset fountain fill from the Presets pop-up menu.

5. Type a value in the Edge Pad box.

Saving custom fountain fills

After you create a custom fountain fill, you can save it for use with other images. When you save a custom fountain fill, the fill name is added to the Presets pop-up menu in the Fountain Fill dialog box.

To save a custom fountain fill

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Do one of the following:

   - Choose a fountain fill type from the Type pop-up menu.

- Choose a preset fountain fill from the Presets pop-up menu.

5. Set the fountain fill's attributes in the Fountain Fill dialog box.

6. Type a name in the Presets pop-up menu.

7. Click the *Add Fill button.*

Deleting fountain fills

You can delete fountain fills and their attributes by removing the fill name from the Presets pop-up menu in the Fountain Fill dialog box.

To delete fountain fills

1. Choose Edit, Fill.

2. Click the *Fountain Fill button.*

3. Click the Edit button.

4. Choose a fountain fill from the Presets pop-up menu.

5. Click the *Delete Fill button.*

6. Click OK.

Working with bitmap fills

Bitmap fills are bitmap images that are used to fill other images or image areas. You can tile small bitmap images across the area you want to fill, or you can fill an image area with a single, large bitmap. Because bitmap images vary in their complexity, it is best to use less complex bitmaps for filling images. Complex bitmaps are memory-intensive and slow to display. The complexity of a bitmap is determined by its size, resolution, and bit-depth.

You can fill images with the preset bitmap fills that are supplied with Corel PHOTO-PAINT, or you can create custom bitmap fills. Custom bitmap fills can be created by saving selections as individual bitmaps or by importing existing bitmaps. After you load a bitmap into the Bitmap Fill dialog box, you can customize its appearance by changing its width and height and adjusting its horizontal or vertical offset. You can also customize bitmap fills by rotating or skewing the bitmap image. When you load a bitmap into the Bitmap Fill dialog box, the name of the bitmap image is added to the end of the Bitmap Fill picker. You can delete fills from the Bitmap Fill picker when you no longer need them.

Applying bitmap fills

Bitmap fills let you fill an entire image or part of an image with a bitmap image. You can use any bitmap image as a fill; however, patterned images

such as stones, coins, or bricks create a seamless, contiguous pattern. When filling part of an image, you can use the Fill tool or a mask tool to define the image area.

To select and apply a bitmap fill over the entire image

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button*.

3. Click the Edit button.

4. Click the Bitmap Fill picker, and choose a fill.

To select and apply a bitmap fill over part of an image

1. Open the Fill Tools flyout, and click the *Fill tool*.

2. Click the Edit Fill button on the Property Bar.

3. Click the Bitmap Fill button.

4. Click the Edit button.

5. Click the Bitmap Fill picker, and choose a fill.

6. Click OK to close all dialog boxes.

7. On the Property Bar, do one of the following to define a range for the fill:

   • Click the Normal button, and type a value in the Color Similarity box.

   • Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes.

8. In the Image Window, click the area you want to fill.

- You can select an object before applying a bitmap fill to apply the fill to that object only.

Importing bitmap fills

You can import any bitmap image for use as a bitmap fill. After you import the image, you can customize its appearance by setting attributes in the Bitmap Fill dialog box.

To import a Bitmap fill

1. Choose Edit, Fill.
2. Click the *Bitmap Fill button.*
3. Click the Edit button.
4. Click the Load button.
5. Locate the folder where the bitmap file is stored.
6. Choose the filename, and click Open.

- Thumbnail images of the bitmap files that you import are added to the end of the Bitmap Fill picker.

Creating bitmap fills from selections

You can create bitmap fills that are based on selected areas on your image. Thumbnail images of the bitmap files you create are added to the end of the Bitmap Fill picker in the Bitmap Fill dialog box.

To create a bitmap fill from a selection

1. Open the Mask Tools flyout, and click a mask tool.
2. Select an area on your image.
3. Choose Edit, Create Fill From Selection.
4. Locate the folder where you want to save the file.
5. Specify a filename, and click Save.

Changing the size of a bitmap fill

You can change the size of a bitmap fill by adjusting the tile size of the image. You can also fill images with a single, large bitmap image.

To change the size of a bitmap fill

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button.*

3. Click the Edit button.

4. Click the Bitmap Fill picker, and choose a fill.

5. Disable the Use Original Size check box in the Size section.

6. Type a value in the Width box in the Size section.

7. Type a value in the Height box in the Size section.

To fill an image with a single, large bitmap

1. Follow steps 1 to 4 from the previous procedure.

2. Enable the Scale Bitmap To Fit check box in the Size section.

To fill an image using the default tile size

1. Follow steps 1 to 4 from the "To change the size of a bitmap fill" procedure.

2. Enable the Use Original Size check box in the Size section.

• The Width and Height boxes are available only when the Use Original Size and Scale Bitmap To Fit check boxes are disabled.

• You can enable the Maintain Aspect button to specify identical values in the Width and Height boxes. Identical values preserve the width-to-height ratio of the bitmap image.

Setting the offset of a bitmap fill

You can customize the placement of a bitmap fill by setting its horizontal and vertical offset. When you adjust the horizontal or vertical offset of the first tile in a bitmap fill, your adjustments affect the rest of the tiles in the fill. Offset is determined relative to the top left corner of the fill area. You can also offset rows or columns of tiles in a bitmap fill. The row and column offset values determine the distance that alternating rows or columns of tiles in the bitmap fill are shifted.

To set the offset of a bitmap fill

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button*.

3. Click the Edit button.

4. Type a value in the X box in the Origin section.

   Increasing the value in the X box shifts the bitmap fill to the right; decreasing the value shifts the bitmap fill to the left.

5. Type a value in the Y box in the Origin section.

   Increasing the value in the Y box shifts the bitmap fill down; decreasing the value shifts the bitmap fill up.

• If you set the horizontal and vertical offset to zero, the first tile is flush with the left side of the fill area.

To set the row and column offset of a bitmap fill

1. Follow steps 1 to 3 from the previous procedure.

2. Enable one of the following buttons:

   • Row — sets the offset for alternating rows of tiles

   • Column — sets the offset for alternating columns of tiles

3. Type a value in the % Of Tile Side box.

• You can preview the changes you make to the offset in the preview window at the top of the Bitmap Fill dialog box.

Rotating a bitmap fill

You can rotate a bitmap fill to customize its appearance on your image. The rotation value determines the angle at which the bitmap tile is rotated.

To rotate a bitmap fill

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button*.

3. Click the Edit button.

4. Type a value in the Rotate box in the Transform section.

Skewing a bitmap fill

You can skew a bitmap fill to customize its appearance on your image. The skew value determines the angle at which the bitmap tile is slanted.

To skew a bitmap fill

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button.*

3. Click the Edit button.

4. Type a value in the Skew box in the Transform section.

Deleting a bitmap fill

You can delete a bitmap fill and its attributes by removing the fill's thumbnail from the Bitmap Fill picker in the Bitmap Fill dialog box.

To delete a bitmap fill

1. Choose Edit, Fill.

2. Click the *Bitmap Fill button.*

3. Click the Edit button.

4. Click the Bitmap Fill picker, and choose a fill.

5. Click the Delete button.

Working with texture fills

Texture fills are random, mathematically generated fills that create three-dimensional patterns on the image or image area that you are filling. Texture fills let you fill an image area with a single, textured image. You can use the preset texture fills that are supplied with Corel PHOTO-PAINT, or you can create custom textures to fill an image area. Preset texture fills include water, minerals, clouds, and other patterns.

If you create a custom texture fill that you want to apply to other images, you can save the fill and its attributes. When you save a custom texture fill, the name of the fill is added to a texture library in the Texture Fill dialog box. You can delete texture fills from a texture library when you no longer need them. Texture fills significantly increase the size of your file and the time it takes to print.

Applying a texture fill

Texture fills are mathematically generated images with customizable attributes. You can apply a texture fill to an entire image or to part of an image by defining a mask selection, or by setting a color tolerance on the Property Bar for the Fill tool.

To apply a texture fill to your whole image

1. Choose Edit, Fill.
2. Click the *Texture Fill button.*
3. Click the Edit button.
4. Choose a texture library from the Texture Library pop-up menu.
5. Choose a texture from the Texture list.

To apply a texture fill to part of an image

1. Open the Fill Tools flyout, and click the *Fill tool.*
2. Click the Edit Fill button on the Property Bar.
3. Click the Texture Fill button.
4. Click the Edit button.
5. Choose a texture library from the Texture Library pop-up menu.
6. Choose a texture from the Texture list.
7. Click OK to close all dialog boxes.
8. On the Property Bar, do one of the following to define a range for the fill:
   - Click the Normal button, and type a value in the Color Similarity box.

- Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes.

9. Click the image to apply the fill.

- Because texture fills are scaled when applied to the image or image area, the final result may differ from the result displayed in the preview window at the top of the Texture Fill dialog box.

- You can select an object before applying a texture fill to apply the fill to that object only.

- To preview variations of the same texture fill, ensure that the Lock button beside the Texture # box in the Style Name section is disabled. Clicking the Preview button when Lock button is disabled randomly changes all unlocked parameters and displays the effect.

Creating a custom texture fill

You can create custom texture fills by modifying a preset texture. Experiment with the texture settings to control the softness, density, light, volume, and shade of a texture. You can also add ripples and adjust the brightness value of a texture and preview the effect.

Creating a custom texture fill

1. Choose Edit, Fill.
2. Click the *Texture Fill button*.
3. Click the Edit button.
4. Choose a texture library from the Texture Library pop-up menu.
5. Choose a texture from the Texture list.
6. Modify the texture settings in the Style Name section.

- To preview variations of the same texture fill, ensure that the Lock button beside the Texture # box in the Style Name section is disabled. Clicking the Preview button when the Lock button is disabled randomly changes all unlocked parameters and displays the effect.

Saving custom texture fills

After you create a custom texture fill, you can save it for use with other images later on. When you save a custom texture fill, the fill name is added to a texture library.

To save a custom texture fill

1. Choose Edit, Fill.

2. Click the *Texture Fill button*.

3. Click the Edit button.

4. Choose a texture library from the Texture Library pop-up menu.

5. Choose a texture from the Texture list.

6. Set the texture fill's attributes.

7. Click the *Add Fill button*.

8. In the Save Texture As dialog box, type a name in the Texture Name box.

9. Choose a texture library in which to store the texture from the Library Name list.

• You cannot save custom texture fills in the Styles library.

Deleting a texture fill

You can delete a texture fill and its attributes by removing the fill name from the texture library.

To delete a texture fill

1. Choose Edit, Fill.

2. Click the *Texture Fill button*.

3. Click the Edit button.

4. Choose a texture library from the Texture Library pop-up menu.

5. Choose a texture from the Texture list.

6. Click the *Delete Fill button*.

7. Click OK.

Working with gradient fills

Gradient fills let you create a gradual blend between the colors in the area that you want to fill. You can apply gradient fills to create a fill color that fades according to the type or shape of the image that you want to fill. Gradient fills are based on flat, linear, elliptical, radial, rectangular, square, conical, bitmap, or textured shapes. Gradient fills can be applied to an entire image or to part of an image using the Interactive Fill tool.

When you apply gradient fills to an image, a gradient arrow appears in the Image Window. The gradient arrow marks the transition from one color to another throughout the fill. Each color in the gradient fill is represented by a node on the gradient arrow. You can change the transparency of the colors in the gradient fill, or you can change the fill colors entirely. When you set a transparency value (expressed as a percent) for individual nodes on the gradient, the node transparency increases by that amount — over the gradient's overall transparency. After you apply a gradient fill to an image, you can adjust its size directly in the Image Window.

Because the bitmap and flat fills make global changes to an object, you cannot add nodes to customize their transparency values. If you create a flat gradient fill, the gradient arrow does not appear in the Image Window. Instead, the transparency is determined by the level of transparency you specify.

Applying a gradient fill

You can apply a gradient to an object so that the fill color fades according to a selected type or shape. The Interactive Fill tool lets you set the transparency and shape of the gradient, as well as its direction, start and end points, paint mode and style.

Gradient fills let you fade colors in an image or object. The first image in this frame displays a textured gradient fill.
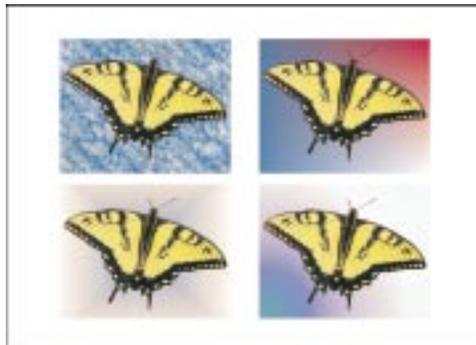
To apply a gradient fill

1. Open the Fill Tools flyout, and click the *Interactive Fill tool.*
2. Choose a gradient from the Type pop-up menu on the Property Bar.

3. Choose Custom from the Interactive Fill Style pop-up menu on the Property Bar.

4. Click and drag in the Image Window to create the gradient fill.

5. Click a node on the gradient arrow.

6. Move the Node Transparency slider on the Property Bar to set the transparency of the color gradient.

7. Repeat steps 5 and 6 to set transparency values for all nodes on the gradient arrow.

8. Click the Apply button on the Property Bar to apply the gradient fill.

• You can choose a preset gradient style from the Interactive Fill Style pop-up menu on the Property Bar.

• You can also access the gradient fill controls on the Tool Settings Palette for the Interactive Fill tool.

• You can drag the slider on the gradient arrow in the Image Window to move the halfway point for the transparency range.

Adding colors to a gradient fill

You can add colors to an existing gradient fill by dragging color swatches onto the gradient arrow. When you add nodes to the gradient arrow in the Image Window, the slider marking the halfway point in the range of transparency values disappears.

To add colors to a fill color gradient

1. Drag a color swatch from the on-screen Color Palette onto the gradient arrow in the Image Window.

2. Move the Node Transparency slider on the Property Bar to set a transparency value for the color of the new node.

3. Repeat steps 1 and 2 to add new nodes to the color gradient.

• You can also access the gradient fill controls on the Tool Settings Palette for the Interactive Fill tool.

Changing colors on a gradient fill

You can change the colors of an existing gradient fill by dragging color swatches onto the gradient arrow in the Image Window.

To change a color on the gradient fill

1. Drag a color swatch from the on-screen Color Palette onto a node on the gradient arrow.

2. Move the Node Transparency slider on the Property Bar to set a transparency value for the new color.

3. Repeat steps 1 and 2 to change colors at other points on the gradient fill.

- You can also edit the color of a node on a gradient fill by double-clicking a node and choosing a color from the Node Color dialog box.

Changing color transparency on a gradient fill

You can change the transparency of a node on the gradient arrow to adjust the color transparency of the entire fill.

To change color transparency on a gradient fill

1. Select a node.

2. Move the Node Transparency slider on the Property Bar to set a transparency value.

- You can change a node's transparency interactively by holding down Shift and dragging a color swatch from the on-screen Color Palette onto the node. Corel PHOTO-PAINT applies transparency according to the grayscale value of the color you choose.

Editing images

You can edit existing images to fine-tune colors and enhance subtle effects. You can use the Effect tools to smear, smudge, or blend paint, dodge and burn parts of an image, saturate or desaturate colors, change the image's hue values, or apply a tint to the image. You can apply the editing effects to an entire image or to part of an image using the mask tools. For more information about editing images, see "Retouching and refining images" on page 247.

If you make a mistake when creating or editing images in Corel PHOTO-PAINT, you can restore the affected image areas using the Undo tools. There are three types of undo tools: the Eraser tool, the Color Replacer tool, and the Local Undo tool. The Eraser tool replaces an area on your image with the current paper color. The Color Replacer tool replaces the current paint color with the current paper color. The Local Undo tool restores an image or image area to the way it looked before the last brush stroke was applied.

Smearing, smudging, and blending paint

The butterfly's colors have been smeared to extend beyond their original outlines.

You can smear, smudge, or blend the paint in an image. Smearing has the same effect as dragging your finger across wet paint. Smudging has the same effect as rubbing your finger across a pastel drawing. Blending softens the transition between colors or hard edges. You can smear, smudge, or blend the colors in an entire image or in part of an image.

To smear, smudge, or blend paint

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. Choose Window, Palettes, Tool Settings.

3. Choose Effects from the pop-up menu at the top of the Tool Settings Palette.

4. Click the flyout arrow beside the tools list, and click one of the following tools:

   • *Smear tool* — creates the same effect as dragging your finger across wet paint

   • *Smudge tool* — creates the same effect as rubbing your finger on pastels

   • *Blend tool* — softens the definition between colors or hard edges by blending adjoining colors

5. Choose a brush from the Type pop-up menu.

6. Choose Dab from the pop-up menu at the top of the Tool Settings Palette, and do one of the following:

- Enable the Merged Source check box to smear, smudge, or blend the paint in the entire image.

- Disable the Merged Source check box to smear, smudge, or blend the paint in the active object.

7. Click and drag across the areas that you want to smear, smudge, or blend.

- If the Cumulative check box is enabled, you must disable it before enabling the Merged Source check box.

Dodging and burning images

Dodge and burn are traditional photographic terms describing processes used to lighten and darken areas of an image. You can use the Corel PHOTO-PAINT Dodge and Burn tools to increase or decrease the amount of exposure given to a particular area of an image.

The butterfly's left wing has been burned; the right wing has been dodged.

To dodge images

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. On the Property Bar, click the Effect tool picker, and click the *Dodge/Burn tool*.

3. On the Property Bar, choose one of the following brushes from the Brush Type pop-up menu:

- Dodge Highlights — lightens the highlight areas

- Dodge Midtones — lightens the midtone areas

- Dodge Shadows — lightens the shadow areas

4. Click and drag across the areas you want to dodge.

To burn images

1. Follow steps 1 and 2 from the previous procedure.

2. On the Property Bar, choose one of the following brushes from the Brush Type pop-up menu:

   - Burn Highlights — darkens the highlight areas

   - Burn Midtones — darkens the midtone areas

   - Burn Shadows — darkens the shadow areas

3. Click and drag across the areas you want to burn.

Saturating or desaturating paint

You can saturate or desaturate the paint in specific areas of an image using the Sponge tool. Saturation affects the strength or purity of the paint color. Fully saturated colors contain no white and are vibrant, while fully desaturated colors are displayed as their grayscale equivalents. Positive values saturate; negative values desaturate.

Desaturating paint removes colors from image areas.

To saturate or desaturate paint

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. On the Property Bar, click the Effect tool picker, and click the *Sponge tool*.

3. Choose a brush from the Brush Type pop-up menu on the Property Bar.

4. Type a value in the Amount box on the Property Bar.

5. Click and drag across the areas you want to saturate or desaturate.

Adjusting image hue

You can adjust the image hue to modify the colors of the objects in an image. The Hue tool shifts all hues along the color wheel by the number of degrees that you specify. The Hue Replacer tool retains the brightness and saturation of the original colors, but replaces all hues with the current paint color.

Changing the image hue lets you shift all the colors in an image to create unusual effects.

To shift the hue of an image

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. Click the Effect tool picker, and click the *Hue tool* on the Property Bar.

3. Choose a brush from the Brush Type pop-up menu on the Property Bar.

4. Type a value in the Amount box on the Property Bar.

   This value determines how many degrees around the color wheel your hues will shift.

5. Click and drag across the areas you want to shift.

To change the image hue to the paint color

1. Open the Paint Tools flyout, and click the Effect tool.

2. Click the Effect tool picker, and click the *Hue Replacer tool* on the Property Bar.

3. Choose a brush from the Brush Type pop-up menu on the Property Bar.

4. Type a value in the Amount box on the Property Bar.

   This value determines the result color, based on how many degrees around the color wheel it is from the paint color. A higher value results in a more pronounced effect or shift in hue to the paint color.

5. Click and drag across the areas you want to change.

• The Hue and Hue Replacer tools are not available for Grayscale or Duotone images because Grayscale and Duotone images do not have a saturation component.

Applying a paint-colored tint to an image

You can adjust the appearance of an entire image or part of an image by tinting the paint colors. The Tint tool tints the paint colors using the current paint color.

To apply a paint-colored tint to an image

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. On the Property Bar, click the Effect tool picker, and click the *Tint tool*.

3. Choose a brush from the Brush Type pop-up menu on the Property Bar.

4. Type a value in the Amount box on the Property Bar.

5. Click and drag across the areas you want to tint.

Using the Undo tools

If you make a mistake while editing your images, you can use the Corel PHOTO-PAINT Undo tools to repair the damage. You can use the Local Undo tool to restore images to their previous appearance, the Eraser tool to reveal the object or image background underneath the image area, and the Color Replacer tool to replace your most recent paint strokes with the paper color.

To restore parts of an image

1. Open the Undo Tools flyout, and click the *Local Undo tool*.

2. Click and drag in the Image Window.

To replace areas with the paper color

1. Open the Undo Tools flyout, and click the *Eraser tool*.

2. Click and drag in the Image Window.

To replace paint with the paper color

1. Open the Undo Tools flyout, and click the *Color Replacer tool*.

2. On the Property Bar, do one of the following to define a range for the replacement:

- Click the Normal button, and type a value in the Color Similarity box.

- Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes.

3. Click and drag in the Image Window.

- You can erase color from objects in an image by selecting the object and then dragging across the image with the Eraser tool. If the Lock Transparency check box is disabled on the Objects Palette, the object's marquee changes to exclude the areas you are erasing.

- You can also undo painting operations using the Clone From Saved tool. For more information about cloning, see "Cloning images, objects, and fills" on page 153.
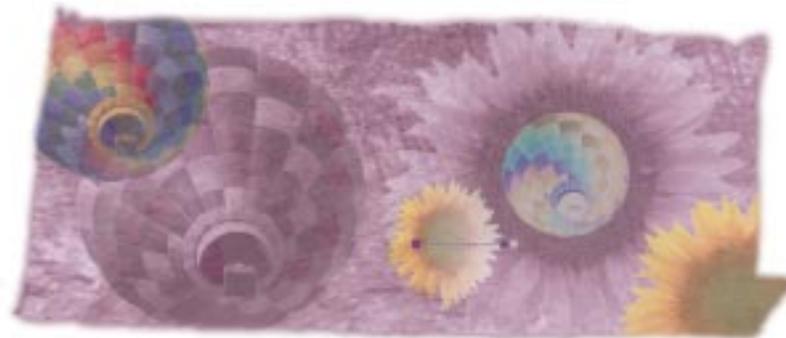
WORKING WITH TEXT AND OBJECTS

5

Objects are independent bitmaps that float above an image. You can move objects to different positions, color them, or edit them — all without changing the image underneath. Objects can be created with the shape tools, most paint tools, the Text tool, the image data that you paste from the Clipboard, a mask selection, or from objects copied from other images. You can modify objects using almost any tool in the Toolbox. For example, the Undo tools are used to erase parts of objects from your image. When you are satisfied with the position and appearance of an object, you can make it a permanent part of your image by merging it with the background where it is no longer editable as a separate component. You can use objects to

• experiment with the appearance of an image by adding and editing elements from any image

• limit the application of color and other effects to a specific, defined area

• define areas on your image as links to World Wide Web pages

• create mask selections by converting the shape of your objects to masks

After you create objects, you can select them, rearrange them in the image, group them together, combine them with each other or with the image background, transform their shape, alter their edges, adjust their transparency, or delete them. Objects are the primary components in all Corel PHOTO-PAINT images and can be edited with controls on the Objects Palette and the Object Properties dialog box, as well as on the Tool Settings Palette and on the Property Bar for the active tool.

Creating and copying objects

You can create objects from scratch or you can copy them from other sources such as masks, paths, text, clipart, scanned images, CDs, or other images. Create objects from scratch using the Text tool, the shape tools, or most paint tools. Create objects from other sources by cutting or copying them to the Clipboard, and then pasting them into your image, or by creating them from a mask selection.

You can make copies of objects in your image by duplicating them. You can also copy one or more objects to any image using the Copy and Paste commands in the Edit menu.

Creating objects from scratch

Use the shape tools to create rectangles, ellipses, polygons, and lines as objects. If you want to create a shape as a new object in your image, you must enable the Render To Object button. If you do not render the shape to an object, the shape becomes a component of the last object created in the image.

Various tools can be used to create an object from scratch.
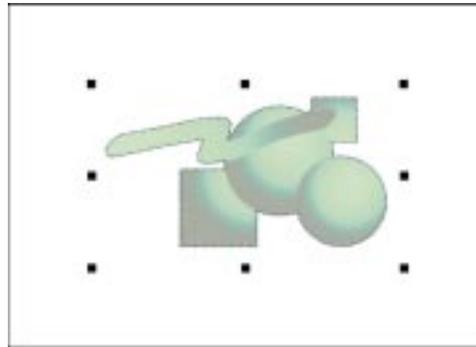
You can use a paint tool to create objects from brush strokes, from spray-on images, and by cloning other objects as you paint, and you can use the Text tool to render text as objects.

Creating objects from masks

If you select an area on part of an object using one of the mask tools, you can create another object from that selected area. You can also create an object from all visible elements within a mask. The area of your image that is enclosed by the mask marquee becomes a new object in the image. The new object floats above the image and can be edited as a separate image component. You can create complex objects in your images by creating a mask from an intricately-shaped path and then converting the mask to an object. For more information about paths, see "Using paths to define image areas" on page 295.

Creating objects by copying

You can create objects by copying other objects in an image or by copying and pasting objects from one image to another. If you want to copy multiple objects and paste them into an image simultaneously, select all of the objects at once. The objects are pasted in your image as a group and must be deselected if you want to work on individual objects.

Creating objects using the paint tools

You can create objects from scratch as a series of brush strokes, as a preloaded, spray-on image, or by cloning elements from another object.

To create objects using the paint tools

1. Choose Object, Create, New Object.

2. Open the Paint Tools flyout, and click a paint tool.

3. Set the tool's attributes on the Property Bar.

4. Click and drag in the Image Window.

5. Repeat steps 2 to 4 to add more effects to the object.

• You must choose the Create, New Object command from the Object menu each time you use a paint tool to create an object. Otherwise, the brush strokes are applied to the last selected object.

• You can also click the New Object button at the bottom of the Objects Palette to create a new object. You must disable the Lock Transparency check box to access the New Object button.

• If the Marquee Visible command in the Object menu is enabled, a marquee surrounds the new shape.

• You can assign a new name to an object by double-clicking the object on the Objects Palette, and typing a name in the Name box. Objects do not keep their assigned name when you cut or copy them to another image.

Creating objects from shapes and segments

You can use the shape tools to create rectangles, ellipses, polygons, and line segments as objects.

To create objects from shapes and segments

1. Open the Shape Tools flyout, and click a shape tool.

2. Set the tool's attributes on the Property Bar.

3. Click the *Render To Object button* on the Property Bar.

4. Draw a shape in the Image Window.

- If the Marquee Visible command in the Object menu is enabled, a marquee surrounds the new shape.

- You must enable the Render To Object button each time you use a shape tool to create an object. Otherwise, the shape is added to the last selected object.

- You can assign a new name to an object by double-clicking the object on the Objects Palette and typing a name in the Name box. Objects do not keep their assigned name when you cut or copy them to another image.

Creating an object from the image background

You can turn your image's background into an object so that you can transform it, move it, and edit it as you would do with any other object. The background becomes an object and is given an object name on the Objects Palette.

To create an object from the image background

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Choose the background thumbnail from the Objects Palette.

3. Choose Object, Create, From Background.

- You can assign a new name to an object by double-clicking the object on the Objects Palette and typing a name in the Name box. Objects do not keep their assigned name when you cut or copy them to another image.

Creating text objects

You can add text to an image using the Text tool. The text is created as a single object that you can edit with any image-editing tool that you use for

other objects. For more information about editing text, see "Editing text" on page 245.

To create a text object

1. Choose a color for the text from the on-screen Color Palette.

2. Click the *Text tool*.

3. Specify the tool settings on the Property Bar.

4. Click inside the Image Window to position your cursor.

5. Type the text in the Image Window.

6. Click outside of the text box.

- To edit a text object, click the text with the Text tool. If a frame does not appear around the text object when you click it with the Text tool, any text you type is created as a new text object.

- If the Render Text To Mask button is enabled on the Property Bar, the text is rendered as a mask selection instead of an object.

- You can reposition the insertion point by moving the cursor to a new location and clicking again.

- You can also set the Text tool's settings on the Tool Settings Palette.

Creating objects from masks

You can create objects from masks by copying all visible elements within a mask, or by copying part of an existing object with a mask. For information about making selections with a mask, see "Using masks to make selections" on page 57.
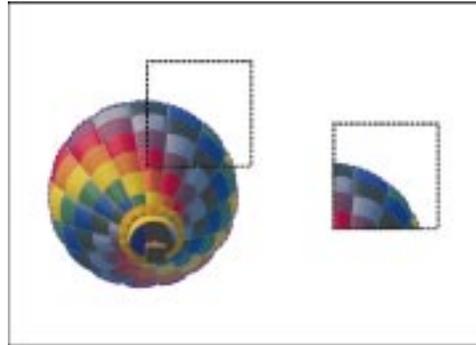
To create an object from all visible elements within a mask

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on the image.

3. Choose Edit, Copy Visible.

To create an object from part of another object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Open the Mask Tools flyout, and click a mask tool.

4. Select an area on the object that you want to copy.

5. Choose Object, Create, Object: Copy Selection.

• You can also create an object from part of another object by clicking the
Create Object: Copy Selection button on the Standard toolbar or the
Create Object From Mask button on the Objects Palette.

Copying objects in the same image

You can make one or more copies of an object using the Duplicate command.
When you copy objects in the same image, the duplicate object is
superimposed on the original but is a separate object with its own thumbnail
on the Objects Palette.

To make a copy of an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Choose Object, Duplicate.

• You can duplicate multiple objects by holding down Shift, clicking the objects, and choosing Object, Duplicate.

• You can also duplicate multiple objects using the Objects Palette. Hold down Command, choose the name of the objects on the Objects Palette, and choose Object, Duplicate.

• If you do not deselect the duplicate objects after creating them, you can move them as a block by clicking any duplicate and dragging. Click and drag the duplicate object to see the original underneath.

Copying objects to other images

You can copy one or more objects to a new or existing image. If you want to copy only part of an object, select it with a mask. For information about making selections with a mask, see "Using masks to make selections" on page 57.

To copy an object to an existing image

1. Open the Object/Mask tools flyout and click the *Object Picker tool.*

2. Select an object.

3. Choose Edit, Copy.

4. Choose File, Open.

5. Locate the folder where the image to which you want to copy the object is stored.

6. Choose the filename, and click Open.

7. Choose Edit, Paste, As New Object.

To copy an object to a new image

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Select an object.

3. Choose Edit, Copy.

4. Do one of the following:

- Choose Edit, Paste, As New Document.
- Choose File, New From Clipboard.

- You can copy multiple objects by holding down Shift, clicking the objects, and choosing Edit, Copy.
- You can also copy multiple objects using the Objects Palette. Hold down Command, choose the name of the objects on the Objects Palette, and choose Edit, Copy.

To copy part of an object to another image

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.
2. Select an object.
3. Open the Mask Tools flyout, and click a mask tool.
4. Select an area on the object that you want to copy.
5. Choose Edit, Copy.
6. Choose File, Open.
7. Locate the folder where the image to which you want to copy the object is stored.
8. Choose the filename, and click Open.
9. Choose Edit, Paste, As New Object.

Cutting and pasting objects

If you want to remove an object from an image and copy it, you can cut it and copy it to another image. The selected object is cut to the Clipboard, and the background behind it is revealed. You can also use a mask selection to cut part of an object or the image background and create a new object in another image. For information about making selections with a mask, see "Using masks to make selections" on page 57.

To cut and paste an object into a new image

1. Open the Object/Mask Tools flyout and click the *Object Picker tool*.
2. Select an object.
3. Choose Edit, Cut.
4. Choose File, Open.

5. Locate the folder where the image to which you want to paste the object is stored.

6. Choose the filename, and click Open.

7. Choose Edit, Paste, As New Object.

To cut part of an object and paste it as a new object

1. Follow steps 1 and 2 from the previous procedure.

2. Open the Mask Tools flyout, and click a mask tool.

3. Select an area on the selected object that you want to copy.

4. Choose Edit, Cut.

5. Choose File, Open.

6. Locate the folder where the image to which you want to paste the object is stored.

7. Choose the filename, and click Open.

8. Choose Edit, Paste, As New Object.

- After you create a mask, you can also create an object by choosing Object, Create, Object: Cut Selection or by clicking the Create Object: Cut Selection button on the Standard toolbar.

Selecting objects

Before you can edit the objects in your image, you must select them with the Object Picker tool. When an object is selected, a highlighting box appears around it in the Image Window. A highlighting box is an invisible rectangle, with eight selection handles, that encloses selected objects. If you select several objects, the highlighting box expands to surround all of them. You can use the selection handles on the highlighting box to size and scale selected objects. You can deselect objects so that they can no longer be transformed.
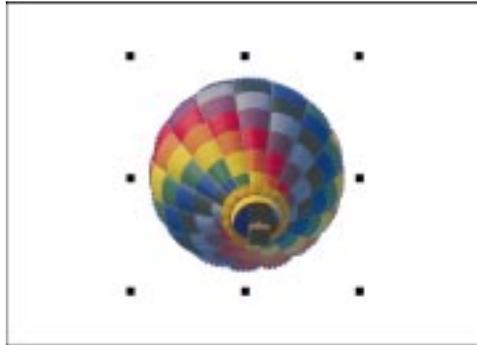
If you select multiple objects in the Image Window or on the Objects Palette, only one object is considered active. You can make an object active by choosing it from the Objects Palette. An active object is fully editable, which means that it is affected by image-editing tools and menu commands. Selected objects are affected only by commands such as moving, combining, merging, and adjusting opacity. If you select a single object, it is active by default. You can select all objects in an image at once, and you can deselect objects at any time.

Selected objects are highlighted by a blue bar on the Objects Palette. The active object has a red border around its thumbnail on the Objects Palette. When the background is active, a red border appears around its thumbnail. You can make the background active by choosing its thumbnail from the Objects Palette, but you cannot select it with other objects or make transformations to it. If the Marquee Visible command is enabled in the Object menu, the active object is also surrounded by a moving, dashed outline (called a marquee) in the Image Window.

Selecting a single object

You can select objects in the Image Window. When you select an object in the Image Window, selection handles appear around its highlighting box. If the Marquee Visible command in the Object menu is enabled, a moving dashed outline (called a marquee) also appears around the object.

To select an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Click inside the object.

- If one object is completely hidden by another in the Image Window, you can either hide or move the concealing object or choose the thumbnail of

the hidden object from the Objects Palette. For more information about hiding objects, see "Hiding and displaying objects" on page 205.

- You can also select an object by choosing its thumbnail from the Objects Palette, or by clicking and dragging in the Image Window to marquee-select the object.

Selecting multiple objects in the Image Window

You can select multiple objects to move or transform them simultaneously. You can also apply certain commands to multiple objects when they are selected, such as merging and combining.

To select multiple objects in the Image Window

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Hold down Shift, and click the objects.

- Selection handles define an invisible highlighting box around the selected objects.

- You can marquee-select multiple objects by clicking and dragging to enclose them in a marquee selection box. Objects that are partially enclosed by the marquee selection box are not selected.

Selecting multiple objects using the Objects Palette

You can select multiple objects individually or as a group using the Objects Palette.

To select multiple objects using the Objects Palette

1. Choose Window, Palettes, Objects.

2. Hold down Command, and choose the object names.

- You can select a group of contiguous objects on the Objects Palette by choosing the first object in the group, holding down Shift, and choosing the last object in the group.

Changing the active object

Only the active object can be edited with the tools from the Toolbox and all of the menu commands. You change the active object in a group of selected objects using the Objects Palette.

To change the active object

1. Choose Window, Palettes, Objects.

2. Hold down Command, and choose the name of the object.

- If you hold down Command, and choose the background thumbnail from the Objects Palette, all other objects are deselected and the background becomes active.

Selecting all of the objects in an image

You can select all of the objects in an image if you want to apply changes to all of them using the object transformation handles or certain menu commands.

To select all of the objects in an image

- Choose Object, Select All.

- The active object remains active when you select all objects.

Deselecting objects

You can deselect a single object, multiple objects, or all of the objects in an image.

To deselect a single selected object

- In the Image Window, click anywhere outside the object's marquee.

- When you deselect an object it is still active. This means that the object is still affected by image-editing tools and menu commands.

To deselect multiple objects

• Hold down Command, and click each object.

To deselect all objects

• In the Image Window, click outside the boundary of an object.

• You must make the background or another object active to deselect the currently active object.

• You can also deselect objects using the Objects Palette by holding down Command, and choosing the name of each object.

Moving and deleting objects

You can move objects interactively with the cursor or with keyboard keys, or you can move objects automatically using menu commands. You can also remove objects from your image at any time.

Moving objects

You can move an object interactively by dragging it from its original position to a new location in the Image Window. If you want to position your objects more precisely, you can set Nudge and Super Nudge values in the Preferences dialog box. The nudge values that you specify let you move your objects in preset increments. You can also move objects more precisely by setting values on the Position Page on the Tool Settings Palette or on the Property Bar for the Object Picker tool.

Deleting objects

You can remove objects from an image permanently by deleting them. After you delete an object, you can retrieve it by undoing the action. If you save the image after deleting an object, however, you must recreate the object completely or paste it from a source file.

Moving an object

You can move objects in the Image Window by dragging them.

To move an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Click the object and drag it to a different position on the image.

- Hold down Command while moving the object to constrain the movement to 45-degree angles (i.e., horizontally, vertically, or diagonally at 45 degrees).

- You can also move objects to grid lines and guidelines for more precise placement.

Moving an object a precise amount

To move an object a precise amount you can set new vertical and horizontal coordinates for the object.

To move an object a precise amount

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select the object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Position Mode button*.

4. Click the *Relative Position button*.

   The horizontal and vertical coordinates change to zero.

5. Type the distance that you want the object to move from its current location in the Horizontal and Vertical Transformation boxes.

6. Click the Transform button.

- The values in the Horizontal and Vertical Transformation boxes are measured in the units specified to create the image.

- You can also type values in the Horizontal and Vertical Transformation boxes to position the top left corner of the object's highlighting box.

- You can specify an image's unit of measurement by choosing Window, Palettes, Info and then clicking the flyout button on the Image Info Palette.

- You can also move an object by choosing Position from the pop-up menu at the top of the Tool Settings Palette, and typing values in the Horizontal and Vertical Transformation boxes.

Moving an object in preset increments

You can move an object in preset increments to a new position.

To move an object in preset increments

1. Choose Edit, Preferences.

2. From the Workspace category, choose General.

3. On the General page, type a value in the Nudge box, and click OK.

4. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

5. Select an object.

6. Press an Arrow key to move the object in the arrow's direction by the Nudge distance.

- The Nudge distance is measured in pixels.

- You can type a value in the Super Nudge box to move an object by a multiple of the Nudge distance. Hold down Shift, and press an Arrow key to move an object by the Super Nudge distance.

- You can select multiple objects and move them in preset increments by holding down Shift, clicking the objects, and pressing an Arrow key.

Deleting objects

When you delete an object, you remove it completely from the Image Window. If you save the image after deleting an object, you cannot restore the object.

To delete an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Choose Object, Delete.

- You can also delete objects using the Objects Palette. Hold down Command, choose the object names, and click the Delete Object(s) button on the Objects Palette.

- You can restore deleted objects by choosing File, Revert which reverts the image to the last saved version.

- Hold down Shift, and click to select multiple objects in the Image Window.

Arranging objects

Using the Objects Palette, you can keep track of all the objects you create and manipulate in an image. The Objects Palette lists the object names (including the background) and displays a thumbnail representation of each. It also contains controls for selecting, displaying, hiding, and arranging objects in the Image Window. You can customize the size of the Objects Palette to view more objects at a time.

Hiding and displaying objects

By default, all objects are displayed in the Image Window as you create them; however, you can hide objects to free up space when editing other objects. Hiding objects does not delete them from the image — it makes them invisible. Hidden objects are automatically locked so that they cannot be modified. An active object cannot be hidden. An active object's thumbnail is surrounded by a red border on the Objects Palette.

Changing the order of objects

When you create multiple objects in an image, they are stacked on top of one another in the order in which they were created. By default, the most recently created object is at the top of the stack on the Objects Palette, and the image background is always at the bottom. This stacking order determines the relationship between objects according to the sequence in which they are drawn. For example, a paint stroke applied to an object appears to cover objects that are lower in the stacking order. Similarly, you can move an object in the Image Window to cover an object that is lower in the stacking order. You can change the order of objects in a stack by dragging them on the Objects Palette or by choosing Object, Arrange, Order; however, you cannot move the image background from the bottom of the stacking order.
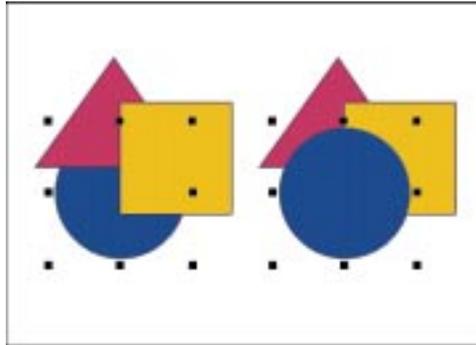
Aligning objects

Objects can be aligned to each other, to the center of the image, to guidelines, or to the grid. The Snap To commands (View menu) make the grid or the guidelines magnetic and force the edge of the selected object to move to the closest guideline or grid line.

Distributing objects

You distribute objects by spacing them all the same distance apart to give them a balanced or symmetrical appearance. You can distribute the objects vertically, horizontally, or both. Distribution is based on the distance between one selected object and the next selected object. You can also distribute objects so that the space between their facing edges is the same.

Sizing the Objects Palette

You can adjust the size of the Objects Palette to view more objects at a time. The Objects Palette retains the new size until you resize it.

To size the Objects Palette

1. Place the cursor over the size box in the bottom right corner of the Objects Palette.

2. Drag the size box to change the width and length of the Objects Palette.

Hiding and displaying objects

You can hide objects or the background in your image if they obscure the changes you are applying to the active object or to the selected objects. When you hide the image background, a nonprintable pattern occupies the background space.

To hide an object

- On the Objects Palette, click the Eye icon next to the thumbnail of an object.

- An active object cannot be hidden. An active object has a red border surrounding its thumbnail on the Objects Palette.

- If you click the Eye icon of the active object, all other objects are hidden.

- You can click the Eye icon again to display a hidden object.

Changing the order of objects

You can change the order of objects in your image to bring objects that are low in the stacking order into view, or to place objects that are high in the stacking order behind other objects.

To change the order of objects

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select the object(s).

3. Choose Object, Arrange, Order, and choose one of the following:

   - To Front — places the selected object(s) in front of all objects in the image

   - To Back — places the selected object(s) behind all objects in the image

   - Forward One — places the selected object(s) in front of the object it is currently behind

   - Back One — places the selected object(s) behind the object it is currently in front of

   - Reverse Order — reverses the stacking order of the selected objects

- When objects are grouped, they are considered to be at the same level in the stacking order. Therefore, you cannot place another object between individual objects in a group.

- When you group objects, all objects in the group are placed at the level of the highest object in the group.

- The image background is considered an object and has a thumbnail on the Objects Palette. It is always placed at the bottom of the stacking order on the Objects Palette because no object can be placed behind it.

- You can also select multiple objects using the Objects Palette. Hold down Command, and choose the name of each object you want to select.

- You can also change the stacking order on the Objects Palette by dragging the object name to a different position.

- You can select multiple objects by holding down Shift, and clicking the objects you want to select in the Image Window.

Aligning objects

You can align objects to another object, to image areas, or to the nearest grid point.

To align objects to each other

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Hold down Command, and choose the thumbnail of the object to which you want to align the other objects on the Objects Palette.

3. Hold down Shift, and click each object you want to select in the Image Window.

4. Choose Object, Arrange, Align And Distribute.

5. Choose the Align tab.

6. Click the To Active button.

7. Select the horizontal and vertical alignment settings.

- You must select multiple objects before you can access the To Active button.

To align objects to the center of the image

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Hold down Shift, and click each object you want to select in the Image Window.

3. Choose Object, Arrange, Align And Distribute.

4. Choose the Align tab.

5. On the Align Page, click the To Center Of Document button.

6. Select the horizontal and vertical alignment settings.

To align objects to the nearest grid point

1. Follow steps 1 and 2 from the previous procedure.

2. Choose View, Grid to display a grid on the Image Window.

3. Choose Edit, Preferences.

4. From the Workspace category, choose Display.

5. Set the grid attributes on the Display page, and click OK.

6. Choose Object, Arrange, Align And Distribute.

7. Choose the Align tab.

8. On the Align Page, enable the Align To Grid check box.

9. Select the horizontal and vertical alignment settings.

To align objects to parts of an image

1. Follow steps 1 and 2 from the "To align objects to the center of the image" procedure.

2. Choose Object, Arrange, Align And Distribute.

3. Choose the Align tab.

4. On the Align page, click the Selected To Document button.

5. Select the horizontal and vertical alignment settings.

- You can also select objects using the Objects Palette. Hold down Command, and choose the name of each object you want to select.

- The Preview button in the Align And Distribute dialog box lets you preview the alignment in the Image Window.

Distributing objects

You distribute objects by spacing them evenly to give the image a balanced appearance. You can distribute objects horizontally, vertically, or both, so that the distance is always the same from one object to the next object.

To distribute objects

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Hold down Shift, and click each object you want to select in the Image Window.

3. Choose Object, Arrange, Align And Distribute.

4. Choose the Distribute tab.

5. Enable one of the following buttons:

    - To Extent Of Document — evenly spaces the objects across the entire image

    - To Extent Of Selection — evenly spaces the selected objects from each other

6. Select the horizontal and vertical distribution settings.

- Distributing only two objects with the To Extent Of Selection button enabled has no effect.

- When you enable the Spacing check box in the Align And Distribute dialog box, the distance is equal between the edge of one selected object and the closest edge of the next selected object.

- You can use the Preview button in the Align And Distribute dialog box to preview the distribution in the Image Window.

- You can also select the objects using the Objects Palette. Hold down Command, and choose the name of each object you want to select.

- You can click the Reset button in the Align And Distribute dialog box to clear the distribution settings and start again.

Grouping and combining objects

You can group or combine objects so that they act as a single object. Grouping objects lets you perform the same operation on multiple objects at the same time. You can then ungroup objects to edit them individually.

Combining objects permanently creates a single object from multiple objects. You can combine objects to preserve their relationship to each other in the image. Corel PHOTO-PAINT also has a feature called the clipping group for combining characteristics of one object with another.

Grouping objects

When you select a group of objects with the Object Picker tool, a single highlighting box appears around the selection and a thick, black line connects the object thumbnails on the Objects Palette. You can then cut or copy the group to the Clipboard and edit it using menu commands or the transformation handles. The transformation handles that surround selected objects allow you to scale, resize, mirror, distort, or add perspective to the objects.

You can change the stacking order of groups and of other objects that are external to the groups; however, you cannot change the stacking order of the individual objects within the group. If you want to reorder, edit, or delete individual objects in a group, you must ungroup the objects and then make the appropriate changes.

When a group of objects is selected, handles surround the entire group. On the Objects Palette, the object thumbnails are attached by a black line.
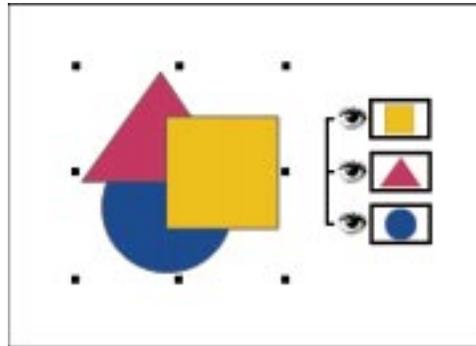
Combining objects

Objects can be combined with the image background or with each other. When you combine objects with the background, they no longer float above the rest of the image and cannot be selected or edited individually. Objects combined together are surrounded by a single marquee and function as a single object in the image. For this reason, you usually combine objects only when you are satisfied with their appearance and position in the image. You can also combine objects that you have pasted from the Clipboard to integrate them with the rest of the image. Combining objects reduces file size.

You can use merge modes to combine objects with the background or with other objects. Merge modes determine how the color of the object pixels are combined — either with each other or with the image pixels that lie beneath them in the background.

Combining object features using clipping groups

When you combine the characteristics of objects in Corel PHOTO-PAINT using clipping groups, you add the color or texture of some objects into the shape of another. Clipping groups place the pixels of child objects into the shape of the parent object. The result is that the parent object retains its shape but contains the color or texture of the child objects. You can separate the features of the child and parent objects at any time after saving them as a clipping group.
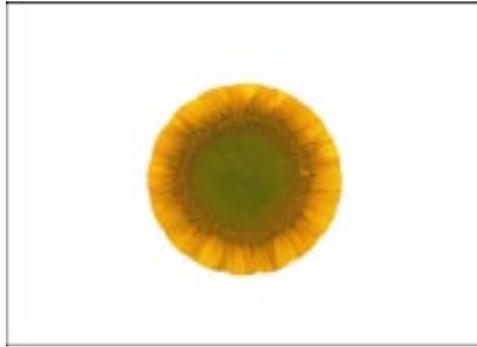
An object is always the parent to the objects above it on the Objects Palette. If the parent object is a picture of a balloon and has a child object that is a picture of a sunflower, clipping them together produces a balloon shape with the color and texture of a sunflower. If you want to create a sunflower shape with the color and texture of a balloon, you must rearrange the stacking order of the Objects Palette so that the balloon is now a child object and appears above the sunflower. The background cannot be part of a clipping group.

When you create a clipping group with two or more child objects, the highest child object in the stacking order covers the pixels of lower objects within the shape of the parent object. You can view the pixels of lower child objects in the clipping group, however, by clicking the Eye icon located next to the thumbnail of the objects above them in the stacking order.

Grouping objects

You can group objects so that they can be moved, sized, or deleted as a single entity. The thumbnails of grouped objects are attached by a thick, black line on the Objects Palette.

To group objects

1. Open the Object/Mask Tools flyout,and click the *Object Picker tool.*

2. Hold down Shift, and click each object you want to select in the Image Window.

3. Choose Object, Arrange, Group.

To add an object to an existing group

1. Select the group of objects.

2. Hold down Shift, and click each object you want to add to the group in the Image Window.

3. Choose Object, Arrange, Group.

- You can apply transformations such as rotation and skewing to all of the objects in a group in one operation.

- You can also group two or more existing groups into a single group.

- You can select the objects using the Objects Palette. Hold down Command, and choose the name of each object you want to select.

- You can also group selected objects by clicking the Group button on the Property Bar.

Ungrouping objects

You can ungroup objects to edit them individually.

To ungroup objects

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.
2. Click one of the objects in the group.
3. Choose Object, Arrange, Ungroup.
4. Click away from the group to remove the selection handles.

- You cannot remove a single object from a group without ungrouping them all.

- You can also ungroup objects by clicking the Ungroup button on the Property Bar.

Selecting multiple groups of objects

You can select multiple groups of objects in the same way that you select multiple objects.

To select multiple groups of objects

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.
2. Hold down Shift, and in the Image Window, click an object in each group you want to select.

Combining objects with the image background

Combining objects with the image background eliminates the risk of moving them accidentally and decreases file size. You can control the way the objects and the image background are combined by choosing a merge mode.

To combine objects with the background

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Hold down Shift, and in the Image Window, click each object you want to select.

3. Choose a merge mode from the Merge pop-up menu on the Property Bar.

4. Move the Opacity slider on the Property Bar to change the opacity level of the objects.

5. Choose Object, Combine, Combine Objects With Background.

Combining multiple objects into a single object

You can combine two or more objects into a single object if you intend to consistently edit the objects in the same way. When you combine objects, you can also avoid accidentally changing their relationship to each other in the image.

To combine multiple objects into a single object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Hold down Shift, and click each object you want to select in the Image Window.

3. Choose a merge mode from the Merge pop-up menu on the Property Bar.

4. Choose Object, Combine, Combine Objects Together.

- Combining objects is a permanent operation. It can be reversed only by using the Corel PHOTO-PAINT undo capabilities. For more information about the undo capabilities, see "Undoing and redoing changes" on page 36.

- When you combine multiple objects into a single object, considerably less file space is required.

- You can also select the objects using the Objects Palette. Hold down Command, and choose the name of each object you want to combine.

Creating a clipping group

You can create a clipping group to add the characteristics of some objects into the shape of another. A clipping group clips the pixels of child objects to the shape of a parent object. An object is always the parent to the objects above it in the stacking order on the Objects Palette.

The clipping group has clipped the child object, a balloon, to the parent object, a sunflower.

To create a clipping group

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Click and drag a child object onto its parent object.

3. Choose Window, Palettes, Objects.

4. On the Objects Palette, click the column on the left side of the child object's thumbnail.

- When you create a clipping group, an icon of a paper clip appears in the column, and the thumbnail of the child object indents.

- The clipping group hides all pixels belonging to a child object that do not overlap with the parent object. If no pixels overlap, the child object is completely hidden when you create the clipping group. However, you can still see an outline of the child object when you drag it in the Image Window.

- You can also create a clipping group by double-clicking an object's name on the Objects Palette, and enabling the Clip To Parent check box in the Object Properties dialog box.

- If you want to resize a child object to fit the shape of the parent, select the child object and drag one of the sizing handles after you have created the clipping group. To return the child object to its original size, hold down Control, and choose Reset.

- To undo the clipping group, click the paper clip icon next to each child object on the Objects Palette. When you undo a clipping group, the paper clip disappears and all pixels in the child objects reappear in the Image Window.

Transforming objects

You can modify the appearance of the objects in your image by sizing, scaling, rotating, skewing, distorting, flipping, mirroring, and adding perspective to them. When you click an object to select it in the Image Window, selection handles surround the object's highlighting box. If you click the selected object again, handles for rotating and skewing the object appear. Click a third and fourth time to display handles that are used to apply distortion and perspective respectively. The transformation handles let you alter the physical position, size, and appearance of an object without changing its basic shape. You can apply transformations directly in the Image Window using the handles that appear around an object's highlighting box. You can also transform objects using the transformation modes on the Property Bar or on the Tool Settings Palette for the Object Picker tool. Transformations can be applied to one object, to multiple objects, or to objects that have been grouped.

Selection handles for sizing and scaling (left). Handles for rotation and skewing (right).
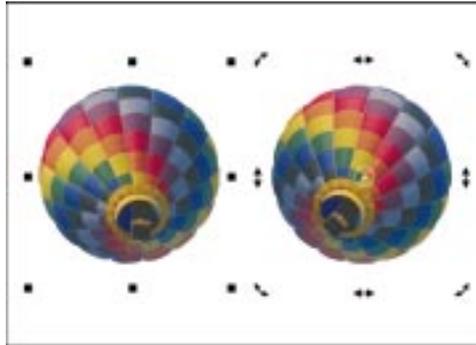
When you scale, skew, or rotate an object, jagged edges can become apparent. For that reason, most transformation modes for the Property Bar and the Tool Settings Palette provide an Anti-aliasing option which is enabled by default. Anti-aliasing varies the transparency of the pixels along an object's edge to smooth the edges and make the object blend more easily with the background.

Two views of an object's edge. The top view shows a jagged edge that results from not using anti-aliasing. The bottom view shows an anti-aliased edge.
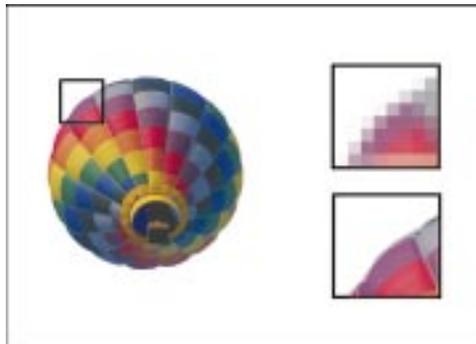
Previewing and canceling transformations

When you transform an object in your image, the object changes in the Image Window only. This lets you preview transformations before applying them.

If you want to preview a transformation before permanently applying it to an object, you can transform a copy of the object using the Apply To Duplicate button. You can then delete the copy if you are not satisfied with the transformations and leave the original object unchanged.

When you transform objects in the Image Window, you can cancel the transformation by pressing Esc or by double-clicking outside the selection. You apply a transformation by pressing Return, by double-clicking inside the object, by holding down Control, and choosing Apply from the pop-up menu, or by clicking the Apply button on the Property Bar or on the Tool Settings Palette. To avoid losing image quality from many, separate transformations, perform all of the transformations at once, and then apply them.

Sizing and scaling objects precisely

Sizing allows you to set the width and height of the object. Scaling resizes an object to a percentage of its original size.

To size an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Size Mode button*.

4. Type values in the Horizontal and Vertical Transformation boxes.

5. Click the Transform button to preview the transformation in the Image Window.

6. Click the Apply button on the Property Bar to apply the transformation.

To scale an object

1. Follow steps 1 and 2 from the previous procedure.

2. Open the Transformation Modes flyout on the Property Bar, and click the *Scale Mode button*.

3. Type a scaling percentage in the Horizontal and Vertical Transformation boxes.

4. Click the Transform button to preview the transformation in the Image Window.

5. Click the Apply button on the Property Bar to apply the transformation.

- You can retain the object's current height-to-width ratio by clicking the Maintain Aspect button on the Property Bar or by enabling the Maintain Aspect check box on the Tool Settings Palette.

- You can also size or scale an object using the controls on the Tool Settings Palette.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Sizing an object interactively in the Image Window

Sizing handles let you change the width and height of an object.

To size an object interactively

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select the object.

3. Drag any handle on the highlighting box.

4. Repeat step 3 until the desired size has been achieved.

5. Click the Apply button on the Property Bar to apply the transformation.

- Hold down Option as you drag to keep the object's center stationary as you size the object.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

- You can hold down Shift, and drag a corner handle to size an object non-proportionately.

Rotating an object

You can rotate an object using the Property Bar or you can rotate an object directly in the Image Window. Objects are rotated around a pivot point called the center of rotation. By default, the center of rotation is located in the middle of the highlighting box.

The rotation handles are the double-headed arrows in the corners. They rotate the object around a movable center of rotation.
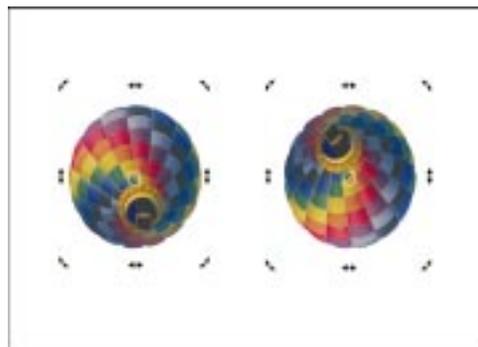
To rotate an object using the Property Bar

1. Open the Object/Mask Tools flyout,and click the *Object Picker tool.*

2. Select an object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Rotate Mode button*.

4. Type an angle in the Rotation Angle box on the Property Bar.

   A negative value rotates the object clockwise; a positive value rotates it counterclockwise.

5. Click the Transform button to preview the transformation in the Image Window.

6. Click the Apply button on the Property Bar to apply the transformation.

- You can type horizontal and vertical coordinates in the Horizontal and Vertical Transformation boxes to define the center of rotation relative to the rulers.

- You can specify the center of rotation relative to the current position of the center of rotation instead of relative to the rulers by enabling the Relative Center button and typing values in the Horizontal and Vertical Transformation boxes.

- You can also rotate an object using the controls on the Tool Settings Palette.

To rotate an object in the Image Window

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Click inside the object until the rotation handles appear.

   Rotation handles are the curved, double arrows in the corners of the highlighting box.

3. Drag the center of rotation to the desired location.

4. Drag a corner handle to a new position.

5. Repeat step 4 until you've rotated the object to the desired angle.

6. Click the Apply button on the Property Bar to apply the transformation.

- The center of rotation is represented by a bull's-eye icon in the Image Window.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Creating a mirror image of an object

You can mirror an object horizontally, vertically, or both using the Property Bar. You can also mirror objects directly in the Image Window.

To mirror an object using the Property Bar

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Scale Mode button*.

4. Enable any of the following buttons:
   - Flip Object Horizontally — mirrors the object along its vertical axis
   - Flip Object Vertically — mirrors the object along its horizontal axis

5. Click the Transform button to preview the transformation in the Image Window.

6. Click the Apply button on the Property Bar to apply the transformation.

- An object flips horizontally on its right edge and vertically on its top edge.

To mirror an object manually in the Image Window

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Select the object.

3. Hold down Command, and drag a center handle across the object past the center handle on the opposite side of the highlighting box.

4. Click the Apply button on the Property Bar to apply the transformation.

- You can also mirror an object using the controls on the Tool Settings Palette.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Skewing an object

You can skew an object by dragging one of its side handles or by using the Property Bar. When you skew one side of an object, the opposite side remains stationary to create a slanted effect.

Dragging the straight, double-headed arrows on each side skews an object.
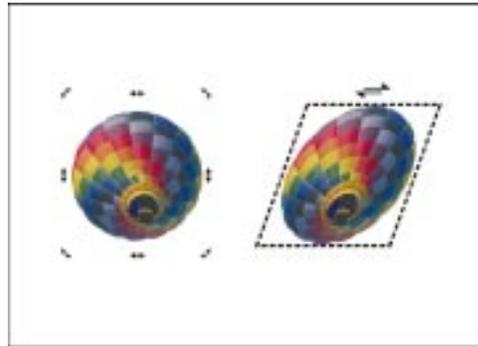
To skew an object using the Property Bar

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Open the Transformation Modes flyout on the Property Bar, and choose the *Skew Mode button*.

4. Type values in the Horizontal and Vertical Transformation boxes.

5. Click the Transform button to preview the transformation in the Image Window.

6. Click the Apply button on the Property Bar to apply the transformation.

- Positive horizontal settings move the top of the object to the left; negative horizontal settings move it to the right. Positive vertical settings move the right side of the object up; negative vertical settings move it down.

To skew an object directly in the Image Window

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Click inside the object until the skewing handles appear.

   Skewing handles are the straight, double-headed arrows located in the center of each side of the highlighting box.

3. Drag a skewing handle to a new position.

4. Repeat step 3 until you achieve the desired effect.

5. Click the Apply button on the Property Bar to apply the transformation.

- You can also skew an object using the controls on the Tool Settings Palette.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Distorting an object

You can distort an object by dragging a transformation handle away from it to stretch it. You can also distort an object by dragging a transformation handle into the object to shrink it.

Distortion is applied by dragging the diagonal, double arrows.
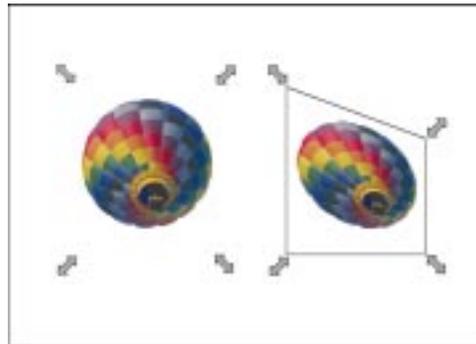
To distort an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Distort Mode button*.

4. Drag a distortion arrow to a new position.

5. Repeat step 4 until you achieve the desired effect.

6. Click the Apply button on the Property Bar to apply the transformation.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Applying perspective to an object

Perspective gives an object a sense of depth and makes it look three-dimensional.

The four circular handles apply perspective to an object.
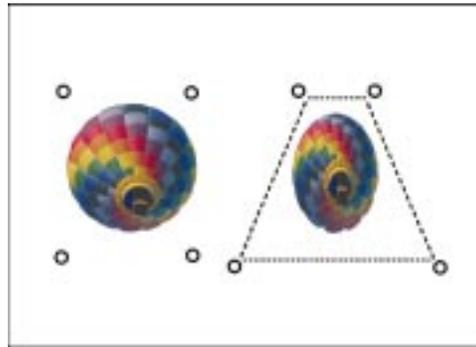
To apply perspective to an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select the object.

3. Open the Transformation Modes flyout on the Property Bar, and click the *Perspective Mode button*.

4. Drag a perspective handle to a new position.

5. Repeat step 4 until you achieve the desired effect.

6. Click the Apply button on the Property Bar to apply the transformation.

- You can also apply a transformation by double-clicking the selected object, or by pressing Return.

- You can also cancel a transformation by double-clicking outside the selected object, or by pressing Esc.

Altering object edges

You can fine-tune the appearance of the objects that you add to your image by adjusting their edges in the Image Window. You can alter object edges so that objects blend with the background by applying feathering, and defringing. If you want to emphasize certain objects in your image, you can define their edges by sharpening them and adding drop shadows. You can also customize the appearance of the object marquee by changing its color and by adjusting its threshold value.

Marquee threshold and color

You can adjust the marquee threshold value if you want to change the visual boundary of an object. Lower threshold values cause the marquee to enclose more of an object's pixels; higher threshold values cause the marquee to enclose less of an object's pixels.

You can change the color of the object marquee if you want to make it easier to see against the image background.

Feathering

Feathering softens and smoothes the edges of an object by gradually increasing the transparency of its the pixels. You can specify the width of the feathered section of the object and the transparency gradient you want to use. The transparency gradient determines whether the transparent pixels in the feathered section progress evenly over the feathered section or in a more concentrated fashion.

Feathering reduces the sharpness of the object edges but can cause some loss of detail. You can use feathering to simulate anti-aliasing on a hard-edged object or to enhance an anti-aliased object's edges.

After feathering an object's edges, you can apply the transparency changes to a clip mask. Disabling and enabling the clip mask lets you view the object with or without the feathered edges.

Feathering an object that has sharp edges makes it blend more gradually toward the background.
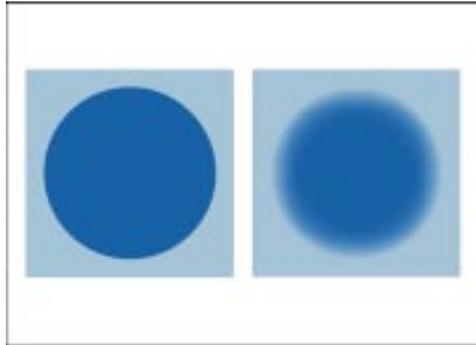
Sharpening

Sharpening is the opposite of feathering; it defines object edges by making the edges crisp and obvious. This is done by choosing a grayscale or transparency value for the pixels located along the object's edges. The object marquee's threshold adjusts to exclude pixels exceeding the specified transparency value. The excluded pixels become fully transparent and are no longer a part of the visible object. The pixels inside the marquee do not blend into the background as subtly as before.

Defringing

Objects created from mask selections sometimes include unwanted or stray pixels along their edges. This is most apparent when the selection used to create the object is surrounded by pixels of a very different brightness or color. Defringing replaces the color of the stray pixels with a color from inside the object so that the defringed object blends with the background.

Remove matte

You can use the Remove Matte commands to change the transparency of the pixels along an object's edge. The more transparent the pixels are, the more you can see through them. The Remove Black Matte command makes the semitransparent pixels more transparent. The Remove White Matte command increases the opacity of semitransparent pixels. Opacity is the opposite of transparency; the more opaque pixels are, the less you can see through them.

Drop shadows

A drop shadow is an object that looks like the shadow of an object. You can create drop shadows that are flat like a silhouette or that have perspective so that the sides of the shadow converge to a vanishing point. You can also change the shadow's direction and distance from an object, its color and opacity, and the feathering of its edges. You can control a drop shadow's

distance from the original object and the direction using settings in the Object Dropshadow dialog box or interactively in the Image Window.

Adjusting the threshold of an object marquee

The object marquee identifies the visual boundary of an object. You can adjust the threshold of the object marquee if you want to change its position along an object's edges.

On the left, the marquee threshold is set to 1. On the right, it is set to 220.
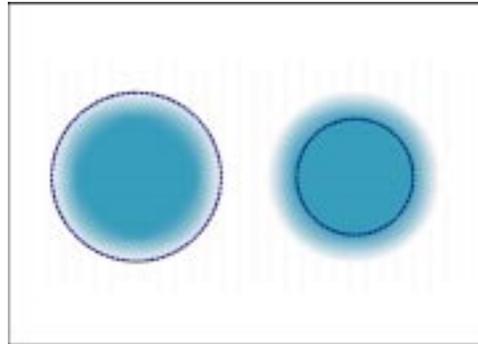
To adjust the threshold of an object marquee

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. In the Threshold section, type a threshold value from 1 to 255 in the Object box.

- New marquee threshold values do not affect the selected objects.

- When you adjust the object marquee threshold value, the area on the object that is enclosed by the marquee changes, but the object itself does not change. Pixels that are not completely opaque can lie outside of the marquee even though they are still part of the object.

- If you want to enclose all of an object's pixels in the marquee, set a low threshold value. If you want to enclose only the object's most opaque pixels in the marquee, set a high threshold value.

Changing the color of the object marquees

You can change the color of object marquees to make them easy to see against an image background.

To change the color of the object marquees

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Choose a color from the Object Marquee color picker.

• You can display object marquees by enabling the Marquee Visible command in the Object menu. Disable this command to hide object marquees in the Image Window.

Feathering the edges of an object

Feathering gradually increases the transparency of the pixels along an object's edge in a linear or curved progression. The more transparent the pixels are, the more you can see through them. You can remove feathered edges from an object temporarily using a clip mask. A clip mask lets you edit an object's transparency levels without affecting the pixels in the object.

To feather the edges of an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Choose Object, Feather.

4. Type a value, in pixels, in the Width box.

5. Choose one of the following edge types from the Edges pop-up menu:

   • Linear — adjusts the transparency in even increments from the beginning to the end of the feathered section

   • Curved — adjusts the transparency to follow a slanted «S» shaped curve. This results in small transparency increments at the beginning of the feathered edge, larger transparency increments in the middle, and small transparency increments at the end.

• You can click the Preview button in the Feather dialog box to preview the effect in the Image Window before applying it to your image.

To remove feathered edges from an object temporarily

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Choose Window, Palettes, Objects.

3. Choose an object from the Objects Palette.

4. Choose Object, Clip Mask, Create, From Object Transparency.

5. Choose Object, Clip Mask, Disable.

- When you disable a clip mask, a red X appears over its thumbnail in the Objects Palette. The transparency changes to the associated object disappear.

- You can permanently remove the clip mask and the transparency changes it contains, by choosing Object, Clip Mask, Remove.

Sharpening the edges of an object

You can sharpen the edges of an object to make them crisp and more obvious in the image.

To sharpen the edges of an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Choose Object, Matting, Threshold.

4. In the Level box, type a value between 1 and 255 to specify which pixels you want the edges of the object to lie on.

Defringing an object

Objects can include stray pixels along their edges that contrast sharply with neighboring pixels, giving them a slightly ragged effect. Defringing these stray pixels blends the object gradually with the background to create a smooth, polished appearance.

To defringe an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Choose Object, Matting, Defringe.

4. Type a value between 1 and 100 in the Width box.

Large defringe values create a gradual transition between the edges of the object and the background.

Removing a black or white edge from an object

You can remove a black or white edge from an object by making the semitransparent pixels along an object's edge more transparent or more opaque. The more transparent pixels are, the more you can see through them; the more opaque pixels are, the less you can see through them.

To remove a black or white edge from an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select an object.

3. Do one of the following:

   - Choose Object, Matting, Remove Black Matte to make semitransparent pixels more transparent.

   - Choose Object, Matting, Remove White Matte to make semitransparent pixels more opaque.

4. Repeat step 3 if necessary.

Creating a drop shadow

A drop shadow is an object that shadows another object in an image. There are two types of drop shadows: flat and perspective. Flat drop shadows silhouette an object. Perspective drop shadows create three-dimensional depth. The original object's transparency and feathered edge are duplicated in the shadow object. You can apply a drop shadow to one object or to several objects at a time.

A drop shadow was created and added to the sunflower. It is black, slightly offset, with a feathered edge.

To create a flat drop shadow

1. Select an object.

2. Choose Object, Drop Shadow.

3. Enable the Flat button.

4. Type a value in the Orientation Direction box to specify the angle at which the shadow lies in relation to the object.

5. Do one of the following:

   • Type a value in the Offset box to specify the distance the shadow extends from the object based on the image's units of measurement.

   • Enable the Relative Values check box in the Presets section, and type a value in the Offset box to specify the shadow's size as a percentage of the object's size.

6. Move the Opacity slider to set the transparency of the drop shadow.

7. Choose a color from the color picker for the shadow.

8. In the Feather section, move the Width slider to specify the number of pixels on the shadow's edge you want to feather.

9. Choose a direction for the feathered pixels from the Feather Direction pop-up menu.

• The shadow's angle is constrained to 45-degree increments by default. Disable the Constrain 45 check box to set other angles of direction.

To create a perspective drop shadow

1. Select an object.

2. Choose Object, Drop Shadow.

3. Enable the Perspective button.

4. Type a value in the Orientation Direction box to specify the angle at which the shadow lies in relation to the object.

5. Type a value in the Light Degrees box to specify the angle of the light source.

6. Move the Fade slider to specify the percent by which the drop shadow fades as it moves away from the object.

7. Follow steps 6 to 9 from the previous procedure.

- The feathering and opacity options you choose in the Object Dropshadow dialog box are added cumulatively to the transparency attributes already contained in the original object.

- When you choose a feather direction other than Average, you can also change the shape of the feathered pixels by choosing Linear or Curved from the Edges pop-up menu.

- You can hold down Shift and click to select multiple objects in the Image Window.

- Click the Preview button to preview the drop shadow in the Image Window.

- When a drop shadow is created, it is grouped with the original object. For more information about grouping objects, see "Grouping objects" on page 212.

Editing an object's transparency

You can edit the transparency of an entire object, or you can edit the transparency of part of an object. When you change the transparency of an object, you modify the grayscale value of its individual pixels. Grayscale values correspond to the 256 shades of gray used to represent levels of transparency, ranging from black, which has a value of 0 (transparent), to white, which has a value of 255 (opaque).

Editing the transparency of an entire object

Editing the transparency of an entire object evenly reveals the object or background that lies beneath the selected object. You can change the transparency of one or more objects simultaneously using the Opacity slider on the Property Bar or on the Objects Palette. You can also change or undo the object's transparency at any time — even after saving the changes to the object. Opacity is measured on a percentage basis ranging from 1, which makes objects fully transparent, to 100, which makes them fully opaque.

When you create a clipping group, you can use the Opacity slider to make all pixels of a child object more transparent to reveal the object below it. You can adjust the transparency of all objects in a clipping group so that their pixels appear to blend within the shape of the parent object.

Editing the transparency of part of an object

Editing the transparency of part of an object changes some of its pixels to reveal the underlying object or background in varying degrees. The effect can

be sporadic, where pixels of greater or lesser transparency stand out from their surrounding pixels or gradual, where the transparency of the pixels changes progressively through a series of intermediate steps to blend one transparency value into another.

Creating clip masks

A clip mask lets you vary the transparency of pixels in an object without permanently affecting the object's pixels. You can create a clip mask to edit the transparency of an entire object or to edit the transparency of only part of an object. Clip masks also let you edit the transparency of a clipping group the same way that you edit the transparency of an object. You can disable a clip mask at any time to temporarily hide the transparency of an object or you can remove a clip mask to permanently discard the transparency of an object.

Editing the transparency of an entire object

You can change the transparency values of all pixels in all selected objects by an equal amount. If some pixels are transparent before you change the object's overall transparency, the transparency of the pixels is increased proportionally.

To edit the transparency of an entire object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Move the Opacity slider on the Property Bar to specify the object's transparency.

- The Opacity slider can also be accessed on the Objects Palette and is not available for black-and-white (1-bit) images.

- You can edit the transparency of multiple objects simultaneously. For more information about selecting multiple objects, see "Selecting multiple objects in the Image Window" on page 199.

Editing the transparency of part of an object

You can change the transparency of part of an object with the Object Transparency Brush tool.

To edit the transparency of part of an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Open the Object Transparency Tools flyout, and click the *Object Transparency Brush tool.*

4. Set the Object Transparency Brush tool settings on the Property Bar.

5. Type 0 in the Transparency box on the Property Bar.

6. Move the Opacity slider on the Property Bar to set the opacity level of the Object Transparency Brush tool.

7. Set other brush attributes on the Property Bar.

8. Drag across the pixels that you want to make more transparent in the object.

- The Opacity slider is based on grayscale values ranging from 0 (transparent) to 255 (opaque).

- If you set the Opacity slider to 0, brushing over the object makes the pixels totally transparent. If the Lock Transparency check box on the Objects Palette is disabled, the object marquee changes shape to exclude those pixels.

- You can also specify the Object Transparency Brush tool settings on the Tool Settings Palette.

- You can create a clip mask to view the object separately from the transparency changes. This lets you edit the object without affecting its transparency values.

- If you want to add the new transparency value to the existing transparency value of the pixels, enable the Use Original Transparency button on the Property Bar.

Applying a transparency gradient to an object

You can apply a transparency gradient to an object so that the transparency gradually fades according to a selected type or shape. You can select the shape or type of gradient, its start and end points, their transparency values, and the gradient direction.
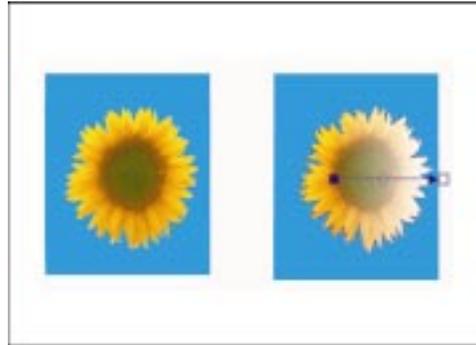
To apply a transparency gradient to an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Open the Object Transparency Tools flyout, and click the *Object Transparency tool.*

4. Choose a gradient type from the Type pop-up menu on the Property Bar.

5. Drag the gradient arrow's start node to the point at which you want the to start the transparency gradient in the Image Window.

6. Move the Node Transparency slider on the Property Bar to set the transparency value at which you want to start the gradient.

7. Drag the gradient arrow's end node to the point at which you want the gradient to end in the Image Window.

8. Move the Node Transparency slider on the Property Bar to specify a transparency value at which you want to end the gradient.

9. Click the Apply button on the Property Bar.

• All pixels in the selected object that lie beyond the end node have the same transparency value as the end of the gradient.

• If you choose the Flat gradient type from the Type pop-up menu, you do not have to adjust the gradient arrow in the Image Window.

• You can click the Use Original Transparency button on the Property Bar or enable the Use Original Transparency check box on the Tool Settings Palette to add the transparency values cumulatively.

- You can also specify the Object Transparency tool settings on the Tool Settings Palette.

- You can also apply a transparency gradient to two or more selected objects at the same time and then create a clip mask on them simultaneously. For more information about selecting multiple objects, see "Selecting multiple objects in the Image Window" on page 199.

Customizing a transparency gradient

When you apply a transparency gradient to an object, the transparency values of the object's pixels gradually change from the start of the gradient to the end. You can use the Object Transparency tool to increase the contrast of a gradient's transparency values so that the object looks like it is reflecting light. You can change the gradient by adding nodes to it and then specifying a transparency value for each node.

To customize a transparency gradient

1. Open the Object/Mask Tools flyout, and click the *Object Transparency tool.*

2. Select a gradient type from the Type pop-up menu on the Property Bar.

3. Drag the gradient arrow's start node to the point at which you want to start the transparency gradient in the Image Window.

4. Move the Node Transparency slider on the Property Bar to set the transparency value at which you want to start the gradient.

5. Drag the gradient arrow's end node to the point at which you want the gradient to end in the Image Window.

6. Move the Node Transparency slider on the Property Bar to specify a transparency value at which you want to end the gradient.

7. Drag a color swatch from the on-screen Color Palette to the gradient arrow in the Image Window.

8. Move the Node Transparency slider to specify a transparency value for the new node.

9. Repeat steps 7 and 8 to add new nodes and transparency values to the gradient.

- When you drag a color swatch from the on-screen Color Palette to the gradient arrow, a new node appears on the gradient arrow, and applies a transparency according to the grayscale value of the color selected.

- Because the Bitmap, Texture, and Flat blend shapes make global changes to an object, you cannot add nodes to customize their transparency values.

- The gradient arrow appears in the Image Window for all of the gradient types except the Flat shape.

- All pixels in the selected object that lie beyond the end node will have the same transparency value as the end of the gradient.

- You can also set the Object Transparency tool settings on the Tool Settings Palette.

To change the transparency of a node on the transparency gradient

1. Click the node in the gradient for which you want to change the transparency value.

2. Move the Node Transparency slider to specify the transparency value for the selected node.

- You can also change a node's transparency by dragging a color swatch from the on-screen Color Palette onto the node. The transparency change is applied according to the grayscale value of the selected color.

- You can remove a node from a transparency gradient by holding down Control, clicking the node, and choosing Delete. You cannot delete the transparency gradient's start and end nodes.

Making selected colors in an object transparent

You can make all of the pixels in a selected object that are within the same color tolerance as the selected pixel transparent.

To make selected colors in an object transparent

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Open the Object Transparency Tools flyout, and click the *Transparent Color Selection tool.*

4. On the Property Bar, do one of the following to define the color tolerance:

- Click the Normal button, and type a value in the Color Similarity box to specify the range of pixels you want to make transparent based on similarity of color.

- Click the HSB button, and type values in the Color Hue Level, Color Saturation Level, and Color Brightness Level boxes to specify the range of pixels you want to make transparent based on their similarity in hue, saturation, and brightness.

5. Click inside the Image Window.

- Because pixels that are fully transparent have a grayscale value of 0, a clip mask cannot restore their opacity.

- You can also define the color tolerance on the Tool Settings Palette.

- The greater the value selected with the Smoothing slider on the Tool Settings Palette, the more smoothly the surrounding colors blend with the transparent pixels.

Creating a clip mask

A clip mask lets you vary the transparency of pixels in an object without permanently affecting the object's pixels. You can create a clip mask from scratch to edit the transparency of the whole object or from a mask selection if to edit the transparency of only part of the object.

To create a clip mask that reveals the object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Choose an object from the Objects Palette.

3. Choose Object, Clip Mask, Create, To Show All.

- A separate thumbnail for the clip mask appears next to the object thumbnail and is surrounded by a red border.

To create a clip mask that hides the object

1. Follow steps 1 and 2 from the previous procedure.

2. Choose Object, Clip Mask, Create, To Hide All.

To create a clip mask from part of an object

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Select an object.

3. Open the Mask Tools flyout, and click a mask tool.

4. Specify the mask tool settings on the Property Bar.

5. Drag the mask tool to select part of the object.

6. Choose Object, Clip Mask, Create, From Mask.

7. Click a tool and edit the transparency of the pixels inside the selection.

- You can reverse the mask tool's effect by choosing Object, Clip Mask, Create, From Inverted Mask.

To create a mask selection on a clip mask

1. Follow steps 1 to 3 from the "To create a clip mask that reveals the object" procedure.

2. Open the Mask Tools flyout, and click a mask tool.

3. Specify the mask tool settings on the Property Bar.

4. Click and drag to select part of the object.

- You can also specify a mask tool's settings on the Tool Settings Palette.

- You can reverse the mask tool's effects by choosing Mask, Invert after creating the mask.

Editing the transparency of an object with a clip mask

You can edit the transparency of an object with a clip mask in the same way that you edit an object directly — using the tools and menu commands. When you apply an image-editing tool to a clip mask, it changes the transparency values of the image pixels directly behind the clip mask. Each time you apply an image-editing tool over the same area of a clip mask, these transparency values change accordingly.

To edit transparency with a clip mask

1. Choose Window, Palettes, Objects.

2. Choose the clip mask thumbnail for the object you want to edit from the Objects Palette.

3. Ensure that the plus sign (+) appears between the thumbnails for the object and the clip mask on the Objects Palette.

4. Do one of the following:

   - Open the Paint Tools flyout, and click the *Paint tool* to edit the transparency by applying brush strokes.

   - Open the Fill Tools flyout, and click the *Fill tool* to edit the transparency by adding a fill.

5. Specify the tool's settings on the Property Bar.

6. Do one of the following to edit the transparency of the associated clip mask:

   - Drag across the object with the Paint tool.

   - Click the object with the Fill tool.

7. Choose Object, Clip Mask, Combine.

- You can apply different tools and transparency values to the same clip mask, but you can edit only one clip mask at a time.

- You can only edit active clip masks. Active clip masks have a red border around their thumbnails in the Objects Palette.

- You cannot create a clip mask on the image background.

- You can link a clip mask to an object by enabling the Link Clip Mask check box in the Object Properties dialog box.

- You can also specify a tool's settings on the Tool Settings Palette.

Editing a clipping group with a clip mask

You can use a clip mask to edit the transparency of part of a clipping group and to reveal objects covered by those above them in the stacking order.

To edit a clipping group with a clip mask

1. Click and drag the child object onto the parent object in the Image Window.

2. Choose Window, Palettes, Objects.

3. Click the column on the left side of the child object on the Objects Palette.

4. Click the clip mask thumbnail on the Objects Palette to make it active.

5. Do one of the following:

   • Open the Paint Tools flyout, and click the *Paint tool* to edit the transparency by applying brush strokes.

   • Open the Fill Tools flyout, and click the *Fill tool* to edit the transparency by adding a uniform fill.

6. Specify the tool's settings on the Property Bar.

7. Do one of the following to edit the transparency of the child object's clip mask:

   • Drag across the clipping group with the Paint tool.

   • Click the clipping group with the Fill tool.

8. Choose Object, Clip Mask, Combine.

• You can link a clip mask to an object by enabling the Link Clip Mask check box in the Object Properties dialog box.

• If a clip mask is not linked to a child object, it does not move when you drag the child object onto its parent object. The changes you make to the clip mask are not apparent on the child object.

- You can also specify the tool settings on the Tool Settings Palette.

Disabling transparency changes on an object

When you change an object's transparency, you can create a clip mask to temporarily disable the effect on pixels that have a grayscale value of at least one. Pixels that have a grayscale value of zero are totally transparent and the clip mask cannot restore their opacity. You can cancel the transparency effect temporarily by disabling the clip mask, or permanently by removing it.

To temporarily disable transparency changes on an object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.
2. Choose the object's thumbnail from the Objects Palette.
3. Choose Object, Clip Mask, Create, From Object Transparency.
4. Choose Object, Clip Mask, Disable.

- When you disable a clip mask, a red X appears over its thumbnail on the Objects Palette. The transparency changes to the object disappear.

- When the clip mask is disabled, you can continue applying transparency changes to the object; however, you cannot apply transparency changes directly to the clip mask. When you remove the clip mask, you can keep the transparency changes with the object or discard them.

- You can restore transparency changes by choosing Object, Clip Mask, Disable again.

To remove transparency changes from an object

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.
2. Choose the object's thumbnail from the Objects Palette.
3. Choose Object, Clip Mask, Create, From Object Transparency.
4. Choose Object, Clip Mask, Remove.

- When you remove a clip mask, the transparency changes disappear from the Image Window, and the clip mask thumbnail disappears from the Objects Palette.

Editing text objects

In Corel PHOTO-PAINT, text is rendered as an object by default. An object transformation such as a change in transparency and size, can be applied to text in the same way that it is applied to objects.

You can also change the font, font size, style, justification, and character and line spacing. To perform these changes, you must select the text with the Text tool. When you select existing text with the Text tool, any changes made to the text with the image-editing tools are lost. Therefore, make changes with image-editing tools, special effects, or menu commands after you are satisfied with the appearance of the text.

Changing the text font size

You can change the size of the font you use to add text to your images.

To change the text font size

1. Click the *Text tool*.

2. Click inside the text to select it.

3. Click OK.

4. Type a size in the Font Size box on the Property Bar.

5. Click outside the text.

- If the text object is transformed with the object transformation handles or with an Effects or Image menu command, an alert informs you that the transformations will be lost if you proceed. Therefore, it is a good idea to make changes to the font size before editing the text with the image-editing tools and commands.

- If you size text using the Object Picker tool, the edges of the text often become jagged. To preserve the sharpness of the text's edges, change the font size on the Property Bar.

- You can also change the font size on the Tool Settings Palette.

Moving text

You can move text by dragging it with the Text tool or the Object Picker tool. When you click and drag a letter, the entire text object moves.

To move a text object with the Object Picker tool

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.
2. Click inside the text to select it.
3. Drag the text object to a new position.

To move a text object with the Text tool

1. Click the *Text tool*.
2. Click inside the text to select it.
3. Place the cursor on a border of the text frame.
4. Drag the frame to position the text in the Image Window.

• You can enable the Object, Marquee Visible command to surround each letter in the text object with a marquee when you select it with the Object Picker tool.

Justifying text

You can justify lines of text in an image so that they lie flush left, flush right, or are centered on the image.

To justify text

1. Click the *Text tool*.
2. Click the text object to select it.
3. On the Property Bar, click one of the following buttons:
   • *Left Align* — justifies the lines of text on the left
   • *Right Align* — justifies the lines of text on the right
   • *Center Text* — centers the lines of text on the image
4. Click outside the text.

- If the text object has been transformed with the object transformation handles or with an Effects or Image menu command, the transformations will be lost. Therefore, it is a good idea to justify the text before editing it with the image-editing tools and commands.

- The justification is based on the left edge of the first letter in the text — text shifts around that point.

- You can also select a text alignment option on the Tool Settings Palette.

Formatting text

You can assign various attributes to a text object, such as font style, font color and size, alignment, character spacing, and line spacing.

To format text

1. Click the *Text tool*.
2. Click inside the text to select it.
3. Specify the text attributes on the Property Bar.
4. Click outside the text.

- If the text object has been transformed with the object transformation handles or with an Effects or Image menu command, a message box informs you that the transformations will be lost if you proceed. Therefore, it is a good idea to format the text before editing it with the image-editing tools and commands.

- You can also specify the text attributes on the Tool Settings Palette.

Editing text

Text objects can be edited — just like any other object — using image-editing tools and menu commands.

To edit text

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Click inside the text to select it.

3. Click a tool in the Toolbox to edit the text object.

4. Specify the tool settings on the Property Bar.

5. Apply the tool to the text object in the Image Window.

• You can also specify the tool settings on the Tool Settings Palette.

Changing the color of text

A text object changes to the current paint color when you select it with the Text tool. If you want to vary the colors in the text object, you can select it with the Object Picker tool and edit it with the Paint or Fill tool.

To change the color of a text object

1. Click the *Text tool.*

2. Choose a color from the on-screen Color Palette.

3. Click inside the text to select it.

To change the color of some text in a text object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Click inside the text to select it.

3. Do one of the following:

   • Open the Paint Tools flyout, and click the *Paint tool.*

   • Open the Fill tools flyout, and click the *Fill tool.*

4. Specify the tool's settings on the Property Bar.

5. Choose a color from the on-screen Color Palette.

6. Choose Window, Palettes, Objects.

7. Enable the Lock Transparency check box on the Objects Palette.

8. Apply the tool to the parts of the text object containing the color you want to change.

• You can also specify the tool settings on the Tool Settings Palette.

RETOUCHING AND REFINING IMAGES 6

Whether you want to repair a damaged image area or improve the general quality of an entire image, Corel PHOTO-PAINT provides many powerful correction and enhancement features that assist you with your image-editing tasks. You can change an image's dimensions, resolution, or orientation; restore damaged images to their original quality; correct color, tone and focus; or combine images to create a panoramic effect. Use these correction and enhancement effects to create high-quality, professional artwork from existing images, or apply the effects to your new Corel PHOTO-PAINT projects.

Changing the dimensions, resolution, and orientation

If you decide to use an existing image as the basis for your Corel PHOTO-PAINT project, you can customize the dimensions, resolution, and orientation of the entire image or its components. Cropping lets you remove unwanted image areas without affecting the resolution or dimensions of the remaining components. Resampling lets you change the horizontal and vertical size of an image. Upsampling lets you increase the resolution of an image; downsampling lets you decrease its resolution. You can also change the resolution of an image by rescanning it into Corel PHOTO-PAINT at a higher resolution. Rotating and deskewing (straightening) let you adjust the physical orientation of an image or its components on your screen.

Restoring damaged images

Remove dust, scratches, and horizontal scan lines from existing images and repair the corrected areas using the Corel PHOTO-PAINT restoration effects. Used in combination with the mask selection tools, the Dust And Scratch dialog box, Undither tool, and Deinterlace dialog box let you correct common surface damages without altering other image components.

Adjusting the focus and grain

You can adjust the focus and grain of your images to improve their quality or to create exciting visual effects. Use the Blur Control, Sharpness Control, and Noise Control dialog boxes to soften or sharpen an image's focus and adjust the amount of noise it contains. You can also use the Sharpen and Smear tools to sharpen or soften selected areas in your image.

Adjusting color and tone

Using the Corel PHOTO-PAINT color- and tone-correction effects, you can enhance or modify an image or its components. Whether you want to adjust the color balance, hue, saturation, or lightness values of an image or modify the brightness, contrast, and intensity of image tones, Corel PHOTO-PAINT provides many tools and effects that let you make quick corrections. You can also use these tools to control the relationship of the shadows, midtones, and highlights in your images. You can apply color and tone corrections to particular areas of your image using the Corel PHOTO-PAINT lenses. For more information about lenses, see "Working with lenses" on page 265. If a lens is not available for the particular correction that you want to make, you can define the area with a mask. For more information about masks, see "Using masks to make selections" on page 57.

Changing image dimensions and resolution

You can use Corel PHOTO-PAINT to change an image's physical dimensions or its file size (i.e., the amount of space the image takes up on your hard disk). Resize or resample your image as you open it or at any other time when you are editing it in Corel PHOTO-PAINT.

Cropping images

Cropping cuts away selected areas on an image without affecting the resolution or dimensions of the areas that remain. You can crop an image to remove unwanted edges or to isolate a single object in a larger image. You can also crop around a mask selection or border in your image to create irregularly shaped bitmaps for use as fills or objects in other images. You can crop using the Deskew Crop tool or by typing absolute values on the Property Bar or on the Tool Settings Palette for the Deskew Crop tool.

Changing dimensions

In Corel PHOTO-PAINT, you can change the size of an image or the size of the paper behind the image. When you resize an image, you change the vertical and horizontal dimensions of the image to increase or decrease its size. When you resize the paper, you change the vertical and horizontal dimensions of the printable area without actually changing the image's size.

Changing image resolution

You can change the resolution of an image using two methods: upsampling and downsampling. Upsampling increases the image's resolution by adding more pixels per unit of measurement. Downsampling decreases the image's resolution by removing a particular number of pixels per unit of measurement. Because upsampling adds pixels, it can reduce the quality of the image. In Corel PHOTO-PAINT, downsampling provides much better results than upsampling. If you need to increase the resolution of an image, rescan the original image at a higher resolution.

Cropping an image

When you crop an image, you cut away parts of the image without affecting its resolution or the remaining image areas. You can crop an image directly in the Image Window, or you can define the precise size of the cropping area.

You can crop an image in the Image Window. Cropping lets you cut part of an image away from the rest of the image.

To crop an image

1. Click the *Deskew Crop tool*.

2. Select an area on the image.

3. Drag the selection handles to fine-tune the cropping area.

4. Double-click inside the selection.

To size the cropping area

1. Click the Deskew Crop tool.

2. Select an area on the image.

3. Type values in the Crop Size boxes on the Property Bar to specify the size of the cropped area.

4. Type values in the Crop Edges boxes on the Property Bar to specify the position of the cropped area in the Image Window.

5. Double-click inside the selection.

- You can also hold down Control, click inside the selection, and choose Crop To Selection to crop the image.

- You can crop an image as you open it. Choose Crop from the pop-up menu to the right of the Format pop-up menu and click Open to define the cropping area.

Cropping the border color

You can crop the border color that surrounds an image. The border color can be the paper color, the paint color, or any other color.

To crop the border color

1. Choose Image, Crop, Border Color.

2. Enable one of the following buttons:
   - Paper — crops the color specified in the Paper color swatch on the Status Bar
   - Paint — crops the color specified in the Paint color swatch on the Status Bar
   - Other — lets you choose a color to crop

3. In the Tolerance section, enable one of the following buttons:
   - Normal — determines the color tolerance based on the similarity of hue values between adjacent pixels
   - HSB Mode — determines the color tolerance based on the similarity of hue, saturation, and brightness levels between adjacent pixels

4. Move the tolerance slider(s) to set a tolerance value for the color that you are cropping.

- You can also open the Crop Border Color dialog box by clicking the Crop To Border button on the Property Bar for the Deskew Crop tool.

- If you enable the Other button in the Crop Border Color dialog box, you can click the Other color picker and choose a color, or you can use the Eyedropper tool to choose a color from the image.

Cropping around a selection

When you crop around a selection, the resulting image is rectangular, based on the maximum rectangular dimensions of the selection.

Cropping an image around a mask lets you cut the selected area away from the rest of the image.

To crop around a selection

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Image, Crop, To Mask.

- You can also crop around a selection by clicking the Crop To Mask button on the Property Bar for the Deskew Crop tool.

Changing an image's dimensions

You can change an image's dimensions by increasing or decreasing its width and height in Corel PHOTO-PAINT.

To change an image's dimensions

1. Choose Image, Resample.

2. Type a value in the Width box.

3. Type a value in the Height box.

4. Choose a unit of measurement from the pop-up menu beside the Width and Height boxes.

- You can maintain the width to height ratio by enabling the Maintain Aspect Ratio check box. You can then type a value in the Width box to update the Height value automatically.

- You can decrease an image's dimensions as you open it. Choose Resample from the pop-up menu to the right of the Format pop-up menu and click Open to define the image's width and height in the Resample Image dialog box.

Changing the paper size

You can change the paper size to increase or decrease the size of the paper-colored border that surrounds an image in the Image Window.

To change the paper size

1. Choose Image, Paper Size.

2. Choose a unit of measurement from the pop-up menu beside the Width and Height boxes.

3. Type a value in the Width box.

4. Type a value in the Height box.

5. Choose a position for the image from the Placement pop-up menu.

6. Click the Paper Color picker, and choose a color.

- You can also drag the image to a new position in the preview window at the top of the Paper Size dialog box.

- You can maintain the width to height ratio by enabling the Maintain Aspect Ratio check box in the Paper Size dialog box. You can then type a value in the Width box to update the Height value automatically.

Changing an image's resolution

You can change the vertical and horizontal resolution to improve an image's quality. When you change an image's resolution, you increase or decrease the actual size of the file.

To change an image's resolution

1. Choose Image, Resample.

2. Type a value in the Horizontal box.

3. Type a value in the Vertical box.

• If an image's size is specified in pixels and you change its resolution using the Resample dialog box, the actual size of the file does not change.

• If you enable the Identical Values check box in the Resample dialog box, the value in the Vertical box automatically updates to match the value in the Horizontal box. The Identical Values check box is not available if the Maintain Aspect Ratio check box is enabled.

• You can enable the Anti-Alias check box to smooth the edges of the objects in your image as they are resampled.

• You can also change an image's resolution as you open it. Choose Resample from the pop-up menu to the right of the Format pop-up menu and click Open to define the image's vertical and horizontal resolution.

• You can change an image's resolution without changing the size of the file by enabling the Maintain Original Size check box in the Resample dialog box.

• You can enable the Maintain Aspect Ratio check box to change the horizontal and vertical resolution values proportionally.

Changing image orientation

You can change the orientation of images in Corel PHOTO-PAINT by flipping, rotating, or straightening images in the Image Window. If you are working with multiple images, you can stitch them together.

Flipping and rotating images

When you flip images, you mirror their appearance horizontally or vertically in the Image Window. Flipping can be used to reposition images that you scan into Corel PHOTO-PAINT or to create unique effects in custom images.

If you want to rotate an image, you can specify the angle and direction of rotation, as well as the paper color that is visible after the rotation. When you custom rotate an image, it is automatically maximized in the Image Window;

however, you can enable the Maintain Original Image Size check box to maintain the original size of the image throughout the rotation.

Straightening crooked images

You can straighten crooked images using the Deskew Crop tool and the Deskew command. The Deskew Crop tool lets you manually straighten a crooked image using absolute values. The Deskew command automatically places crooked images squarely in the Image Window. Deskewing works best on four-sided images that have well-defined edges.

Stitching images together

You can stitch images together to create a panoramic effect. Whether you are working with multiple, overlapping images or reassembling a large image that was scanned in several pieces, the Corel PHOTO-PAINT stitching effect gives your photos a seamless appearance.

When you stitch images together, you can specify the order and position of the final images. The order determines the order in which a range of images are stitched together. The position determines whether the images are stitched from top to bottom or from side to side. You can also edit any overlapping image areas created by the stitching process. Editing overlapping areas lets you create a seamless, natural appearance in the final stitched image.

Flipping an image

You can flip images horizontally or vertically in the Image Window.

You can mirror images by flipping them in the Image Window.
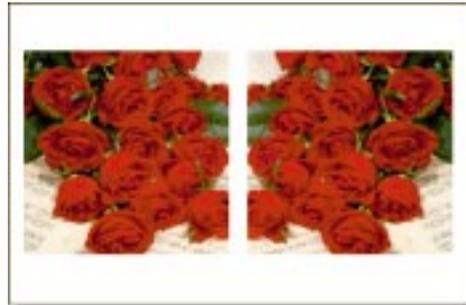
To flip an image horizontally

- Choose Image, Flip, Horizontally.

To flip an image vertically

- Choose Image, Flip, Vertically.

Rotating an image

You can rotate images by a preset amount, or you can specify the precise angle and direction of rotation.

To rotate an image 90° clockwise

• Choose Image, Rotate, 90° Clockwise.

To rotate an image 90° counterclockwise

• Choose Image, Rotate, 90° Counterclockwise.

To rotate an image 180°

• Choose Image, Rotate, 180°.

To customize the rotation angle

1. Choose Image, Rotate, Custom.

2. Type a value in the Angle box.

3. Enable one of the following buttons:

   • Clockwise — rotates your image in a clockwise direction

   • Counter-Clockwise — rotates your image in a counterclockwise direction

4. Do any of the following:

   • Enable the Maintain Original Image Size check box to retain the size of the original image.

   • Enable the Anti-Aliasing check box to prevent jagged edges.

   • Click the Paper Color picker, and choose a color for the background that appears when the image is rotated.

Deskewing an image

Deskewing straightens crooked images in the Image Window. You can
straighten an entire image or part of an image using the Deskew Crop tool.
When you deskew part of an image, the image is cropped to the area that you
are deskewing.

To deskew an entire image

• Choose Image, Deskew.

To deskew part of an image

1. Click the *Deskew Crop tool*.

2. Select an area on your image.

3. Choose Window, Palettes, Tool Settings.

4. Choose Rotate from the pop-up menu at the top of the Tool
   Settings Palette.

5. Type a value in the Origin From Left box to specify the position of the
   selection from the left side of the Image Window.

6. Type a value in the Origin From Top box to specify the position of the
   selection from the top of the Image Window.

7. Type values in the Width and Height boxes to specify the size of
   the selection.

8. Type a value in the Rotation Angle box to rotate or deskew the selection.

9. Double-click inside the selection.

• If an image contains objects that have not been merged with the
  background, the objects are not deskewed. For more information about
  merging objects with the background, see "Grouping and combining
  objects" on page 209.

• You can also hold down Control, click inside the selection, and choose
  Crop To Selection to deskew the image.

• You can choose a unit of measurement for the origin and size of the image
  from the HUnits and VUnits pop-up menus on the Tool Settings Palette
  for the Deskew Crop tool.

Stitching images together

You can merge two or more images to create a panoramic effect. You must open the images in Corel PHOTO-PAINT before you can stitch them together.

An image has been mirrored or flipped in the Image Window.

The flipped images have been stitched together to create a panoramic effect.
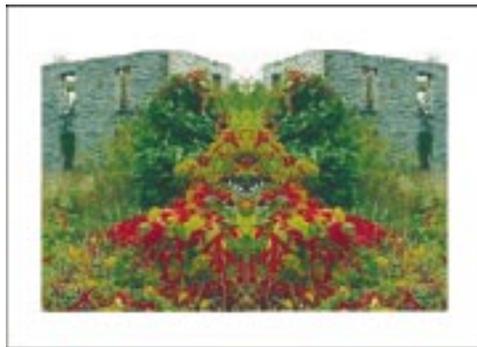
To stitch images together

1. Choose Image, Stitch.

2. Do one of the following:

   • Choose the images that you want to stitch together from the Source Files list, and click the Add button.

   • Click the Add All button to stitch together all the images in the Source Files list.

3. Click one of the following alignment buttons:

   • *Vertical* — stitches the images together vertically.

   • *Horizontal* — stitches the images together horizontally.

4. Click the *Order button* to change the order of the images.

5. Click OK.

6. In the Edit Overlap dialog box, choose One from the Overlap pop-up menu to edit the overlap between the images.

7. Move the Vertical slider to adjust the vertical overlap.

8. Move the Horizontal slider to adjust the horizontal overlap.

• The Stitch command is only available for 24-bit RGB images.

• You can enable the Create Objects check box in the Edit Overlap dialog box to create an object from the stitched image. This lets you make fine adjustments to the composite object in the Image Window.

Restoring damaged images

You can restore damaged images to their original appearance by removing surface scratches, tears, or dust particles or by removing lines that appear when images are improperly scanned into Corel PHOTO-PAINT.

Removing dust and scratches

The Dust And Scratch dialog box reduces the amount of noise in an image. You can eliminate dust and scratch damage. You can also remove these and other surface damage using the Undither tool.

Removing scan lines

The Deinterlace dialog box removes even or odd horizontal lines from scanned or interlaced video images. You can fill the spaces left by the discarded lines in two ways: by filling in the spaces with copies of the adjacent lines of pixels (duplication) or by filling them in with colors created by averaging the surrounding pixels (interpolation).

Cloning objects

The Clone tool lets you fill in missing image areas with pixel information taken from other areas or from a different image. Use the Clone tool to repair rips, tears, and holes, in your images. The Clone tool is a brush tool, which means that you can adjust the size, shape, and texture of the nib you use to apply it. For more information about brush tools, see "Painting, filling, and editing images" on page 125.

Removing dust marks and scratches

You can remove the dust marks and scratches that can appear on old images which have been scanned into Corel PHOTO-PAINT. Dust and scratch damage can be repaired in an entire image or in part of an image using a mask. You can also repair dust and scratch damage directly in the Image Window using the Undither tool.

Dust and scratch damages have been removed from the original image.

To fix dust and scratch damage in an entire image

1. Choose Effects, Noise, Dust And Scratch.

2. Move the Threshold slider to reduce image noise.

3. Move the Radius slider to set the range of pixels used to produce the effect.

To fix dust and scratch damage in part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Follow steps 1 to 3 from the previous procedure.

To fix dust and scratch damage in the Image Window

1. Open the Effect Tools flyout, and click the *Effect tool*.

2. Choose the *Undither tool* from the Effect Tool picker on the Property Bar.

3. Choose a brush from the Brush Type pop-up menu on the Property Bar.

4. Click and drag across the damaged area.

Repairing tears, creases, and holes

You can repair the tears, creases, and holes that can appear on old images which were scanned into Corel PHOTO-PAINT, by replacing the damaged area with information cloned from other areas in the same image.

To repair tears, creases, rips, and holes

1. Open the Paint Tools flyout, and click the *Clone tool*.

2. Choose a brush from the Brush Type pop-up menu on the Property Bar.

3. On the Property Bar, enable one of the following buttons:

    • Round Nib — creates a round nib shape

    • Square Nib — creates a square nib shape

4. Choose a nib from the Nib Shape pop-up menu on the Property Bar.

5. Move the Nib Size slider on the Property Bar to adjust the size of the nib.

6. Type a value in the Transparency box on the Property Bar to set the transparency.

7. Click the image to set the source point for the cloning operation.

8. Drag across the damaged area to replace the pixels.

• Hold down Command while dragging to constrain the movement of the source point. Press Command+Shift to change the direction of the constraint. Hold down Shift while dragging to resize the nib.

• You can hold down Option and click at any time during the cloning operation to reset the source point.

Removing scan or video interlace lines

You can remove horizontal lines from scanned images. You can also use the Deinterlace dialog box to remove interlace lines from video captures.

To remove scan or interlace lines

1. Choose Image, Transform, DeInterlace.

2. In the Scan Lines section, enable one of the following buttons:

    • Even Lines — removes even lines

    • Odd Lines — removes odd lines

3. In the Replacement Method section, enable one of the following buttons:

    • Duplication — fills in the spaces with copies of the adjacent lines of pixels

    • Interpolation — fills in the spaces with colors created by averaging the surrounding pixels

• You can click the Reset button in the Deinterlace dialog box to return to the default values.

Adjusting the focus and grain

You can improve or distort the appearance of images in Corel PHOTO-PAINT by adjusting their focus and grain. The focus can be blurred or sharpened and the graininess can be increased or decreased to create unusual effects.

The image adjustment effects in the Effects menu let you adjust the overall appearance and quality of your Corel PHOTO-PAINT image. You can use the Blur Control dialog box to blur the focus, the Sharpness Control dialog box to sharpen the focus, and the Noise Control dialog box to increase or decrease the graininess of your image. You can also sharpen the focus of an image by increasing its edge detail.

Blurring the focus

You can adjust the softness of an image's focus by choosing sample thumbnail buttons in the Blur Control dialog box. The thumbnail buttons let you preview the appearance of the image as different blur techniques are applied. The intensity of the effect increases each time you click the button.

The motion blur effect has been applied to create the illusion of motion in the image.

To blur the focus

1. Choose Effects, Adjust, Blur.

2. Move the Step slider to set the intensity of the blurring effect.

3. Click the direction dial to specify a direction for the blurring effect.

4. Click one of the following thumbnail buttons:

   • Gaussian Blur — produces a hazy effect, slightly blurring the image

- Motion Blur — creates the illusion of movement in your image

- Smooth — blends the colors of adjacent pixels

- Directional Smooth — analyzes the values of similarly colored pixels to determine the direction in which to apply the greatest amount of smoothing

- Soften — smoothes and tones down harsh contrasts

- You can also adjust the intensity and direction of the blurring effect by typing values in the Step and Direction boxes.

- If you make a mistake when blurring the focus of your image, you can undo the effect by clicking the Undo button in the Blur Control dialog box. Click the Reset button to undo all operations that you've performed in the Blur Control dialog box.

- You can also blur the focus of an image using the Smear tool. For more information about smearing paint, see "Smearing, smudging, and blending paint" on page 183.

Sharpening the focus

You can sharpen your image's focus by increasing the contrast where colors or shades intersect. The thumbnail buttons in the Sharpness Control dialog box let you preview the appearance of the image as different sharpening techniques are applied. The intensity of the effect increases each time you click the button.

You can bring blurred images into focus by sharpening them.
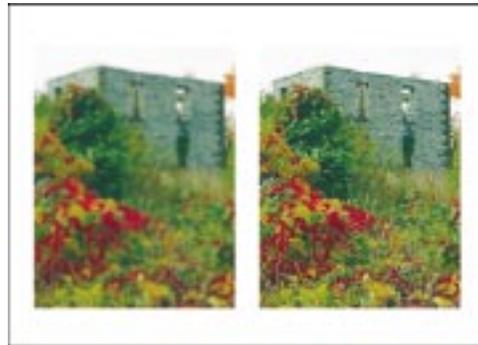
To sharpen the focus

1. Choose Effects, Adjust, Sharpness.

2. Move the Percentage slider to set the intensity of the sharpening effect.

3. Move the Background slider to determine the amount by which a given pixel's value must change before the effect is applied.

4. Click one of the following thumbnail buttons:

  • Unsharp Mask — accentuates edge detail and sharpens smooth areas

  • Adaptive Unsharp — accentuates edge detail without affecting the rest of the image

  • Sharpen — sharpens the overall focus of an image

  • Directional Sharpen — analyzes similarly colored pixels to determine the direction in which to apply the greatest amount of sharpening

  • Find Edges — sharpens the outlines of your image

• You can also adjust the intensity and background of the sharpening effect by typing values in the Percentage and Background boxes.

• If you make a mistake when sharpening the focus of your image, you can undo the effect by clicking the Undo button in the Sharpness Control dialog box. Click the Reset button to undo all operations that you've performed in the Sharpness Control dialog box.

• You can also sharpen the focus of an image using the Sharpen tool.

Adjusting graininess

You can adjust the graininess of your image by applying the noise effects. Graininess or noise gives a rough, pixelated appearance to your images. The thumbnail buttons let you preview the appearance of the image as different noise effects are applied. The intensity of the effect increases each time you click the button.

The rough, pixelated appearance of a grainy image has been removed by adjusting its noise level.

To adjust graininess

1. Choose Effects, Adjust, Noise.

2. Move the Level slider to set the intensity of the effect.

3. Move the Density slider to set the quantity of noise added per unit of area.

4. Click one of the following thumbnail buttons:

   - More Spike — produces a thin, light-colored grain using colors that are distributed around a narrow curve

   - More Gaussian — prioritizes colors along a Gaussian curve

   - More Uniform — adds colors randomly to produce an overall granular appearance

   - Diffuse — distributes colors randomly to create a smooth appearance

   - Minimum — darkens an image

   - Median — removes noise from scanned images that have a grainy appearance

   - Maximum — lightens an image without removing image detail

   - Jaggy Despeckle — distributes colors randomly to produce a soft, blurred effect with minimal distortion

   - Remove Noise — softens the edges of the image and reduces the pixelated effect that can occur during scanning

- You can also adjust the intensity and quantity of noise by typing values in the Level and Density boxes.

- If you make a mistake when adjusting the graininess of your image, you can undo the effect by clicking the Undo button in the Noise Control dialog box. Click the Reset button to undo all operations that you've performed in the Noise Control dialog box.

- You can also adjust the graininess of an image using the Smudge tool. For more information about smudging paint, see "Smearing, smudging, and blending paint" on page 183.

Increasing edge detail

You can sharpen the focus of an image by increasing its edge detail. Only those pixels with a grayscale value that is higher than the threshold value you specify are affected.

To increase edge detail

1. Choose Effects, Sharpen, Unsharp Mask.

2. Move the Percentage slider to set the intensity of the sharpening effect.

3. Move the Radius slider to specify how many pixels are evaluated at once.

4. Move the Threshold slider to specify how many pixels are affected.

- You can also type values in the Percentage, Radius, and Threshold boxes to specify the intensity and scope of the effect.

Adjusting image color and tone

In Corel PHOTO-PAINT, you can adjust the colors and tones in images. Color and tonal adjustments can be made to an entire image or to part of an image using lenses.

Selecting image areas using lenses

You can use lenses to apply color and tonal corrections to specific image areas. When you create a color or tonal lens on an image, the effect that you create is not actually applied to the image pixels. Instead, the lens lets you view the result of an effect without permanently altering the image pixels.

Changing image color

You can improve the quality of images by changing their colors. Corel PHOTO-PAINT provides a variety of tools and image effects that you can use to change the hue, saturation, lightness, balance, mixture, and behavior of the colors in your images. You can apply each of these effects to the entire image or to part of the image using lenses.

Changing image tone

Another way to improve the quality of images is to change their tonal values. Corel PHOTO-PAINT provides a variety of tools and effects that you can use to change the shadows, midtones, and highlights in your images. You can also apply each of these effects to the entire image or to part of the image using lenses.

Working with lenses

Whether you are correcting images by adjusting their color and tone or enhancing images by applying exciting special effects, you can use lenses to preview the changes you make. Lenses are special objects that let you view

the special effects, corrections, or adjustments that you want to make to your image before you apply them to the image pixels. You can create several different lens types and view them in succession by changing their position and order on the Objects Palette.

Creating lenses

There are two ways to create a lens: from scratch or from a mask. When you create a lens from scratch, it covers the entire image. When you create a lens from a mask, it covers the selected area on the image. You can choose a lens type based on the effect that you want to create. Lens types correspond to the adjustment and correction effects in the Image menu and the special effects in the Effects menu. The types of lenses that you can create are determined by the image's color mode. For example, you cannot create a Replace Color lens on a grayscale image because there are no colors to replace. After you create a lens, you can transform it and combine it with an image.

Selecting and transforming lenses

You can select and transform lenses in the same way that you can select and transform objects. Use the Object Picker tool to select and then move, size, scale, skew, rotate, distort, and apply perspective to lenses directly in the Image Window. You can also apply these transformations using the controls on the Tool Settings Palette or on the Property Bar for the Object Picker tool. For more information about selecting and transforming objects, see "Working with text and objects" on page 189.

A lens differs from objects because there is a clip mask associated with it. When you alter the size or shape of a lens using the Object Picker tool, only the associated clip mask is affected. You can create as many lenses as you want in an image and assign a unique name to each. New lenses appear on the Objects Palette at the top of the stacking order and as clip masks on the Channels Palette.

After you create a lens on an image, you can add or remove lens areas using brushes and spray tools. You can also modify the transparency of the lens, change its properties, or reshape a lens using the special effect filters.

Combining a lens with an image

Once you are satisfied with the appearance of your image on screen, you can combine the lenses with your image to apply the effects permanently. When you combine a lens with an image's background, you can use any merge mode to control the result of the operation. The Normal merge mode combines the lenses with the background while accurately preserving the appearance of the image as it was viewed through the lenses. If you use a merge mode other than Normal, the results can be unpredictable. Combining a lens with the image background reduces the file size and lets you save the

image in a variety of different file formats. If you save an image as a Corel PHOTO-PAINT file, lenses are saved with the image and do not have to be combined. For more information about lenses, see "Applying special effects to images" on page 365.

Creating lenses

There are two ways to create lenses: from scratch or from a mask. When you create a lens from scratch, it covers the entire surface of the image. After you create the lens, you can change its size and shape in the same way that you change the size and shape of an object. When you create a lens from a mask, the lens covers a selected area on the image. The selected area is converted to a lens and the mask is removed from the image. For more information about masks, see "Using masks to make selections" on page 57.

To create a lens from scratch

1. Choose Object, Create, New Lens.

2. Choose a lens from the Lens Type list.

3. Click OK.

4. Set the lens properties in the dialog box.

To create a lens from a mask

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Repeat steps 2 to 4 from the previous procedure.

• If you create an Invert or Desaturate lens, you cannot set the lens properties.

• For more information about setting lens properties, see "Changing the lens properties" on page 269.

- You can assign a name to a lens by typing the name in the Lens Name box at the bottom of the New Lens dialog box. You can enable the Change Name With Type check box to assign a different name to each type of lens you create.

- To modify two separate areas in an image, select the first area, enable the Additive button on the Property Bar, then select the second area.

Selecting lenses

Lenses can be selected with the Object Picker tool. When you select a lens directly in the Image Window, it is surrounded by selection handles. You must select a lens before you can edit or transform its size and shape.

Lenses can be selected directly in the Image Window. After you select a lens you can edit or transform it.
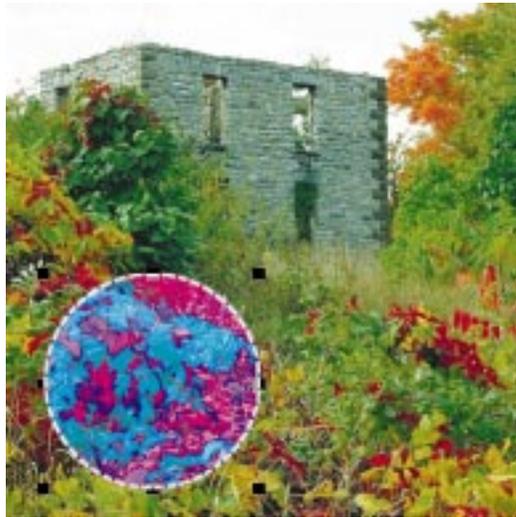
To select a lens

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Click the lens in the Image Window.

- You can also select a lens using the Objects Palette or the Channels Palette. Lenses are identified by a text string that describes the type of lens that is applied to the image. When selected, the lens thumbnail is framed in red and selection handles surround it in the Image Window.

Changing the lens properties

You can experiment with different types of lenses and effects by changing the lens properties. If you want to fine-tune the effect that a particular lens type has on your image, you can adjust the lens properties and view the results directly in the Image Window.

To change the properties of a lens

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select a lens.

3. Choose Object, Edit Lens.

4. Edit the lens properties in the dialog box.

- If you create a Desaturate or Invert lens, you cannot change the lens properties.

Moving a lens

You can move a lens to a new location in the Image Window. When you move a lens, its effect can be viewed dynamically as it moves across the image.

The lens effect can be viewed dynamically as you move the lens across the image.

To move a lens

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select a lens.

3. Drag the lens to a new location in the Image Window.

Adding and removing area from a lens

You can add or remove area from a lens to customize the size and shape of the image area that displays the lens effect. The brush tools let you add area to a lens and the Eraser tool lets you remove area from a lens.

To add area to a lens

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*
2. Select a lens.
3. Click a brush tool.
4. Set the attributes for the brush tool on the Property Bar.
5. Drag across the areas that you want to add to the lens.

To remove area from a lens

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.
2. Select a lens.
3. Click the *Eraser tool.*
4. Set the attributes for the Eraser tool on the Property Bar.
5. Drag across the areas that you want to remove from the lens.

- You can also set a tool's attributes on the Tool Settings Palette for the active tool.

Changing the shape and transparency of a lens

You can change the shape of a lens by applying a special effects filter to it. Because some special effects filters create better results when used with lenses of a particular shape, you must experiment with the effects to achieve the best results for your images. Once you are satisfied with the shape of a lens, you can increase or decrease its transparency to mute or enhance the effect it has on an image.

To change the shape of a lens using a special effects filter

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*
2. Select a lens.

3. Choose a special effects filter from the Effects menu.

4. Experiment with the controls in the special effects dialog box and preview your changes.

To change the transparency of a lens

1. Open the Object/Mask Tools flyout, and click the Object Picker tool.

2. Select a lens.

3. Choose Window, Palettes, Objects.

4. Move the Opacity slider at the bottom of the Objects Palette.

• The Opacity slider is not available for 1-bit black-and-white images.

Combining a lens with an image

When you are satisfied with the effect that a lens creates on an image, you can combine the lens with the image background. This applies the lens effect to the image permanently and reduces the file size of the saved image.

Combining the lens with the image background permanently applies the effect to the image.
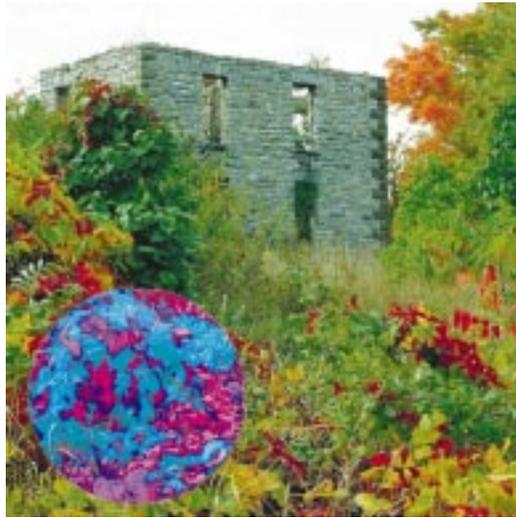
To combine lenses with the image

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool*.

2. Select a lens.

3. Choose Normal from the Merge pop-up menu on the Property Bar.

4. Choose Object, Combine, Combine Objects With Background.

• If you save your image as a Corel PHOTO-PAINT file, you do not have to combine the lens with the image to preserve its effect. Lenses are automatically saved with Corel PHOTO-PAINT files.

• You can choose Object, Combine, Combine All Objects With Background to combine all lenses and objects in the active image with the image background.

Correcting and adjusting image color

You can improve the quality of an entire image or of specific image areas by correcting and adjusting colors. If you want to correct and adjust the colors of a specific image area without affecting the rest of the image, you can create a lens that defines the area and apply the color correction to the lens. For more information about lenses, see "Working with lenses" on page 265. Corel PHOTO-PAINT lets you correct and adjust image color using a variety of tools and commands.

Sample/Target Balance

The Sample/Target Balance dialog box lets you color correct an image by shifting color values from a sample color to the target color you select from a color model. You can choose sample colors from the low-point, mid-point, and high-point ranges of color in the image. The low-point range refers to the shadows in the image; the mid-point range refers to the midtones in the image; and the high-point range refers to the highlights in the image.

Color Balance

The Color Balance dialog box lets you adjust the mixture of colors in an image, allowing you to shift colors between CMY color values and RGB color values. For example, if you want to tone down the red color in a photo, you can select the area you want to adjust and shift the color values from red to cyan. This is useful for correcting color casts. You can also change the hue values to adjust the colors used throughout the entire image.

Hue/Saturation/Lightness

The Hue/Saturation/Lightness dialog box lets you adjust the image's hue, saturation, and lightness values — all at once or channel by channel. When

you adjust the hue, saturation, and lightness values of the colors in an image, you adjust the color intensity by altering the richness and white values or by changing the color entirely. Hue represents color, saturation represents color depth or richness, and lightness represents the overall percentage of white in an image.

Selective Color

The Selective Color dialog box lets you perform color modifications by adjusting the percentage of the component process colors (CMYK values) in a color spectrum option (reds, yellows, greens, cyans, blues, magentas). It can also be used to add process color to the grayscale tonal component of an image. Selective color modifications increase and decrease the percentage of cyan, magenta, yellow, and black pixels that make up each primary color in the color spectrum. For example, decreasing the percentage of magenta in the reds spectrum results in a color shift toward yellow. Conversely, increasing the percentage of magenta in the reds spectrum causes a color shift toward magenta and an increase in overall red.

The extent of any color modification depends largely on the adjustment percentage method you select. The Relative method adds or removes a percentage of the process color to or from the selected color spectrum. For example, adding 10% magenta to a 50% red pixel results in an adjustment of + 5%. The Absolute method adds or removes the absolute value of the process color to or from the selected color spectrum. For example, adding 10% magenta to a 50% red pixel results in an adjustment of + 60%.

Replace Colors

The Replace Colors dialog box lets you replace one image color with another color. Depending on the range you set, you can use the Replace Colors dialog box to replace a single color or to shift the entire image from one color range to another.

Desaturate

The Desaturate command automatically reduces the saturation of each color to zero, removes the hue component and converts each color to its grayscale equivalent. This creates a grayscale image without actually changing the color mode.

Color Hue Control

The Color Hue Control dialog box provides a visual representation of your image using thumbnail images that show how the image will look with the addition of a particular color hue. Apply the change by choosing the thumbnail that best represents the change you want to make.

Invert

The Invert command automatically inverts the colors in an image. Invert an image to create the appearance of a color photographic negative.

Posterize

The Posterize dialog box lets you reduce the number of tonal values in the colors used to create an image. All existing colors are then mapped to the closest match. This process removes tonal gradations and creates larger areas of flat color.

Threshold

The Threshold dialog box lets you set a specific brightness value as a threshold for change. Pixels with brightness values above the threshold value are displayed in white or black, depending on the threshold option you select. Other pixels are not affected and preserve their color. The Bi-Level option changes all pixels to either black or white, according to the position of their brightness value in relation to the threshold you set. You can set an image-wide threshold or a threshold for a specific color channel.

Adjusting color values

You can adjust color values in an image with sample colors that are taken directly from the image or from the image area that you want to correct. After you choose samples from the shadow (low-point), midtone (mid-point), and highlighted (high-point) ranges of color in your image, you can choose the target colors for each range. The pixels in the image or image area that have the same color as the sample colors are adjusted to display the corresponding target color. You can adjust the colors of an entire image or of part of an image using a lens.

The Sample/Target effect has been used to adjust the shadows, midtones, and highlights in the image.

To adjust the color values of an entire image

1. Choose Image, Adjust, Sample/Target Balance.

2. Choose a color channel from the Channel pop-up menu.

3. Do one of the following:

   - Click the *Low-Point Eyedropper tool,* and choose a point of dark color in the image.

   - Click the *Mid-Point Eyedropper tool,* and choose a point of medium color in the image.

   - Click the *High-Point Eyedropper tool,* and choose a point of highlighted color in the image.

4. Double-click the target color for the specified color range.

5. In the Select Color dialog box, choose a target color, and click OK.

   All colors at or below the sample color's level of darkness are shifted in the direction of the target color.

6. Enable the Clip Automatically check box to set the range of the histogram display and to ensure that all spikes in the histogram fit on the chart.

To adjust the color values of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Sample/Target Balance from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 6 from the previous procedure.

- The color channels that appear in the Channels pop-up menu depend on the image's color mode. There is one composite channel and one channel for each color component.

- If the Clip Automatically check box is disabled, you can type a value in the Clipping box to determine the percentage of brightness values that are ignored when identifying the light and dark colors in the histogram.

- You can enable the Always Adjust All Channels check box to adjust all color channels — even when you are viewing an individual color channel.

Adjusting color balance

You can adjust the color balance in an image by shifting the colors between complementary pairs of the primary (RGB) and secondary (CMY) colors. Adjusting color values in this way is useful for correcting color casts. For example, if a color appears too red, you can shift its values from red (RGB) to cyan (CMY). You can adjust the color balance of an entire image or of part of an image using a lens.

The Color Balance effect has been used to shift the colors in the image.

To shift the color balance of an entire image

1. Choose Image, Adjust, Color Balance.

2. In the Range section, enable the check boxes that correspond to the color ranges that you want to adjust.

3. In the Color Channel section, move any of the following sliders:

   • Cyan-Red — sets color levels for the Cyan and Red color channels

   • Magenta-Green — sets color levels for the Magenta and Green color channels

   • Yellow-Blue — sets color levels for the Yellow and Blue color channels

To shift the color balance of part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Color Balance from the Lens Type list.

5. Click OK.

6. Follow steps 2 and 3 from the previous procedure.

- You can also adjust the color balance by typing values in the Cyan-Red, Magenta-Green, and Yellow-Blue boxes in the Color Balance dialog box.

- If you do not want to affect the brightness levels when adjusting the color balance, enable the Preserve Luminance check box in the Color Balance dialog box.

Adjusting hue, saturation, and lightness

Adjusting the hue, saturation, and lightness values of the colors in an image, lets you adjust the color intensity by altering the richness and white values or by changing the color entirely. You can adjust the hue, saturation, and lightness of an entire image or of part of an image using a lens. You can also adjust these values across all color channels or in individual color channels.

The Hue/Saturation/Lightness effect has been used to change the colors in the image.

To adjust the hue, saturation, and lightness of an entire image

1. Choose Image, Adjust, Hue/Saturation/Lightness.

2. In the Channels section, enable the button that corresponds to the color channel that you want to adjust.

3. Move the Hue slider to shift the image's color.

4. Move the Saturation slider to set the color strength.

   Saturation values range from -100 to 100, with -100 resulting in grayscale images and 100 resulting in unnaturally vibrant colors.

5. Move the Lightness slider to determine the amount of white (positive values) or black (negative values) in the colors.

To adjust the hue, saturation, and lightness of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Hue/Saturation/Lightness from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 5 from the previous procedure.

• If you enable the MASTER button in the Hue/Saturation/Lightness dialog box, the changes you make have an overall effect on all the color channels in the image. Enabling an individual color channel button lets you make finer color adjustments.

• You can compare the original colors and the new colors in the Color Preview section of the Hue/Saturation/Lightness dialog box.

• You can add color to a grayscale image by enabling the Grayscale button in the Hue/Saturation/Lightness dialog box and moving the Saturation slider. Adjust the hue and lightness of the color after you increase its saturation.

Adjusting color selectively

You can make selective color adjustments by adding or removing an absolute or relative percentage of the CMYK process color from the red, yellow, green, cyan, blue, and magenta color spectrums. You can also add color to the grayscale pixels in a color image. You can apply an adjustment to an entire image or to part of an image using a lens.

The Selective Color effect has been used to adjust the color value in the green spectrum.

To make selective color adjustments to an entire image

1. Choose Image, Adjust, Selective Color.

2. In the Color Spectrum section, enable the button that corresponds to the color spectrum that you want to adjust.

3. In the Adjustment Percentage section, enable one of the following buttons:

   • Relative — adds or removes a percentage of the process color to or from the selected color spectrum. For example, adding 10% magenta to a 50% red pixel results in an adjustment of + 5%.

   • Absolute — adds or removes the absolute value of the process color to or from the selected color spectrum. For example, adding 10% magenta to a 50% red pixel results in an adjustment of + 60%.

4. Move any of the following sliders:

   • Cyan — increases or decreases the percentage of cyan inherent in the color spectrum

   • Magenta — increases or decreases the percentage of magenta inherent in the color spectrum

   • Yellow — increases or decreases the percentage of yellow inherent in the color spectrum

   • Black — increases or decreases the percentage of black inherent in the color spectrum

To make selective color adjustments to part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Selective Color from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 4 from the previous procedure.

• You can add color to the grayscale pixels in an image or in a particular image area by enabling the Shadows, Midtones, or Highlights button and enabling the Absolute button in the Selective Color dialog box. When you move the Cyan, Magenta, Yellow, and Black sliders, the percentage of those colors increases or decreases for the selected color tones.

Replacing colors

You can replace selected colors in an entire image or in part of an image using a lens. When you select the colors that you want to replace in your image, a temporary color mask is created using controls that are similar to the color-sensitive mask controls.

The Replace Colors effect has been used to replace all instances of the color red with purple.

To replace colors in an entire image

1. Choose Image, Adjust, Replace Colors.

2. Do one of the following to choose the color you want to replace:

   - Click the *Old Color Eyedropper tool,* move the cursor over the image, and choose the color that you want to replace. The color bar on the Old Color picker shows this color.

   - Click the Old Color picker, and choose a color.

3. Do one of the following to choose a replacement color:

   - Click the *New Color Eyedropper tool,* move the cursor over the image, and choose a replacement color. The color bar on the New Color picker shows this color.

   - Click the New Color picker, and choose a color.

4. In the Adjust section, move any of the following sliders:

   - Hue — sets the hue level of the new color

   - Saturation — sets the saturation level of the new color

   - Lightness — sets the lightness level of the new color

   - Range — sets the range of affected colors. Applying the effect with a range of 1 affects only a single color; applying a range of 100 shifts most of the colors in the direction of the new color.

To replace colors in part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Replace Colors from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 4 from the previous procedure.

- For more information about color-sensitive masks, see "Using masks to select colors" on page 71.

- You can enable the Ignore Grayscale check box in the Replace Colors dialog box to ignore all grayscale pixels when replacing colors in an image. If this check box is disabled, gray pixels are replaced based on saturation and lightness values alone.

- You can enable the Single Destination Color check box in the Replace Colors dialog box to replace all colors that fall within the current range of the new color.

Desaturating image color

You can reduce the saturation of each color in an image to zero to remove the hue component and to convert colors to their grayscale equivalents. This creates a grayscale image without changing the color mode. You can desaturate the colors in an entire image or in part of an image using a lens.

Desaturating the image removes its colors.

To desaturate colors in an entire image

• Choose Image, Adjust, Desaturate.

To desaturate colors in part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Desaturate from the Lens Type list.

Adjusting color hue

You can adjust the color hue of an image by choosing a series of sample thumbnail buttons. The thumbnail buttons let you preview the appearance of the image as different color hue adjustments are applied. The intensity of the effect increases each time you click the button.

Magenta has been added to the color values in the original image.
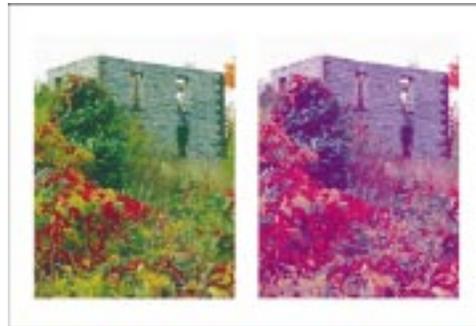
To adjust color hue

1. Choose Image, Adjust, Color Hue.

2. In the Adjust section, enable any of the following check boxes:

   • Shadows — affects the dark tones in the image

   • Midtones — affects the medium tones in the image

   • Highlight — affects the light tones in the image

   • Preserve Luminance — ensures that the color's brightness values are not affected

3. Move the Step slider to adjust the amount of color to be applied.

4. Click one of the following thumbnail buttons:

   • More Red — adds more red to your image

- More Green — adds more green to your image

- More Blue — adds more blue to your image

- More Cyan — adds more cyan to your image

- More Magenta — adds more magenta to your image

- More Yellow — adds more yellow to your image

Inverting image colors

Use the Invert command to invert the color values of an image's pixels and create the appearance of a color photographic negative. You can invert the colors in an entire image or in part of an image using a lens.

The image's color values have been inverted.

To invert the colors in an entire image

- Choose Image, Transform, Invert.

To invert colors in part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Invert from the Lens Type list.

Posterizing an image

Posterizing reduces groups of color to solid colors and exaggerates the edges between adjacent colors. You can posterize an entire image or part of an image using a lens.

To posterize an entire image

1. Choose Image, Transform, Posterize.

2. Move the Level slider to control the intensity of the posterization.

To posterize part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Posterize from the Lens Type list.

5. Click OK.

6. Move the Level slider to control the intensity of the posterization.

- You can also adjust the intensity of the posterization by typing a value in the Level box in the Posterize dialog box. Intensity values range from 2 to 32. A value of 2 results in the most drastic posterizing; a value of 32 has no effect on most images.

Adjusting threshold levels

Adjusting threshold values for the colors in an image lets you convert a range of colors to black or white. The threshold values that you set determine which pixels become black and which pixels become white. If you convert colors to black, only those pixels with a brightness value that is lower than the threshold value are converted to black. If you convert colors to white, only those pixels with a brightness value that is higher than the threshold value are converted to white. You can adjust the threshold values for an entire image or for part of an image using a lens.

The Threshold effect has been applied to convert the colors in the original image to black or white.

To set threshold levels for an entire image

1. Choose Image, Transform, Threshold.

2. Choose a color channel from the Channel pop-up menu.

3. Enable one of the following threshold buttons:

    • To Black — sets the amount of black in the image

    • To White — sets the amount of white in the image

    • Bi-Level — lets you divide the image color between high and low values

4. Do one of the following:

    • Type a value in the Percent box to change the histogram's level of sensitivity precisely.

    • Enable the Automatically check box to change the histogram's level of sensitivity automatically.

5. Move the Low-Level slider to set the brightness level of the darkest color.

    A value of 0 is black; higher values are shades of gray.

6. Move the High-Level slider to set the brightness level of the lightest image color.

    A value of 255 is white; lower values are shades of gray.

7. Move the Threshold slider to set the brightness level at which colors are converted to black or white.

To set threshold levels for part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Threshold from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 7 from the previous procedure.

• The Threshold dialog box displays a histogram with brightness values ranging from black (with a value of 0) on the left to white (with a value of 255) on the right. The spikes on the histogram represent the number of image pixels at each brightness level.

• The High-Level slider is not available if you enable the To Black button; the Low-Level slider is not available if you enable the To White button.

• You can also set threshold levels by typing values in the Low-Level, Threshold, and High-Level boxes in the Threshold dialog box.

Correcting and adjusting image tone

You can improve the quality of an image or its individual components by correcting and adjusting image tones. When you correct and adjust image tones, you adjust the relationship between the shadows, midtones, and highlights in your image. If you make tonal adjustments to an image that has floating objects, only the active object is affected. You must merge the objects with the background before you can apply tonal adjustments to an entire image. For more information about merging objects with the background, see "Grouping and combining objects" on page 209. If you want to correct the tones of a specific image area without affecting the rest of the image, you can create a lens that defines the area, and apply the tonal correction to the lens. For more information about lenses, see "Working with lenses" on page 265. Corel PHOTO-PAINT lets you correct or adjust image tones using a variety of tools and commands.

Brightness-Contrast-Intensity

The Brightness-Contrast-Intensity dialog box lets you adjust the brightness, contrast, and intensity of image tones. The Brightness slider shifts all pixel values up or down the tonal range. When you adjust the brightness, you lighten or darken all colors equally. The Contrast slider adjusts the distance between the lightest and darkest pixels. The Intensity slider increases or decreases the intensity, brightening the lighter areas without washing out the dark areas or darkening the shadows without obscuring the light areas. Contrast and intensity usually work together because an increase in contrast

can wash out detail in shadows and highlights, but an increase in intensity can restore this detail.

Color Tone Control

The Color Tone Control dialog box lets you adjust brightness, saturation, and contrast by choosing a series of sample thumbnail buttons. The thumbnail buttons let you preview the appearance of the image as different color tone adjustment techniques are applied. The intensity of the effect increases each time you click the button. The Step slider controls the degree of change that each adjustment makes.

Auto Equalize

The Auto Equalize command performs a flat equalization of the shadows, midtones, and highlights in an image by automatically redistributing the significant pixel values throughout the tonal range.

Level Equalization

The Level Equalization dialog box lets you adjust shadow, midtone, and highlighted areas by redistributing shades from darkest to lightest. Level Equalization is an effective way to preserve shadow and highlight detail that can be lost when you adjust the brightness, contrast, and intensity of an image's tone. By defining the start and end points of your tonal range, you can redistribute the pixel values throughout the entire tonal range. A histogram displays the distribution of pixels according to brightness.

You can also use the Level Equalization dialog box to create color gradations on posterized images; to lighten or darken any combination of the shadows, midtones, or highlights; to compress brightness values to printable limits; and to adjust the gamma curve (midtones).

Tone Curve

The Tone Curve dialog box lets you perform color corrections with more precise, local control over individual pixel values. You can pinpoint a problem area and produce a subtle or pronounced change in that area that dissipates — according to the tone curve — as you move away from the targeted area. The Tone Curve dialog box lets you take current pixel brightness values as input and change them to different values. The response curve is a visual representation of the balance between shadows, midtones, and highlights. You can choose from a number of preset response curves, or you can create and save custom response curves.

Gamma

Gamma is a method of tonal correction that takes the human eye's perception of neighboring values into account. For example, if you place a circle filled with 10-percent-gray on a black background and an identical gray circle on a white background, the circle surrounded by black appears lighter than the circle surrounded by white — even though the brightness values are identical.

The Gamma dialog box lets you pick up detail in a low-contrast image without significantly affecting the shadows or highlights. Gamma affects all image values but is curve-based so that the changes are weighted toward the midtones.

Adjusting the brightness, contrast, and intensity

You can adjust the brightness, contrast, and intensity of image tones. You can adjust these values in an entire image or of part of an image using a lens. You can also adjust these values directly in the Image Window.

Adjusting the brightness, contrast, and intensity lets you improve the clarity and quality of the image.

To adjust the brightness, contrast, and intensity of an entire image

1. Choose Image, Adjust, Brightness-Contrast-Intensity.

2. Move any of the following sliders:

   • Brightness — lightens or darkens the colors equally

   • Contrast — adjusts the difference between the light and dark colors

   • Intensity — brightens the light areas or darkens the dark areas

To adjust the brightness, contrast, and intensity of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Brightness-Contrast-Intensity from the Lens Type list.

5. Click OK.

6. Move any of the following sliders:

   • Brightness — lightens or darkens the colors equally

   • Contrast — adjusts the difference between the light and dark colors

   • Intensity — brightens the light areas or darkens the dark areas

To adjust the brightness of an image in the Image Window

1. Open the Paint Tools flyout, and click the *Effect tool*.

2. Choose the *Brightness tool* from the Effect Tool picker on the Property Bar.

3. Click and drag across the areas you want to brighten.

To adjust the contrast of an image in the Image Window

1. Open the Paint Tools flyout, and click the Effect tool.

2. Choose the *Contrast tool* from the Effect Tool picker on the Property Bar.

3. Click and drag across the areas you want to darken.

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   • You can customize the brush you use with the Brightness or Contrast tools by setting values on the Property Bar or on the Tool Settings Palette.

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Adjusting the brightness, saturation, and contrast

You can adjust the brightness, saturation, and contrast of an image by choosing a series of sample thumbnail buttons. The thumbnails show how the image will look if you apply the change. The intensity of the effect increases each time you click the button.

To adjust brightness, saturation, and contrast

1. Choose Image, Adjust, Color Tone.

2. Move the Step slider to set the intensity of each change.

3. Click one of the following thumbnail buttons:

   • Darker — darkens your image

   • Saturate — increases the saturation of your image

   • More Contrast — increases the contrast of your image

   • Lighter — lightens your image

   • Desaturate — decreases the saturation of your image

   • Less Contrast — decreases the contrast of your image

• You can also set the intensity of each change by typing a value in the Step box in the Color Tone dialog box.

Adjusting the balance of shadows, midtones, and highlights

You can use the Auto Equalize command to perform a flat equalization of the shadows, midtones, and highlights in an image by automatically redistributing a significant portion of the tonal range between 0 and 255.

To adjust the tonal range automatically

• Choose Image, Adjust, Auto Equalize.

- You can make finer adjustments to the balance of the shadows, midtones, and highlights using the Level Equalization and Tone Curve dialog boxes. For more information about level equalization, see "Adjusting shadows, midtones, and highlights using the Level Equalization dialog box" on page 291. For more information about tone curves, see "Adjusting shadows, midtones, and highlights using the Tone Curve dialog box" on page 292.

Adjusting shadows, midtones, and highlights using the Level Equalization dialog box

Use the Level Equalization dialog box to accentuate or tone down detail in shadow or highlight areas, to correct overexposure or underexposure, or to make general adjustments to the complete tonal range. You can adjust the shadows, midtones, and highlights of an entire image or of part of an image using a lens.

To adjust the shadows, midtones, and highlights of an entire image

1. Choose Image, Adjust, Level Equalization.

2. Do one of the following:
   - Enable the Set Input Values button, and click the Set Input Values Eyedropper tool.
   - Enable the Set Output Values button, and click the Set Output Values Eyedropper tool.

3. Choose a color from the Image Window.

4. Choose a color channel from the Channel pop-up menu.

5. Enable the Auto-Adjust check box to automatically redistribute the pixel values throughout the entire tone range.

6. Move the Gamma Adjustment slider to adjust the midtones.

7. Do one of the following:
   - Move the Input Value Clipping sliders on the histogram to set a clipping range for the darkest and brightest pixels in the image.
   - Move the Output Range Compression sliders on the histogram to set an output brightness value for the darkest and brightest pixels in the image.

8. Enable the Automatically check box to automatically clip the outlying brightness values in your image.

To adjust the shadows, midtones, and highlights of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Level Equalization from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 8 from the previous procedure.

• When you enable the Automatically check box, a percentage of the most extreme brightness values are ignored when the lightest and darkest pixels are identified in the histogram. Disabling the Automatically check box lets you set the amount of clipping by typing a value in the Display Clipping Percent box.

• If you want to adjust the percentage of outlying pixels on either end of the tonal range, you can click the Options button and set values in the Black Limit To and White Limit To boxes.

• You can also adjust the input and output values of the shadows and highlights by typing precise values in the Input Value Clipping boxes and Output Range Compression boxes in the Level Equalization dialog box.

Adjusting shadows, midtones, and highlights using the Tone Curve dialog box

Use the Tone Curve dialog box to accentuate or tone down detail in shadow or highlight areas, to correct overexposure or underexposure, or to make general adjustments to the complete tonal range. You can adjust the shadows, midtones, and highlights of an entire image or of part of an image using a lens.

To adjust shadows, midtones, and highlights of an entire image

1. Choose Image, Adjust, Tone Curve.

2. Choose a color channel from the Channel pop-up menu.

3. Choose one of the following editing methods from the Edit Style pop-up menu:

- Curve — lets you shape the curve by clicking and dragging and smoothes the distribution of values

- Linear — lets you draw the curve by clicking and dragging but retains straight line segments between nodes

- Freehand — lets you draw the curve by clicking and dragging

- Gamma — lets you weigh corrections toward the midtones. If you select Gamma, you must move the Gamma slider to set a gamma curve value.

4. Click and drag the tone curve on the grid.

To adjust the shadows, midtones, and highlights of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Tone Curve from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 4 from the previous procedure.

- If you want to adjust the percentage of outlying pixels on either end of the tonal range, you can click the Options button and set values in the Black Limit To and White Limit To boxes.

- You can smooth a Freehand curve by clicking the Smooth button in the Tone Curve dialog box.

- You can flip the tone curve on the grid by clicking the flip buttons below the X: and Y: axis boxes in the Tone Curve dialog box.

- You can reset the tone curve by clicking the Null button in the Tone Curve dialog box. The tone curve's default shape is a straight line that extends between the darkest and lightest colors in an image.

- You can enable the Display All check box to view the tone curves for all of the image's channels at once.

Adjusting midtones

You can adjust the shadows, midtones, and highlights in an image in a nonlinear fashion, so that the most pronounced changes occur in the

midtones. You can adjust the midtones of an entire image or of part of an image using a lens.

Adjusting the midtones lets you increase the detail in a low-contrast image without affecting the shadows or highlights.

To adjust the midtones of an entire image

1. Choose Image, Adjust, Gamma.

2. Move the Gamma slider to set a gamma curve value.

To adjust the midtones of part of an image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Gamma from the Lens Type list.

5. Click OK.

6. Move the Gamma slider to set a gamma curve value.

*   You can also adjust the gamma curve by typing a value in the Gamma box in the Gamma dialog box.

*   Higher values brighten midtones; lower values darken them.

*   You can adjust the midtones in an image independently of the shadows and highlights using the Level Equalization dialog box.

USING PATHS TO DEFINE IMAGE AREAS   7

Paths allow you to create precise, outlined shapes in your image. You can create paths from scratch with the Path Node Edit tool, you can create paths from mask selections, and you can also import vector images as paths. Paths are line and curve segments that are connected by square endpoints called nodes. Nodes that connect curve segments have two control points extending from them that determine the angle of the curve you are creating or shaping. Control points look like small nodes and are connected by a dashed line that passes through the node.

After you enclose part of your image within a path, you can

- convert the path to a mask marquee, which lets you edit the area enclosed by the path only

- apply a brush stroke along the path

- export the contents of the path as an irregularly shaped bitmap for placement in a drawing or page layout program, such as CorelDRAW™

Because paths let you modify isolated segments of the outline you create, paths provide more flexibility than mask marquees. You can edit each line and curve segment on a path with precision, and you can move, add, remove, or transform the connecting nodes. The controls on the Property Bar or on the Tool Settings Palette allow you to edit paths in your image.

Creating and saving paths

You can create paths from scratch using the Path Node Edit tool. When you create a path that completely encloses an area, it is closed; a path with start and end nodes that are not connected is open. To create paths from existing shapes, convert mask marquees to paths, or import vector graphics as paths. You can also create clipping paths to create non-rectangular bitmaps.

An open path that includes two curved segments and three nodes. Control points extend from the nodes.
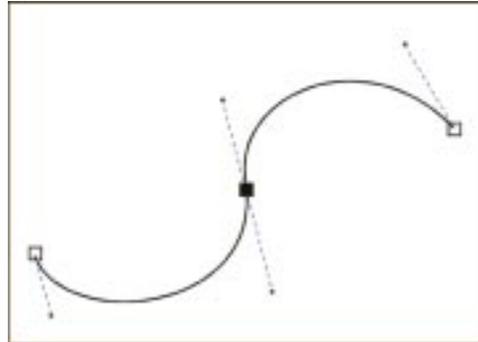
You can save paths if you want to work on them again or if you want to use them with other images. You can also open saved paths and delete paths.

Creating a path from scratch

You create a path by placing nodes on your image. Straight or curved line segments join the nodes. As you create a path, Corel PHOTO-PAINT determines the type of node to use based on whether you create a line or curve line segment. There are five node types: line, curve, symmetrical, cusp, and smooth. You can also add, remove, and transform nodes manually using the Node Edit button.

Converting masks to paths

You can also convert a mask to a path. If you have already defined a selection on your image using a mask tool, you can use the Mask To Path button to define the same image area with a path. Converting masks to paths lets you modify the shape using the additional editing power provided by the Path Node Edit tool. You can also convert the path back to a mask at any time by clicking the Path To Mask button.

Creating clipping paths

Clipping paths let you create non-rectangular bitmaps by making everything but the selected area transparent when the image is viewed in another application. For example, if you created an intricate path around the image of your favorite cat in Corel PHOTO-PAINT and you'd like to put her onto the couch you drew in a separate image, then you need to create a clipping path

around your cat and nothing else. If you do not use a clipping path, the entire bitmap is encased in a square or rectangular frame.

When you send a clipping path to another application, you export the contents of the path as an Encapsulated PostScript file; therefore, clipping paths must be used with PostScript printers only.

Importing vector images as paths

You can also create paths using the vector images that you've created in other drawing applications, such as CorelDRAW. Vector images are created as collections of lines. These lines can be imported into Corel PHOTO-PAINT as paths.

Saving paths

After you create a path, you can save it for later use in different images. Because only one path can be displayed on your image at a time, saving lets you create a new path without losing the existing path. A path that is displayed in the Image Window and has not been saved is called a Workpath.

Opening and deleting paths

After you save a path, you can open it and use it in any other image. You can also remove an existing path before starting a new one, or you can permanently delete a saved path.

Starting a new path

You can create a path from scratch to define a mask selection, apply brush strokes to a specific shape, or create a non-rectangular bitmap for use in other applications.

To start a new path

1. Click the *Path Node Edit tool.*

2. Enable the *Add Nodes button* on the Property Bar.

3. Click to place the path's first node.

- By default, the Add Nodes button is enabled when you click the Path Node Edit tool in the Toolbox.

Drawing line segments

You can draw line segments by placing a start node and an end node on an image using the Path Node Edit tool.

To draw line segments

1. Click the *Path Node Edit tool.*

2. Enable the *Add Nodes button* on the Property Bar.

3. Click where you want the path segment to start.

4. Click where you want the path segment to end.

5. Repeat step 4 to add more segments to the path.

- You can create a closed path by positioning your cursor over the path's first node and clicking.

Drawing curve segments

You can draw curve segments by clicking and dragging to place start and end nodes on an image using the Path Node Edit tool.

To draw curve segments

1. Click the *Path Node Edit tool*.

2. Enable the *Add Nodes button* on the Property Bar.

3. Click where you want the path segment to start, drag to where you want the path segment to end, and click to place the node.

4. Repeat step 4 to add more segments to the path.

• Only one control point appears if the node from which you are dragging is the path's starting node.

• As you create curve segments, control points move to indicate the direction of the curve segment and its angle relative to the node.

• You can create a closed path by positioning your cursor over the path's first node and clicking.

• If you have trouble drawing a complex curve, you can draw a simple curve segment and edit it later. For information about editing paths, see "Editing paths" on page 306.

Converting masks to paths

You can modify the shape of a mask by converting it to a path to give you more precise control over its shape. After you edit the shape of the path, you can convert it back to a mask for use on the active image.

To create a path from a mask

1. Click the *Path Node Edit tool*.

2. Click the *Mask To Path button* on the Property Bar.

3. Type a tightness value between 1 and 10 in the Tightness box to specify how similar the path's shape is to that of the mask.

4. Type a threshold value between 1 and 10 in the Threshold box to specify how great a change is required between sections of a mask for a node to be created.

- For more information about masks, see "Using masks to make selections" on page 57.

- The path is superimposed on the mask marquee, so you may have to move the mask to see the path.

Using clipping paths to add transparency to images

Clipping paths let you create irregularly shaped bitmaps by making everything but the selected area transparent when the image is viewed in another application. Corel PHOTO-PAINT uses the image pixels that appear inside an open or closed path to create the bitmap file.

To create a clipping path

1. Create a path that defines the area you want to save as a bitmap.

2. Choose File, Export, Export To File.

3. Choose Encapsulated PostScript from the Format pop-up menu.

4. Locate the folder where you want to save the file.

5. Specify a filename, and click Save.

6. In the EPS Export dialog box, enable the Save check box in the Clipping section.

7. Enable the Image Enclosed By Path button.

8. Choose the path that you want to save as a clipping path from the pop-up menu.

- You can create a clipping path using an existing path by choosing the path name from the pop-up menu in the EPS Export dialog box.

- If the image contains multiple objects, an alert appears, indicating that the objects will be merged with the background.

- If you haven't saved your path, it's called Workpath in the pop-up menu.

- You can crop an image to the borders of a path by enabling the Crop Image To Mask/Path When Saving check box in the EPS Export dialog box. If the check box is disabled, Corel PHOTO-PAINT saves the whole image with the path; however, only the selection inside the path is printed on a PostScript printer.

Importing vector images as paths

Vector images are stored as algebraic equations defining the various lines and curves of the image. You can load vector images containing simple circles, arcs, text, and polygons as paths. When vector images are converted to paths, each point on the vector becomes a node.

To import a vector image as a path

1. Click the *Path Node Edit tool*.

2. Click the *Import Vector button* on the Property Bar.

3. Locate the folder where the vector image you want to import is stored.

4. Choose the filename.

- If you want to import text from CorelDRAW, you must first convert the text to curves.

- Large, complex vector images are not suitable for importing as paths because they contain too many nodes.

Saving paths

Save paths if you want to work on them again or if you want to use them with other images.

To save paths

1. Click the *Path Node Edit tool*.

2. Click the *Save Path button* on the Property Bar.

3. Locate the folder where you want to save the path.

4. Specify a filename, and click Save.

Opening paths

After you save a path, you can open it and use it with any other image.

To open existing paths

1. Click the *Path Node Edit tool*.

2. Click the *Open Path button* on the Property Bar.

3. Locate the folder where the path is stored.

4. Choose the path name.

- If you create a path or make changes to an existing path, Corel PHOTO-PAINT prompts you to save your work before opening another path in the Image Window.

- Paths are loaded into Corel PHOTO-PAINT at their original size and position; therefore, paths created on large files may not be suitable for smaller images.

Deleting paths

You can remove a path from an image or permanently delete a saved path.

To delete a path

- Click the *Delete Path button* on the Property Bar.

To erase an existing path before creating a new one

1. Click the *Path Node Edit tool*.

2. Click the *New Path button* on the Property Bar.

- Because only one path can be displayed in an image at a time, the current path is automatically removed when you create a new path. If the current path has not yet been saved or has been changed since the last save, you are prompted to save your changes.

- You can enable the Show/Hide Path button on the Property Bar or you can press Shift+H to hide paths in your image temporarily.

Selecting and moving parts of a path

You can change the shape of a path by selecting and moving its segments, nodes or control points. Coarse adjustments are made by dragging the

segments; fine adjustments are made by dragging the nodes and control points.
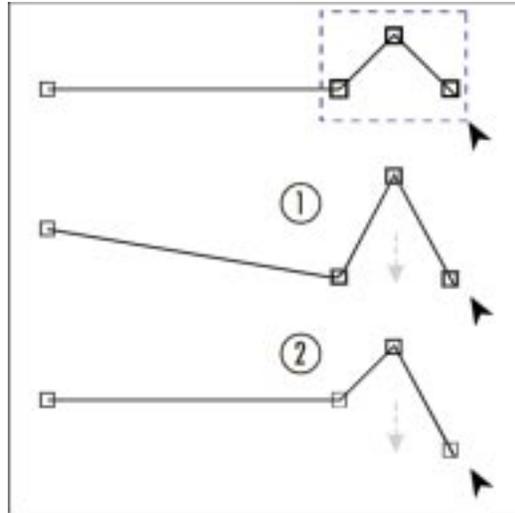
When you drag a single node, the segments attached to it move with the node and remain connected. When you drag two or more adjacent nodes, the path segments between the nodes move with the nodes. The Elastic Mode lets you make segments behave like rubber bands, stretching and shrinking according to the direction and the degree to which you drag the nodes.

Selecting and deselecting nodes

You must select a node before you can move it to another location, delete it, divide it into two nodes, change its type, or drag its associated control points. You can select several nodes to perform the same operation simultaneously.

Node 2 is a selected line node; it is highlighted but hollow. Node 3 is a selected curve node; it is solid.
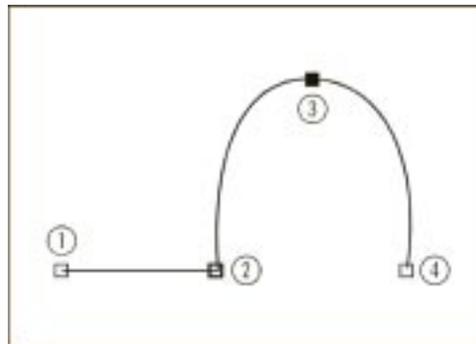
To select a node

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Click a node.

- If you select a node that is on a curve, control points extend from it and from the node created before and after it.

To select multiple nodes

1. Click the Path Node Edit tool.

2. Click the Node Edit button on the Property Bar.

3. Hold down Shift, and click each node.

- You can deselect one or more nodes in a path by holding down Shift, and clicking the selected nodes.

- You can select all nodes in a path by holding down Command+Shift, and clicking a node.

- You can select a group of nodes by clicking the Node Edit button and marquee-selecting the entire group.

Moving path segments

You can move curve and line segments by dragging their nodes.

To move path segments

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Hold down Shift, and click the nodes on the segments that you want to move.

4. Drag the nodes to a new location.

- Selected segments move together as you drag their nodes.

- If the node is on a curve segment, the node's control points move with the node to prevent the angles at which the curve enters and leaves the node from changing. This applies to smooth and symmetrical nodes only.

- If you move path segments while in Elastic Mode, they stretch or shrink depending on the direction and distance you move their nodes.

- You can also move a curve segment by dragging any part of the segment.

- You can move selected path segments by a precise increment (the Nudge distance) by pressing an Arrow key. Hold down Shift and press an Arrow key to move selected path segments by a multiple of the Nudge distance (the Super Nudge distance). For more information about setting the Nudge distances, see "Setting the nudge increments" on page 51.

Shaping curve segments in a path

When you select a single node on a curve segment, two control points extend from it in opposite directions. You can change the shape of a curve by dragging these control points.

The curve segment (1) is reshaped by dragging the control point A (2).
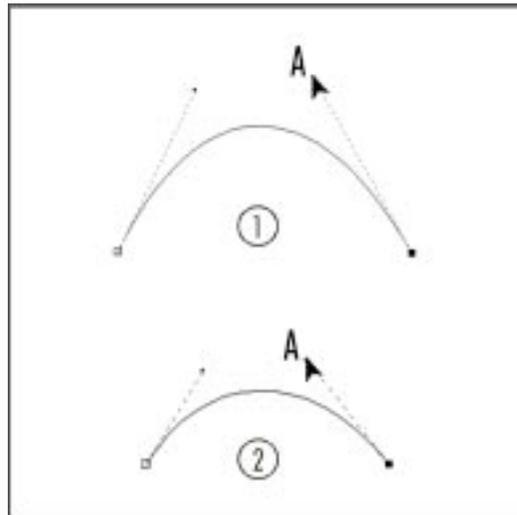
To shape a path by moving its control points

1. Click the *Path Node Edit tool*.

2. Click the *Node Edit button* on the Property Bar.

3. Select a node.

4. Click and drag the control points.

Stretching and shrinking path segments

The Elastic Mode lets you stretch or shrink path segments like rubber bands. When you move a path segment in Elastic Mode, the segment's shape is distorted, depending on the direction and the degree to which you drag the nodes.

To stretch and shrink path segments

1. Click the *Path Node Edit tool*.

2. Click the *Node Edit button* on the Property Bar.

3. Enable the *Elastic Mode button*.

4. Select at least two adjacent nodes.

5. Drag a node.

Editing paths

You can edit paths by adding and deleting nodes, by joining or breaking paths, by changing the node type, or by transforming lines to curves and curves to lines.

Adding and deleting nodes on a path

If you create a path on an image but cannot shape the segments exactly the way you want, you can add nodes to the path. Increasing the number of nodes on a path gives you greater control over the shape of line and curve segments. If your path contains unwanted dips or bumps, you can remove nodes from the corresponding path segment to fine-tune its shape.

For curves that move in one direction from start to finish, place nodes at 120-degree intervals.
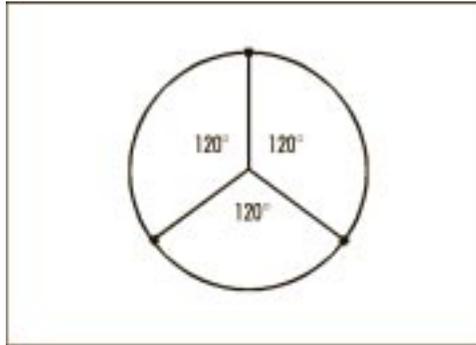
For curves that change direction smoothly, place a node on the curve each
time it changes direction.
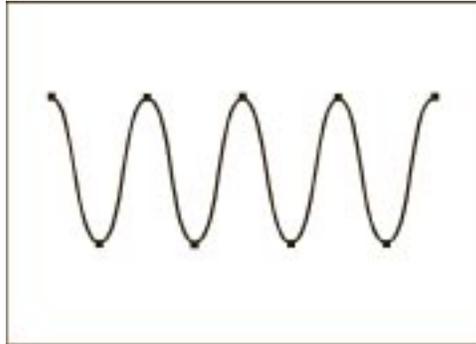
For curves that change direction at a cusp, place a node at every cusp.
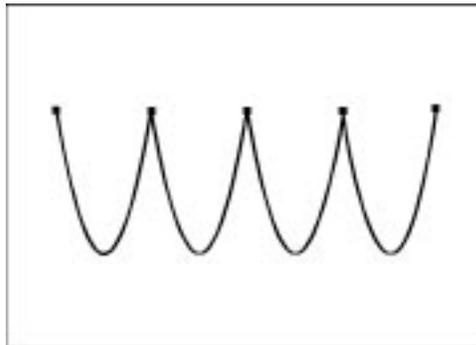
You can remove unnecessary nodes on a curve segment using the
Auto-Reduce button on the Property Bar. Removing unnecessary nodes lets
you create paths that are smoother and smaller in size when saved.
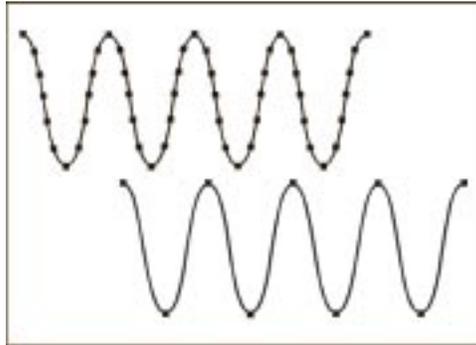
Adding nodes to a path

You can add nodes to a path if the existing segments, nodes, and control points do not let you shape a path the way you want. You can add one node at a time or several at once. When you add a node, it appears between the node you selected and the preceding node in the path. You can also add nodes at specific points on a path.

To add a single node to a path

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select a node.

4. Click the *Add button.*

To add several nodes to a path

1. Click the Path Node Edit tool.

2. Click the Node Edit button on the Property Bar.

3. Select the nodes.

4. Click the Add button.

5. Repeat step 4 to insert additional nodes.

To add nodes at specific points on a path

1. Click the Path Node Edit tool.

2. Click the Node Edit button on the Property Bar.

3. Hold down Command, and click where you want to add a node.

Deleting nodes from a path

Deleting closely bunched nodes simplifies complex paths. You can also delete nodes to smooth bumps along a curve. When you delete nodes, the shape of the path can change, depending on the position of the node that you remove.

To delete a node from a path

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select a node.

4. Click the *Delete button.*

- • You can delete several nodes at once by selecting multiple nodes. For more information about selecting multiple nodes, see "Selecting and deselecting nodes" on page 303.

Removing unnecessary nodes automatically

Paths that you create from masks or have edited frequently often contain more nodes than are required to maintain their shape. You can remove these unnecessary nodes from the entire path or from a section of a path. When you delete nodes, the shape of the path can change, depending on the position of the nodes that are removed.

To auto-reduce the number of nodes on a path segment

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select a path segment.

4. Type a value between 1 and 10 in the Reduce Tolerance box on the Property Bar.

   The larger the value, the more nodes are deleted.

5. Click the *Auto-Reduce button.*

- • You can select the entire path to remove all unnecessary nodes.

Joining nodes and breaking paths

You can join or break path segments to create open or closed paths on an image. For example, if you want to close an open path, you can join the start and end nodes. If you want to open a closed path or create two separate components within a path, you can break the connection between two nodes.

Because nodes act as the connective joints for a path, you can only join or break segments at a node. If no node exists at the point where you want to join or break segments, you must add a node at that point.

Joining nodes

You can join two nodes in a path if they are positioned at the end of open or separated segments. If you join two nodes that are far apart, they are joined in the middle of their original positions.

To join two nodes

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select two nodes.

4. Click the *Join Selected Nodes button* on the Property Bar.

• For more information about selecting multiple nodes, see "Selecting and deselecting nodes" on page 303.

Breaking a path

Paths can only be broken or separated at a node. When you break a path, new nodes are added to the ends of the disconnected segments.

To break a path

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select a node.

4. Click the *Break Selected Node button.*

5. Drag the node to view the result of breaking the path.

• If you want to break a path at a point where there is no node, you must add a node at that point.

Changing node and segment types

You can define intricate paths by changing the path segment type. Line segments can be converted to curves to give you more precision when editing paths.

1. Symmetrical node. 2. Smooth node. 3. Cusp node.
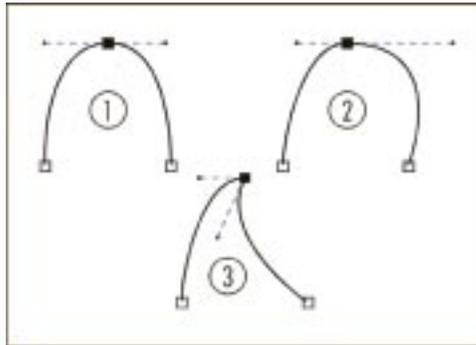
There are three types of curve segment nodes: smooth, symmetrical, and cusp.

Symmetrical nodes force the curve on one side of a node to mirror the curve on the other side of the node. Cusp nodes add sharp bends to a path. Smooth nodes create a smooth transition between two segments. If you convert a node connecting a curve segment to a line segment into a smooth node, you can only move the control point on the curve side along an imaginary line that follows the extension of the line segment. A smooth node constrains the angle between the two control points to 180 degrees but lets you vary the length of the control points independently.

Changing the node type

When you change a node type, you change the way the segments attached to it behave. Although the new node type may not immediately affect the path's shape, it can have dramatic effects when you move the control points to edit the path. You can change several node types in a single operation.

To change the node type

1. Click the *Path Node Edit tool*.

2. Click the *Node Edit button* on the Property Bar.

3. Select a node.

4. Click one of the following buttons on the Property Bar:

- *Symmetrical button* — constrains the angle between the two control points to 180 degrees and keeps both control points at an equal distance from the node

- *Cusp button* — lets you edit the control points on either side of the node to add a sharp bend to a path

- *Smooth button* — constrains the angle between the two control points to 180 degrees, but lets you vary the distance between the node and each of its control points

- A curve node that is connected to a line segment must be smooth or cusped.

Changing a segment to a curve or line

You can change a line segment to a curve segment or a curve segment to a line segment. When you change a line to a curve segment, you must select the node at either end of the segment to view the curve's control points.

To change a segment to a curve or a line

1. Click the *Path Node Edit tool.*

2. Click the *Node Edit button* on the Property Bar.

3. Select the node(s) attached to the segment(s) you want to convert.

4. On the Property Bar, click one of the following buttons:

- *To Line* — changes the selected curve nodes to line nodes to create line segments

- *To Curve* — changes the selected line nodes to curve nodes in order to create curved segments

- You can change several segments of the same type in a single operation.

Using paths with brush and mask tools

After you define a shape on your image by creating a path, you can convert the path to a mask or you can apply brush strokes along the path.

Converting paths to masks

You can convert a path to a mask. If you have defined a path on your image using the Path Node Edit tool, you can use the Path To Mask button to define the same image area with a mask. Converting paths to masks lets you modify the shape using the mask tools.

When you convert a path to a mask, the mask is created in addition to the path so that both appear on the image. You can then create an object from the mask selection and move the object without affecting the position of the path.

Stroking the path

If you want to apply precise brush strokes to your image, you can paint along a path's edge using the Paint tool, the Effect tool, the Clone tool, the Clone From Fill tool, the Image Sprayer tool, the Color Replacer tool, and the Eraser tool. You can customize the appearance of the brush stroke by setting its attributes on the Property Bar for the appropriate tool. For more information about setting these attributes, see "Painting, filling, and editing images" on page 125.

A path was created in the middle of the sunflower and stroked with a Paint tool, whose attributes are shown (insert).

After you apply a brush stroke along a path, you can repeat the stroke. You can set the angle between the strokes and the path, apply cumulative angles, scale the saved stroke, set a variation in the size of the strokes applied to the path, and make the strokes tangent to the path. You can also vary the colors used to apply the strokes to the path.

Converting paths to masks

You can convert a path to a mask before selecting, cutting, or copying the defined area. You can also convert a path to a mask and then convert the selection to an object.

To create a mask from a path

1. Click the *Path Node Edit tool.*

2. Create an open or closed path.

3. Click the *Path To Mask button* on the Property Bar.

- You can enable the Anti-Aliasing check box to smooth any diagonal or curved edges in the path.

- If you convert an open path to a mask, the start and end nodes are connected automatically.

- For more information about creating masks, see "Using masks to make selections" on page 57.

Painting along a path

After you define an area on an image using a path, you can apply a brush stroke along the path.

To paint along a path

1. Click the *Path Node Edit tool.*

2. Create an open or closed path.

3. Click one of the following tools in the Toolbox:

   - *Paint tool*

   - *Effect tool*

   - *Clone tool*

   - *Image Sprayer tool*

   - *Eraser tool*

   - *Color Replacer tool*

4. Choose Edit, Stroke, Stroke Path.

- You can customize the stroke that is painted along the path by setting options on the Property Bar or on the Tool Settings Palette for the active tool.

- You can paint along a specific part of a path by selecting the area with a mask tool. For more information about masks, see "Using masks to make selections" on page 57.

Repeating a paint stroke along a path

If you have painted along a path but want to enhance the brush stroke's effect, you can repeat the brush stroke. You can create your own custom brush strokes or use any of the preset strokes supplied with Corel PHOTO-PAINT.

To repeat a paint stroke along a path

1. Click the *Path Node Edit tool.*

2. Click one of the following tools in the Toolbox:

   - *Paint tool*

   - *Effect tool*

   - *Clone tool*

   - *Image Sprayer tool*

   - *Eraser tool*

   - *Color Replacer tool*

3. Choose Edit, Stroke, Repeat Stroke.

4. Click the flyout arrow above the Stroke pop-up menu, and choose Load Path As Stroke.

5. Type a value in the Repeat box to specify the number of times the stroke is repeated along the path.

6. Click the *Repeat Stroke Along Path button.*

- You can also choose a brush stroke from the Stroke pop-up menu.

- You can customize the stroke that is repeated along the path by setting scale, angle, and color values in the Repeat Stroke dialog box. For more information about repeating brush strokes, see "Repeating and modifying brush strokes" on page 150.
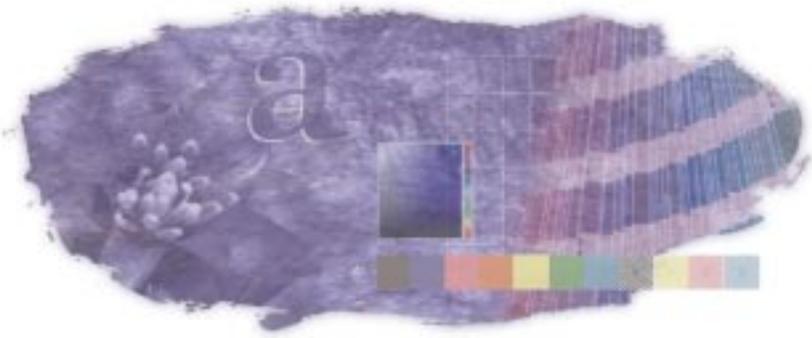
WORKING WITH COLOR

There are a wide variety of ways for you to choose the colors for a project. You can choose a color from a palette or create your own color using one of several methods. You can assemble your own custom palettes or use one of the palettes included with this product. The range of colors from which you can choose is extremely large.

Because there are so many color variations, a precise method for defining each color is required. For example, once you've found the perfect shade of light orange, you need to be able to reproduce that color and possibly tell others how to reproduce it. Color models let you accurately define colors by breaking them down into color components.

Color models

Your computer's monitor produces colors by combining red, green, and blue light. This means that the millions of colors that your monitor produces can all be described as amounts of red, green, and blue. These three color components form the basis for the RGB (Red, Green, and Blue) color model. Each of the three colors that make up the RGB color model can have values from 0 to 255.

Because the RGB model is based on colors of light, higher RGB values correspond to greater quantities of light. Consequently, higher RGB values result in lighter colors. When all three color components are at the maximum value, the resulting color is white. Because the RGB model creates colors by adding light, it is called an additive color model.

When the colors you see on your monitor are reproduced on paper, they are reproduced using ink instead of light. The most common method of reproducing color images on paper is by combining cyan, magenta, yellow, and black inks. These four colors are the color components of the CMYK (Cyan, Magenta, Yellow, and blacK) color model. Usually, each of the colors that make up the CMYK color model are described as percentages (from 0 to 100).

Inks produce color by reflecting certain colors of light while absorbing others. Darker inks absorb more light. Because the CMYK color model is based on colors of ink, higher percentages of color result in darker colors. In theory, when 100% cyan, 100% magenta, and 100% yellow are combined, the resulting color is black. In reality, black ink must be added to the color model to compensate for the limitations of inks. Because the CMYK color model creates colors by absorbing light, it is called a subtractive color model.

The RGB and CMYK color models are both based on practical methods of reproducing color. There are other color models that aren't based on color reproduction methods but offer different ways of working with color. There are several of these alternate color models available for you to use. The most common of these is the HSB color model.

The HSB color model is based on values of hue, saturation and brightness. Hue is the basic color. Saturation is the strength of the color or the color's distance from gray. Brightness is the amount of white that a color contains. A color with a saturation of 0 is a shade of gray (from white to black). A color with a brightness of 0 is black, and a color with a brightness of 100 is white. Because the HSB color model is not based on mixing colors, finding the color you want might be easier when using this model.

Reproducing colors accurately

Each piece of equipment used to produce a document — from scanners to printers — handles color differently. If you don't take these differences into account, the colors you see on screen may not match the colors on the printed page. For more information, see "Reproducing colors accurately" on page 333.

Choosing colors

The quickest way to choose a color is by using the on-screen Color Palette. However, if the on-screen Color Palette doesn't contain quite the right color, then you can use one of the other methods of choosing colors. Each method offers different ways of working with colors to find the perfect color. In most cases, the method you choose should be based on how you prefer to work.

Choosing a color using a color viewer

The color viewers offer a visual representation of the full spectrum of colors. You can change the color by manipulating the controls associated with the color viewer. For example, when you use the default color viewer, you can change the hue (the color) by moving a slider.

Choosing a color by blending or mixing colors

The color blender and color mixer let you choose colors by combining other colors. The color blender displays a grid of colors that it creates from the four base colors that you select. The color mixer uses a bitmap as a palette on which you can paint and mix colors.

Choosing a color using color harmonies

Color harmonies are most useful when you're selecting several colors for a project. By using color harmonies, you are guaranteed that the colors you choose look good together. Color harmonies work by superimposing a shape — such as a square or a triangle — over a color wheel. As you move one corner of the shape around the wheel the other corners also move. The colors at each corner are always complimentary, contrasting, or harmonious, depending on the shape you select.

Choosing a color from a color palette

There are two types of color palettes from which you can choose colors: fixed color palettes and custom color palettes. Don't confuse these types of color palettes with the on-screen Color Palette. The on-screen Color Palette is used to display and select colors from both fixed and custom color palettes.

Fixed color palettes are provided by third-party manufacturers and are most useful when accompanied by a color swatch book. A swatch book is a collection of color samples that shows exactly what each color looks like when it is printed. The best reason for using a color from a fixed color palette is having the opportunity to see how that color appears when it's printed correctly. Swatch books are available at most art supply stores or directly from the swatch book manufacturer.

An example of a swatch book.

Several of the fixed color palettes are collections of spot color inks. If you select a color from one of these palettes, then that color requires its own color separation. For more information about spot colors and color separations, see "Creating color separations" on page 510.

Custom color palettes are collections of colors saved as a color palette file. For more information about custom color palettes, see "Customizing color palettes" on page 330.

Choosing a color from the on-screen Color Palette

Using the on-screen Color Palette is the quickest way to choose colors.

To choose the paint, fill, or paper color

* Do one of the following:

   * Choose a color from the on-screen Color Palette to change the paint color.

   * Hold down Shift, and choose a color from the on-screen Color Palette to change the fill color.

   * Hold down Option, and choose a color from the on-screen Color Palette to set the paper color.

* Spot colors in the on-screen Color Palette are marked by a dot in the bottom-left corner of the color swatch.

- Position the cursor on a color, and hold down the mouse button to view a grid of neighboring colors.

Choosing a color from the color viewer

The default color viewer is based on the HSB color model. The slider at the right represents the hue, the x-axis represents the saturation, and the y-axis represents the brightness. You can select different color models for the color you're choosing, but the color viewer remains based on the HSB model. You can select other color viewers if you don't want to use the HSB color viewer. For more information about color models, see "Working with color" on page 317.

To choose the paint, paper, or fill color

1. Do one of the following:

   - Double-click the Paint swatch on the Status Bar to change the paint color.

   - Double-click the Paper swatch on the Status Bar to change the paper color.

   - Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Color Viewers button.*

3. Move the color slider up or down to change the range of colors displayed in the color selection area on the left.

4. Drag the small box in the color selection area to the color you want to use.

To use an alternative color viewer

1. Follow step 1 from the previous procedure.

2. Click the Color Viewers button.

3. Choose an alternative color viewer.

   Each color viewer lets you use a slider and a color selection area to choose a color.

To change the color model used in the color viewer

1. Follow steps 1 to 3 from the "To choose the paint, paper, or fill color" procedure.

2. Choose a color model from the Model pop-up menu.

Choosing a color by blending other colors

You can only blend colors that are in your current on-screen Color Palette. If you want to blend other colors, change the current on-screen Color Palette. You can view more or fewer blended colors by changing the grid size of the color selection area.

To choose the paint, paper, or fill color

1. Do one of the following:

   - Double-click the Paint swatch on the Status Bar to change the paint color.

   - Double-click the Paper swatch on the Status Bar to change the paper color.

   - Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Mixers button* to display the mixers list.

3. Choose Color Blend.

4. Open each of the four color pickers, and choose a color.

5. Choose the color you want to use from the color selection area.

To change the grid size of the color selection area

1. Follow steps 1 to 3 from the previous procedure.

2. Click the More button if the dialog box isn't expanded.

3. Click the Options button, choose Grid Size, and choose the size you want to use.

Choosing a color using color harmonies

Each of the options in the Hues pop-up menu corresponds to a shape that is superimposed on the color wheel. As you move the corner of the shape that is covered by a black circle, the grid of colors below the color wheel fills with new colors. Based on color theory, all the colors in this grid look good together. Since color harmonies are most useful when you are selecting several colors, try using color harmonies when working with custom palettes. See "Customizing color palettes" on page 330 for more information.

To choose the paint, paper, or fill color

1. Do one of the following:

- Double-click the Paint swatch on the Status Bar to change the paint color.

- Double-click the Paper swatch on the Status Bar to change the paper color.

- Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Mixers button* to display the mixers list.

3. Choose Color Harmonies.

4. Drag the black circle around the color wheel to change the colors below the wheel.

5. Choose the color you want to use from the color grid below the color wheel, .

To change the relationship between the colors on the color wheel

1. Follow steps 1 to 3 from the previous procedure.

2. Choose a hue option from the Hues pop-up menu.

   Each hue option corresponds to a different configuration of circles on the color wheel. Experiment to find the configuration that provides the color set you prefer.

To change the appearance of colors in the color swatches

1. Follow steps 1 to 3 from the "To choose the paint, paper, or fill color" procedure.

2. Choose a color variation from the Variations pop-up menu.

3. Type a number in the Number box to change the number of swatches in the color grid.

Choosing a color by mixing colors

The color mixer lets you select colors from the bitmap in the color selection area and then paint on the bitmap to create new colors. You can use the preset bitmap, or you can load a different bitmap. You can save the bitmap that appears in the color selection area for future use.

To choose the paint, paper, or fill color

1. Do one of the following:

   - Double-click the Paint swatch on the Status Bar to change the paint color.

- Double-click the Paper swatch on the Status Bar to change the paper color.

- Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Mixers button* to display the mixers list.

3. Choose Mixing Area.

4. Click the *Pick Color button.*

5. Choose the color you want to use from the color selection area.

To mix colors in the color selection area

1. Follow steps 1 to 3 from the previous procedure.

2. Click the *Paint button.*

3. Drag in the color selection area to paint inside the color selection area.

   The color you paint is the current color. To change the color follow the steps in the "To choose the paint, paper, or fill color" procedure.

   You can vary the amount of color that you place in the color selection area by moving the Blend slider. Move the slider to the left to add more color or move it to the right to add less.

To change the properties of the paint brush

1. Follow steps 1 to 3 from the "To choose the paint, paper, or fill color" procedure.

2. Click the More button if the dialog box isn't expanded.

3. Click the Options button, choose Brush Size, and choose the size you want to use.

4. Click the Options button, choose Brush Type, and choose the type you want to use.

To change the bitmap in the color selection area

1. Follow steps 1 to 4 from the "To choose the paint, paper, or fill color" procedure.

2. Click the More button if the dialog box isn't expanded.

3. Click the Options button, and choose Load Bitmap.

4. Choose the filename of the bitmap you want to use.

5. Click Open.

- If you want to use an empty color selection area, click the Options button and choose Clear Bitmap.

- If you want to save the bitmap in the color selection area, click the Options button and choose Save Bitmap.

Choosing a color from a fixed color palette

The PANTONE MATCHING SYSTEM fixed color palettes is a spot color; the Focoltone, TOYO COLOR FINDER, and DIC fixed color palettes can be treated as spot colors or as composite colors. If you create color separations when you print, each color from these palettes requires a separate printing plate. This can significantly increase the cost of your print job. While the Focoltone, TOYO COLOR FINDER, and DIC fixed color palettes can be treated as spot colors or as composite colors, the PANTONE MATCHING SYSTEM color palettes, can be converted from spot colors to process colors when you print. See "Creating color separations" on page 510 for more information.

To choose the paint, paper, or fill color

1. Do one of the following:

   - Double-click the Paint swatch on the Status Bar to change the paint color.

   - Double-click the Paper swatch on the Status Bar to change the paper color.

   - Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Fixed Palettes button.*

3. Choose a palette from the Type pop-up menu.

4. Click the color scroll bar to change the range of colors displayed in the color selection area on the left.

5. Choose the color you want to use.

To hide or display the names of the colors

1. Follow steps 1 to 3 from the previous procedure.

2. Click the More button if the dialog box isn't expanded.

3. Click the Options button, and choose Show Color Names from the pop-up menu.

   A check mark beside the command name indicates that the option is enabled.

• You have the option of changing the Focoltone, TOYO COLOR FINDER, and DIC fixed color palettes from spot colors to composite colors. To change any or all of these color palettes from spot colors to composite colors choose Edit, Preferences, Global, General and disable the check boxes that correspond to the palette you want to convert.

• If a fixed color palette supports tints for each of its colors, you can change the tint by typing a value in the Tint box.

Choosing a color from a custom color palette

A custom color palette can include colors from any color model or fixed color palettes.

To choose the paint, paper, or fill color

1. Do one of the following:

   • Double-click the Paint swatch on the Status Bar to change the paint color.

   • Double-click the Paper swatch on the Status Bar to change the paper color.

   • Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Custom Palettes button.*

3. Choose a palette from the Type pop-up menu.

4. Click the color scroll bar to change the range of colors displayed in the color selection area on the left.

5. Choose the color swatch you want to use.

To display or hide the names of the colors

1. Follow steps 1 to 3 from the previous procedure.

2. Click the More button if the dialog box isn't expanded.

3. Click the Options button, and choose Show Color Names from the pop-up menu.

   A check mark beside the command name indicates that the option is enabled.

- Only the currently loaded palettes are displayed in the Type pop-up menu. You can load another palette by choosing Window, Color Palette, Palette Editor, clicking the Open button and specifying a folder and filename.

- The User Defined Inks are all custom spot colors. If you create color separations when you print, each color from this palette requires a separate printing plate. This can significantly increase the cost of your print job. If you want to use these colors but you don't want to use spot colors, then you can convert spot colors to process colors when you print. See "Creating color separations" on page 510 for more information.

Choosing a color by setting numeric values

You can change a color by changing the values of its color components. The color components you can change depend on the color model being used to define the color. See "Working with color" on page 317 for more information about color models.

To choose the paint, paper, or fill color

1. Do one of the following:

   - Double-click the Paint swatch on the Status Bar to change the paint color.

   - Double-click the Paper swatch on the Status Bar to change the paper color.

   - Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Color Viewers button.*

3. Click the More button if the dialog box isn't expanded.

4. Choose a color model from the Model pop-up menu.

   The color model you choose will determine the color values that you can change. For example, if you choose RGB, then the color values are Red, Green, and Blue. If you choose HSB, then the values are Hue, Saturation, and Brightness.

5. Type values in the color value boxes.

    The range of acceptable values varies from color model to color model.

To view RGB, CMYK, HSB, or Lab color values

1. Follow steps 1 to 3 from the previous procedure.

2. Click the Options button, choose Value 1, and choose a color model.

3. Click the Options button, choose Value 2, and choose a color model.

Previewing new colors

The top half of the color swatch at the top right corner of the Color dialog box displays the reference color. The bottom half displays the new color that you have chosen. The reference color is the current color unless you swap the new color with the reference color.

To choose the paint, paper, or fill color

1. Do one of the following:

    -   Double-click the Paint swatch on the Status Bar to change the paint color.

    -   Double-click the Paper swatch on the Status Bar to change the paper color.

    -   Double-click the Fill swatch on the Status Bar, click the *Uniform Fill button,* and click the Edit button.

2. Click the *Color Viewers button.*

3. Click the More button if the dialog box isn't expanded.

To swap the reference color with the new color

1. Follow all the steps from the previous procedure.

2. Click the Options button, and choose Swap Color.

Working with the on-screen Color Palette

The on-screen Color Palette provides quick access to the colors you use most. You can display any fixed or custom color palettes in the on-screen Color Palette. The on-screen Color Palette can either be docked to one edge of the Screen or be made to float as a separate screen. You can also change the appearance and size of the on-screen Color Palette to suit your needs.

Changing the colors in the on-screen Color Palette

You can change the on-screen Color Palettes to an entirely different color palettes. If you want to change individual colors, see "Customizing color palettes" on page 330.

To change all the colors in the on-screen Color Palette

• Choose Window, Color Palette, and choose the color palette you want to use.

To load a new color palette in the on-screen Color Palette

1. Choose Window, Color Palette, and choose Palette Editor.

2. Click Open.

3. Locate the folder where the palette is stored from the Look In list.

4. Select the filename and click open.

• Spot colors in the on-screen Color Palette are marked by a dot in the bottom left corner of the color swatch.

Changing the position and size of the on-screen Color Palette

The on-screen Color Palette behaves like a toolbar. You can dock or undock it and change its size.

To undock the on-screen Color Palette

• Drag the gray area (outside the color swatches) of the on-screen Color Palette away from the edge of the Screen.

To dock the on-screen Color Palette

• Drag the on-screen Color Palette to any edge of the Screen.

To specify the number of rows in a docked on-screen Color Palette

1. Hold down Control, and click the gray area of the on-screen Color Palette, and choose Properties.

2. Type a value in the Maximum Number Of Rows While Docked box.

Customizing the on-screen Color Palette

Change the appearance of the on-screen Color Palette to match the way you work.

To use large swatches

1. Hold down Control, click the gray area of the on-screen Color Palette, and choose Properties.

2. Enable the Large Swatches check box.

Customizing color palettes

Custom color palettes are collections of colors saved as a color palette file. These palettes can contain both spot colors and colors created using any color model. This product includes many set custom palettes that you can use or you can create new palettes from scratch. Custom palettes are useful when you use the same colors often or when you want to work with a set of colors that all look good together.

Editing an existing custom color palette

Color palettes that are currently loaded appear in the Color Palette pop-up menu. It is possible for several custom color palettes to be loaded at once, but only one color palette can be displayed on the on-screen Color Palette at a time.

To open an existing custom color palette

1. Choose Window, Color Palette, Palette Editor.

2. Click Open.

3. Choose a Palette filename.

To edit a color palette that is currently loaded

1. Choose Window, Color Palette, Palette Editor.

2. Choose the color palette from the Palette pop-up menu.

Creating a custom color palette

When you create a custom color palette, the color palette starts out empty and ready for you to choose the colors you want to include in it.

To create a color palette

1. Choose Window, Color Palette, Palette Editor.

2. Click the New button.

3. Specify a filename.

• If you want to include a description of the color palette, type a description in the text box.

Saving a custom color palette

If you don't save a custom color palette before you exit the Palette Editor, your changes will be lost.

To save a color palette

1. Choose Window, Color Palette, Palette Editor.

2. Click Save.

To save a color palette with a new filename

1. Choose Window, Color Palette, Palette Editor.

2. Click Save As.

3. Specify a filename.

Changing the colors in a custom color palette

The methods for choosing colors in the Palette Editor are identical to the methods available in the Uniform Fill dialog box. See "Choosing colors" on page 318 for information about choosing a color.

To add a color to a custom color palette

1. Choose Window, Color Palette, Palette Editor.

2. Choose a color from the color selection area.

3. Choose a color from the palette area to specify the position of the new color.

   The color is added in the position before the selected color swatch.

4. Click the Add button.

To add multiple colors to a custom color palette

1. Choose Window, Color Palette, Palette Editor.

2. Hold down Shift and choose the colors that you want to add to the palette from the color selection area.

   You can only add multiple colors when you choose colors using the blend color grid, color harmonies, fixed color palettes, or other custom color palettes. You can only select groups of colors that appear consecutively.

3. Click the Add button.

• If the current on-screen Color Palette is a custom color palette, then you can add a color to that palette from the Uniform Fill and Outline Color dialog boxes by clicking the Add To Palette button. The color is placed at the end of the palette.

• From the Uniform Fill and Outline Color dialog boxes, you can add all the colors in a blended colors grid or a color harmonies grid to the current on-screen Color Palette. Add the entire grid by clicking the Options button and choosing Add All Grid Colors To Palette. The colors are placed at the end of the palette.

To replace a color in a custom palette

1. Follow steps 1 to 3 from the "To add a color to a custom color palette" procedure.

2. Click the Replace button.

To remove a color from a custom palette

1. Choose Window, Color Palette, Palette Editor.

2. Choose a color in the palette area.

3. Click the Remove button.

To remove multiple colors from a custom palette

1. Choose Window, Color Palette, Palette Editor.

2. Hold down Shift and choose the color swatches that you want to remove from the palette.

   You can only select groups of colors that appear consecutively.

3. Click the Remove button.

- The Remove button is disabled when you use User Defined inks because User Defined inks are referenced based on their position in the palette rather than by the colors themselves.

- If you want to know if a color similar to the one you have selected in the color selection area is already in the custom palette, click the Find Closest button. This button finds the color in the current custom palette that is closest to the color you have selected.

- Click the Reset button to return the palette to the state it was in when you began making changes.

- You can change the order of colors in a custom color palette by clicking the Sort button and choosing an option. You can also move individual colors by dragging them to a new position in the palette area. The Sort button is disabled when you use User Defined inks.

Naming colors in a custom color palette

Naming colors helps you to keep track of the colors in a custom color palette.

To name a color

1. Choose Window, Color Palette, Palette Editor.

2. Choose a color from the palette area.

3. Type a name in Name box.

To display or hide the names of the colors in a custom color palette

1. Choose Window, Color Palette, Palette Editor.

2. Hold down the Control key, click the color swatch area, then choose Show Color Names from the Options pop-up menu.

   A check mark beside the command name indicates that the option is enabled.

Reproducing colors accurately

Each piece of equipment used to create a document — from scanners to printers — handles color differently. If you don't take these differences into account, the colors you see on screen may not match the colors on the printed page. For example, a monitor displays a different range of colors, or

color gamut, from the range of colors that can be reproduced on a printing press. This means that your document might include colors that appear accurate on your monitor but can't be reproduced on paper. Furthermore, different monitors, scanners, printers, and other types of equipment all have slightly different color gamuts. For colors to be accurately translated from device to device, you have to account for the differences between the color gamuts of each device. The process of managing colors from original images to final output is referred to as color workflows.

Color workflows

Using color profiles to take different color gamuts into account helps you manage color as you create a document. A color profile is a file containing a description of a device's color handling capabilities and characteristics. Accurate color profiles of your scanner, monitor, and printer make it possible for colors to be corrected so that the colors you see on screen match the colors you see in the final output.

Color profiles are used to correct on-screen colors so that each color is displayed as accurately as possible, based on its color values. Color profiles are also used to display colors on screen as they will appear when they are printed and can warn you when a color you have selected is outside of the printer's color gamut. You can also apply a color profile to a file when you open a Corel PHOTO-PAINT file.

The International Color Consortium (ICC) has defined a standard format for color profile files. Corel's color management system uses ICC profiles. Corel software can use ICC profiles embedded in RGB TIFF images to map the image's colors to Corel software's internal color gamut. Also, you can embed a color profile in TIFF images using the ColorSync Plug-ins provided with ColorSync 2.5. However, Corel's RGB data is in sRGB profile (the RGB color space for Corel products), therefore, in order to save disk space and make RGB TIFF files smaller and easier to share, we recommend that you not embed the color profiles when saving an RGB TIFF.

- CMYK graphics and images created in or imported into Corel applications are not modified by CMYK profiles because CMYK images include many print-specific characteristics, such as GCR, total ink coverage, and maximum black.

ColorSync 2.5

ColorSync 2.5 is a color management system that works in conjunction with the Macintosh operating system. When using the ColorSync 2.5 color management system, first change the ColorSync color profiles in the

Monitors & Sound control panel. The system profile in the ColorSync control panel is identical to the monitor profile in the Corel application. Changing the ColorSync color profile in the Monitors & Sound control panel lets you select a profile for each monitor in a multiple monitor setup; however, Corel's color management system only recognizes one monitor profile. Therefore, always use the primary monitor to check color accuracy.

• When color correction is enabled, on-screen colors might look duller than they did before you selected color correction. Although this may seem like a disadvantage, keep in mind that the brighter colors you selected before couldn't be reproduced in the final printed output.

Correcting color

Color correction adjusts screen colors so that they are displayed as accurately as possible. If you only color correct display colors, then the on-screen colors are adjusted according to your monitor's color profile. If you also display colors as they will print then the on-screen colors are adjusted according to your monitor's color profile and your printer's color profile. The color matching mode determines how colors are adjusted when corrections are necessary.

To color correct display colors

1. Choose Edit, Preferences.
2. From the list of categories, double-click Global, Color Management.
3. Enable the Calibrate Colors For Display check box.

To display colors as they will print

1. Follow steps 1 to 3 from the previous procedure.
2. Enable the Display Simulated Printer Colors check box.
3. Do one of the following:
    • Click the Simulate Composite Printer button to display colors as they will print on a composite printer.
    • Click the Simulate Separations Printer button to display colors as they will print on a printer that uses color separations.

To change the color matching mode

1. Follow steps 1 and 2 from the "To color correct display colors" procedure.

2. From the list of categories, choose General.

3. Choose Automatic, Illustration, or Photographic from the Color Matching Mode pop-up menu.

Illustration mode only changes colors that are out of gamut. This means that two colors that look different before you enable color correction may look identical afterwards. This happens because the out-of-gamut color is adjusted, but the other color is not.

Photographic mode shifts all the colors in an image so that the range of colors lies within the color gamut. This ensures that the relationship between each color is unchanged. In this case, two colors that look different before you enable color correction will still look different afterwards, but the colors themselves may shift.

Automatic mode uses either illustration mode or photographic mode, depending on the type of object. Bitmaps use photographic mode, text and graphics use illustration mode. Automatic mode is the default.

- You won't see the effects of changing the color mode on screen if color correction is not enabled.

Viewing out-of-gamut colors

When enabled, the gamut alarm overlays out-of-gamut colors with a warning color.

The bright green portions of the sunflower represent out-of-gamut colors.
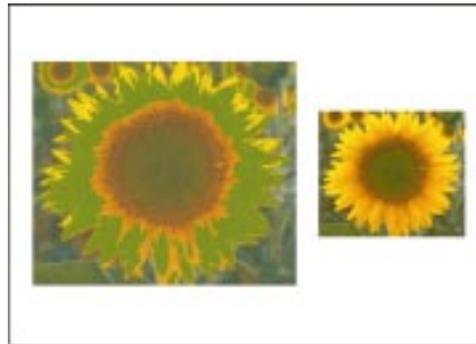
To enable the gamut alarm

1. Choose Edit, Preferences.

2. In the list of categories, double-click Global, Color Management.

3. Enable the Calibrate Colors For Display check box.

4. Enable the Highlight Colors Out Of Printer Gamut check box.

To change the warning color

1. Follow all the steps from the previous procedure.

2. Choose a color from the Warning Color color picker.

3. Move the transparency slider to the right to make the warning color more transparent. Move the slider to the left to make the warning color less transparent.

To view out-of-gamut colors in the Color dialog box

1. In the Color dialog box, click the More button to expand the dialog box.

2. Click the Options button, and choose Gamut Alarm.

- A picture of a printer with a red line through it is displayed next to the color preview swatch in the Color dialog box when the current or new colors are outside the printer's color gamut. Click the right side of the color preview swatch to change the color on the left to the closest color within the color gamut.

Setting color profiles

Setting color profiles properly is required for accurate color reproduction. When you are setting up a color profile, try to use the profile provided by Corel if it is available for your device. If color profiles are not available, try to obtain a professionally created profile from the manufacturer of the device. Color profiles are also often available through the Internet.

To set the appropriate color profiles

1. Choose Edit, Preferences.

2. In the list of categories, double-click Global, Color Management, and choose Profiles.

3. Choose a profile from the Monitor, Scanner, Composite Printer, and Separations Printer pop-up menus.

To apply a color profile during import

1. Choose File, Open.

2. Choose the bitmap image you want to import.

3. Enable the Apply Selected Profile check box.

- Only RGB bitmap images can have a color profile applied during import. CMYK bitmaps are always imported without change.

- An alert will appear when importing an RGB TIFF file with an embedded color profile, asking if you want to use the embedded color profile.

- Many of the supplied printer color profiles were created using ColorBlind color management software. For more information about ColorBlind and color profiles, contact Color Solutions, Inc. at http://www.color.com.

CONVERTING IMAGES 9

When you convert an image to another color mode in Corel PHOTO-PAINT, you change the structure of the colors in the image. This change can affect how the image is displayed and printed and can also affect its file size. Before you convert an image and alter its color characteristics, remember that you are actually shifting the bitmap to a different color space and this can result in a loss of information.

Color modes

When you open, print, and save images in Corel PHOTO-PAINT, the colors that you see are based on color modes. Color modes define the color characteristics of an image and are described in terms of their component colors and bit depth. For example, the RGB (24-bit) color mode is composed of red, green, and blue values and has a bit depth of 24 bits (which means that it can produce 16 million colors). Similarly, the CMYK (32-bit) color mode is composed of cyan, magenta, yellow, and black values and has a bit depth of 32 bits (which means that it can produce over 4 billion colors).

Although you may not be able to view the difference between an image in the CMYK color mode and an image in the RGB color mode on screen, the two images are quite different. Colors from the RGB color space can range over a larger portion of the visual spectrum (they have a larger gamut) than those from the CMYK color space. For the same image dimensions, a CMYK image has a larger file size than an RGB image. RGB is the default color mode for Corel PHOTO-PAINT images.

There are ten color modes available in Corel PHOTO-PAINT:

Color modes

Black-and-White (1-bit)	Grayscale (8-bit)
Duotone (8-bit)	Paletted (8-bit)
RGB (24-bit)	Lab (24-bit)
CMYK (32-bit)	Multichannel
Grayscale (16-bit)	RGB (48-bit)

You can also convert your images to a video color mode called NTSC RGB. Converting your 24-bit RGB images to the video color mode creates images with colors that are suitable for television reproduction. This prevents oversaturation and retains the integrity of your image when it is broadcast.

• For more information about color modes and color models, see "Working with color" on page 317.

Changing the color mode of an image

In addition to determining the number of colors that an image can contain, color modes affect the number of channels and the file size of an image. When you convert an image from one color mode to another, you not only change the way that your computer deals with the image, you also shift the image into another color space. Color spaces are models used to organize visual color. When you shift an image from one space to another, the appearance of the image can change noticeably. For example, when you convert an RGB image to the CMYK color mode, the color values in the RGB color gamut (the range of colors that a device, such as a monitor or color printer, can produce or detect) that lie outside the CMYK color gamut are adjusted to fall within the CMYK color gamut. The subtle color values that are lost in conversions cannot be recovered by converting back to the original color mode.

An image is converted from the RGB color mode to the CMYK color mode.

You can avoid losing color information by editing the image in its original mode and then converting it to a new color mode. If you want to edit the original image after you convert it or if you want to convert the image to many different color modes, save a copy of the file before you convert. Images in some color modes cannot be converted directly to other color modes. Color modes that are not available for the active image are disabled in the Image menu.

Converting to Black-and-White

The Black-and-White color mode is a 1-bit color mode that stores images as two solid colors — black and white — with no gradations. You can convert images to the Black-and-White color mode to create line art and simple graphics.

Converting to Grayscale

Each pixel in a grayscale image has a brightness value ranging from 0 (black) to 255 (white). The 8-bit Grayscale color mode uses these 256 shades of gray to display an image. You must convert an image to the Grayscale color mode before you can convert it to the Duotone color mode.

Converting to RGB

RGB images have three 8-bit channels. Each channel is assigned one of the primary colors — red, green, or blue. The RGB color mode is the default color mode for new Corel PHOTO-PAINT images and is the color mode that computer monitors use to display colors. Corel PHOTO-PAINT also supports 48-bit RGB images. Support for the 48-bit RGB color mode lets you preserve the color fidelity of images that you have scanned in with a 48-bit scanner.

Converting to Lab

The Lab color mode creates color based on luminance or lightness (L) and two chromatic components: "a" and "b." The "a" component consists of colors that range from green to red and the "b" component consists of colors that range from blue to yellow. You can use the Lab color mode to edit the luminance and color values of an image independently. The Lab color mode is device-independent, which means that it creates images that contain the same colors regardless of the monitor, printer, or computer used to output them. Therefore, you can also use it to move images between systems and for printing to PostScript Level 2 printers.

Converting to CMYK

You can use the CMYK color mode to print images with the process colors that are used to print color separations. When you convert an image to the

CMYK color mode, each pixel in the original image is assigned a value for each of the corresponding process inks. The CMYK color mode is device-dependent, which means that image reproduction is based on the characteristics of the monitor, computer, or printer used to output the image. Before you convert images to CMYK, calibrate your system correctly. The CMYK profiles used to convert images to CMYK are printer profiles. If you don't load a CMYK device profile, a generic color conversion profile is used. For more information about calibration, see "Working with color" on page 317.

Converting to Multichannel

Multichannel images contain multiple grayscale channels. Each channel has 256 levels of gray. When you convert an image to the Multichannel color mode, the original color channels are converted to grayscale information. For example, if you convert an RGB image to the Multichannel color mode, the values in the RGB color channels — red (R), green (G), and blue (B) — are converted to separate grayscale values. Images in the Multichannel color mode are often used for specialized printing purposes.

Converting an image to the Black-and-White color mode

You can convert any image to the 1-bit Black-and-White color mode. There are four Black-and-White conversion options: Line Art, Ordered, Error Diffusion, and Halftone. If you choose Line Art or Halftone conversion methods, you can set additional options, such as threshold and screen type.

An image is converted from the RGB color mode to the Black-and-White color mode.
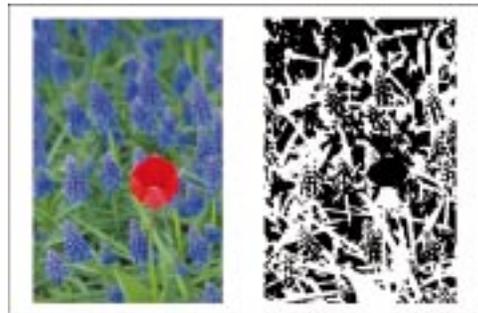
To convert an image to the Black-and-White color mode

1. Choose Image, Convert To, Black And White (1-bit).

2. Enable one of the following buttons in the Conversion Method section:

- Line Art — produces a high contrast black-and-white image. You can type a value in the Threshold box. All colors with a grayscale value lower than this threshold value turn black; all colors with a grayscale value higher than the threshold value turn white.

- Ordered — organizes the gray levels into repeating geometric patterns of black and white pixels. Solid colors are emphasized and image edges are hard. Ordered dithering is best suited to uniform colors such as those that appear in charts and graphs.

- Error Diffusion — scatters black and white pixels randomly, making edges and colors softer. Error diffusion is best suited to photographic images.

- Halftone — creates different shades of gray by varying the pattern of black and white pixels on the image. You can choose the screen type, lines per unit, and angle for the halftone.

Converting an image to the Grayscale color mode

Although grayscale images are often referred to as "black-and-white," they are actually composed of many shades of gray, ranging from black to white. You can convert Corel PHOTO-PAINT images to the 8-bit or 16-bit Grayscale color mode. The bit depth that you choose can affect the file size and display quality.

An image is converted from the RGB color mode to the Grayscale color mode.
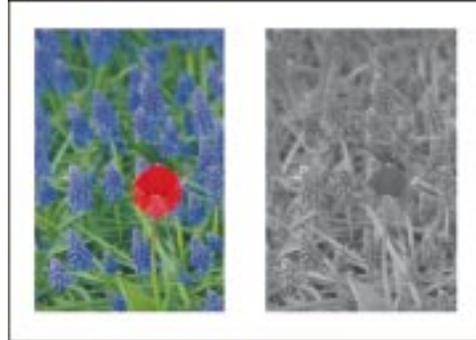
To convert an image to the 8-bit Grayscale color mode

- Choose Image, Convert To, Grayscale (8-bit).

To convert images to the 16-bit Grayscale color mode

- Choose Image, Convert To, Grayscale (16-bit).

Converting an image to the RGB color mode

When you convert images to the RGB color mode, they are displayed using varying amounts of red (R), green (G), and blue (B). You can convert Corel PHOTO-PAINT images to the 24-bit or 48-bit RGB color mode. The bit-depth that you choose can affect the file size and display.

An image in the CMYK color mode is converted to the RGB color mode.
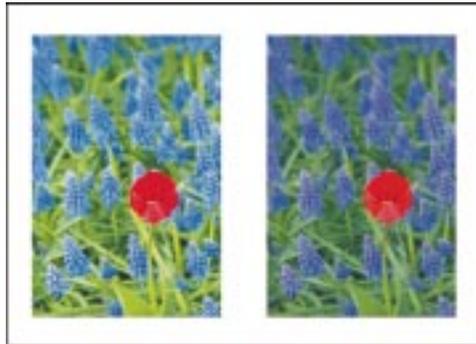
To convert an image to the 24-bit RGB color mode

• Choose Image, Convert To, RGB Color (24-bit).

To convert an image to the 48-bit RGB color mode

• Choose Image, Convert To, RGB Color (48-bit).

• Although the 48-bit RGB color mode improves image quality and reduces image-correction requirements, it also inflates the file size and is limited by hardware capabilities. Standard RGB monitors cannot display 48-bit RGB images; the images are converted to 24-bit RGB for display.

• The 48-bit RGB color mode produces images using trillions of colors; however, the human eye is not capable of this tonal discernment.

Converting an image to the CMYK color mode

The CMYK color mode is based on cyan, magenta, yellow, and black inks. You can use the CMYK color mode to create professional-quality images that you can print to color separations or to a CMYK printer.

To convert an image to the CMYK color mode

• Choose Image, Convert To, CMYK Color (32-bit).

• When you convert images from the RGB color mode to the CMYK color mode, you shift them to a smaller color space, which results in a loss of color information. The color of your RGB image can change noticeably.

Converting an image to the Lab color mode

Lab is a 24-bit color mode that creates color using three components: luminosity (L), green/magenta (a), and blue/yellow (b). Because the Lab color mode is device-independent (color is not determined by an output device), it is used to transport images from one platform to another. Only grayscale, RGB, CMYK, and Multichannel images can be converted to the Lab color mode.
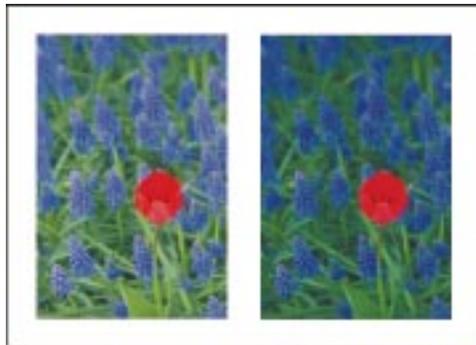
To convert an image to the Lab color mode

• Choose Image, Convert To, Lab Color (24-bit).

The Multichannel color mode contains multiple channels — each composed of 256 levels of gray. You can convert images composed of more than one channel (such as Lab, RGB, and CMYK) to the Multichannel color mode.

An image is converted from the RGB color mode to the Multichannel color mode. The Red color channel is displayed.
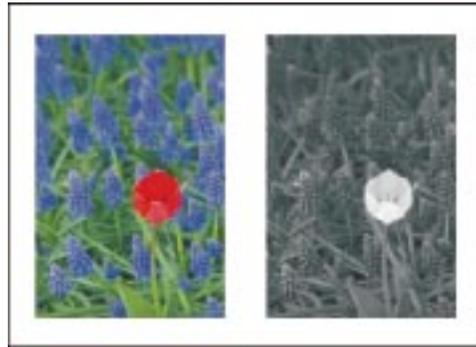
To convert an image to the Multichannel color mode

• Choose Image, Convert To, Multi-Channel.

Converting images to the Paletted color mode

The Paletted color mode is an 8-bit color mode that stores and displays images using up to 256 colors. You can convert a complex image to the Paletted color mode to reduce file size — which is especially important for Internet publications.

When you convert an image to the Paletted color mode, Corel PHOTO-PAINT creates a color palette that lists the colors in the image. Corel PHOTO-PAINT can produce the colors for the palette from the image itself, from predefined palettes, or from custom palettes originally created using other images. For more precise control over the colors contained in the color palette, you can specify the number of colors and the range sensitivity to be applied throughout the conversion.

Smoothing

When you smooth an image, Corel PHOTO-PAINT analyzes the color differences around each pixel in your image and blends the color transitions where abrupt color changes occur. Smoothing creates a softly blurred appearance on the image.

Dithering

Dithering is a method of enhancing the appearance of photographic images that use a limited color palette. Dithering places pixels with specific colors or

values relative to other pixels of a specific color. The relationship of one colored pixel to another helps to create the appearance of additional colors that do not actually exist in the palette. There are two types of dithering: error diffusion and ordered dithering. Error diffusion scatters pixels irregularly, making edges and colors softer. Ordered dithering approximates color blends using fixed dot patterns; as a result, solid colors are emphasized and edges are harder.

Range sensitivity

When you use the Optimized Color Palette to convert an image to the Paletted color mode, you can specify a range sensitivity color. This color acts as a target color for the conversion; i.e., more colors in the specified color's range are used in the conversion. You can also determine how much emphasis is placed on this color (and others related to it) and customize its appearance. You can then preview the color palette that will be used in the image conversion.

An image is converted to the Paletted color mode. Range sensitivity is set for the blue colors in the image.
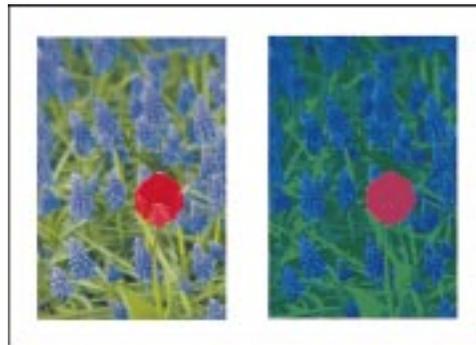
Batch conversion

You can convert multiple files to the Paletted color mode by setting batch conversion options. You can specify which files you want to convert and preview each image before applying the conversion. All the images that you include in the batch are converted using the color palette and conversion options that you've specified.

Color Table

After you convert an image to the Paletted (8-bit) color mode, you can use the Color Table to customize the color palette of the image. A custom color palette is a collection of colors saved in a Color Palette file format. Custom color palettes can contain both spot colors and colors created using any color model. They are useful when you often use the same colors or when you want to work with a set of colors that all look good together. For more

information about creating custom palettes, see "Customizing color palettes" on page 330.

Converting an image to the Paletted color mode

You can convert images to the Paletted color mode by choosing a color palette type.

To convert an image to the Paletted color mode

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose the Options tab.

3. Choose a palette type from the Palette pop-up menu.

   - Uniform — provides a range of 256 colors with equal parts of red, green, and blue

   - Standard VGA — provides the Standard VGA 16-color palette

   - Adaptive — provides colors original to the image and preserves the individual colors (the entire color spectrum) in the image

   - Optimized — creates a palette based on the highest percentage of colors in the image. You can also select a range sensitivity color for the palette. For more information, see "Choosing a range sensitivity color for a paletted image" on page 350.

   - Black Body — contains colors that are based on temperature, e.g., black (cold), red, orange, yellow, and white (hot)

   - Grayscale — provides 256 shades of gray, ranging from black (0) to white (255)

   - System — provides the predefined palette of colors used by the Mac OS

   - Microsoft Internet Explorer — provides the predefined Microsoft Internet Explorer colors

   - Netscape Navigator — provides the predefined Netscape Navigator colors

   - Custom — allows you to add colors to create your own customized color palette. If you choose Custom, click the Open button beside the Palette pop-up menu, locate the custom palette in the Open Palette dialog box, and click Open.

4. Choose a dithering option from the Dithering pop-up menu.

   - None — disables dithering

- Ordered — approximates color blends using fixed dot patterns. This dithering type applies more quickly than Error Diffusion but is less accurate.

- Error Diffusion — approximates color blends by scattering pixels irregularly, making edges and colors softer

- You can also set conversion options by choosing a preset conversion setting from the Presets pop-up menu.

- You can preview the colors that will be used to create the paletted image on the Processed Palette page in the Convert To Paletted dialog box. Previewing lets you alter the conversion options without permanently affecting the image.

Saving and loading conversion options for a paletted image

After you choose a palette and set the dithering and range sensitivity for the conversion of the image, you can save the selected options as a conversion preset for use with other images. You can add and remove as many conversion presets as you want directly in the Convert To Paletted dialog box. For each image conversion, you can load and apply a different conversion preset or a custom color palette that is appropriate for the specific image.

To save the conversion options

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose the Options tab.

3. Set the conversion options.

4. Click the *Add button*.

5. In the Save Preset dialog box, type a name in the Save New Preset As box.

To load preset conversion options

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose a conversion preset from the Presets pop-up menu.

To load a custom color palette

1. Choose Image, Convert To, Paletted (8-bit).

2. Click the Open button.

3. Locate the folder where the color palette is stored.

4. Choose the filename.

• You can remove a conversion preset by choosing its name from the Presets pop-up menu and clicking the Remove button.

Choosing a range sensitivity color for a paletted image

When you choose a range sensitivity color for an image, that color acts as the focus color for the paletted conversion, i.e., the range sensitivity color determines which colors are included in the palette for the image conversion. You can also adjust the range sensitivity color and specify how important that color is in the image that you are converting. The Range Sensitivity option is available only when you choose the Optimized palette type.

To choose a range sensitivity color for a paletted image

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose the Options tab.

3. Choose Optimized from the Palette pop-up menu.

4. Enable the Color Range Sensitivity To check box.

5. Click the *Eyedropper tool,* and choose a color from the image.

6. Choose the Range Sensitivity tab.

7. On the Range Sensitivity page, move any of the following sliders:

   • Importance — determines how much emphasis is placed on the range sensitivity color (and others related to it) in the conversion. Higher importance values mean that more shades of this color are included in the color palette — to the point where other colors in the image are excluded. The conversion is concentrated on the areas of the image that contain the range sensitivity color.

   • Lightness — adjusts the tolerance sensitivity of the conversion process to the lightness component of the range sensitivity color

   • A (Green Red Axis) slider — adjusts the tolerance sensitivity of the conversion process to the green/red component of the range sensitivity color

- B (Blue Yellow Axis) — adjusts the tolerance sensitivity of the conversion process to the blue/yellow component of the range sensitivity color

8. Choose the Processed Palette tab to preview the colors that you've chosen for the palette.

- You can also choose a range sensitivity color by clicking the Color Range Sensitivity To color picker and choosing a color or creating a custom color.

- You can reset the range sensitivity color by clicking the Reset button on the Options page of the Convert to Paletted dialog box.

- You can reset a range sensitivity option by clicking the Reset button beside the option name on the Range Sensitivity page. If you want to reset all values on the Range Sensitivity page, click the Reset All button.

Editing the processed palette

After you choose a palette for the image conversion, you can customize it by editing individual colors.

To edit the processed palette

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose the Processed Palette tab.

3. Click the Edit button.

4. Use the commands and controls in the Color Table to edit the selected color.

- For more information about creating custom palettes, see "Customizing color palettes" on page 330.

- You can also open the Color Table by choosing Image, Color Table.

Saving the processed palette

After you create and customize a palette for the image conversion, you can save it as a Custom Palette file for use with other applications.

To save the processed palette

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose a palette, and set conversion and range sensitivity options.

3. Choose the Processed Palette tab to view the colors in the selected palette.

4. Click Save.

5. Locate the folder where you want to save the palette.

6. Specify a filename, and click Save.

Converting multiple files

You can convert multiple files to the Paletted color mode simultaneously. Before you perform a batch conversion, you must open the files in Corel PHOTO-PAINT. All the images that you include in the batch are converted using the palette and conversion options you've specified on the Options page in the Convert To Paletted dialog box.

To convert multiple files

1. Choose Image, Convert To, Paletted (8-bit).

2. Choose the Batch tab.

   The name of the active file is displayed in the right column on the Batch page. The names of all other open files are listed in the left column.

3. From the left column, choose each file you want to convert, and click the Add button.

To preview an image in the batch conversion list

- Choose an image from the Preview Image pop-up menu.

- You can include all open files in the batch conversion by clicking the Add All button.

- You can remove a file from the batch by choosing its name and clicking the Remove button. The Remove All button removes all files from the batch.

Converting images to the Duotone color mode

A Duotone image is a grayscale image that has been enhanced with one to four additional colors. It can be monotone, duotone, tritone, or quadtone.

Duotone type	Description
Monotone	A grayscale image created using a single ink
Duotone	A grayscale image created using two inks. In most cases, the first ink is black and the second is colored.
Tritone	A grayscale image created using three inks. In most cases, the first ink is black and the second and third inks are colored.
Quadtone	A grayscale image created using four inks. In most cases the first ink is black and the second, third, and fourth inks are colored.

Tone curves

When you convert a grayscale image to the Duotone color mode, the Duotone dialog box displays a tone curve grid that consists of dynamic ink curves that will be used throughout the conversion. The horizontal plane (x-axis) displays the 256 possible shades of gray in a grayscale image (0 is black; 255 is white). The vertical plane (y-axis) illustrates the intensity of an ink (from 0 to 100 percent) that is applied to the corresponding grayscale values. For example, a grayscale pixel with a color value of 25 is printed with a 25-percent tint of the ink color. By adjusting the tone curves, you can control the color and intensity of the ink that is applied to your image. After the image conversion, you can edit the tone curves at any time.

Overprint colors

After you adjust the tone curves for the duotone conversion, you can further customize the colors that are used to display the image by choosing overprint colors. Overprint colors are the colors that appear on the image when two or more colors overlap. When the image is displayed, each color is applied on the screen in sequence, creating a layered effect.

The Overprint page in the Duotone dialog box displays all instances in which the colors you choose for the duotone conversion can overlap. Associated with each instance is the color that is produced by the overlap. You can also choose new overprint colors to customize the appearance of the image after the conversion.

Converting a grayscale image to the Duotone color mode

You can convert grayscale images to the Duotone color mode when you want to add hints of color to the grayscale values. You can convert a grayscale image using one, two, three, or four inks. You can change the ink colors that are applied as enhancement to the duotone image by choosing new colors. After you choose the ink colors, you can fine-tune the shade for each of them by adjusting the respective tone curve on the display grid.
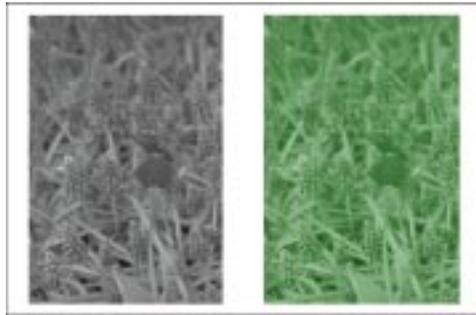
To convert a grayscale image to the Duotone color mode

1. Choose Image, Convert To, Duotone (8-bit).

2. Choose the Curves tab.

3. Choose an option from the Type pop-up menu:

   - Monotone — creates a grayscale image that is printed with a single ink

   - Duotone — creates a grayscale image that is printed with two inks. In most cases, one ink is black and one is colored.

   - Tritone — creates a grayscale image that is printed with three inks. In most cases, one ink is black and the others are colored.

   - Quadtone — creates a grayscale image that is printed with four inks. In most cases, one ink is black and the others are colored.

To choose a new ink color for duotone conversion

1. Follow steps 1 to 3 from the previous procedure.

2. Double-click an ink color in the Type window.

3. In the Select Color dialog box, choose a new color for the ink.

To adjust the duotone curve of an ink

1. Follow steps 1 to 3 from the "To Convert a grayscale image to the Duotone color mode" procedure.

2. Choose an ink color from the Type window.

   The corresponding ink tone curve appears on the grid to the right.

3. Click the ink tone curve on the grid to create a node.

4. Drag the node to adjust the percentage of color at that point on the curve.

- You can enable the Eye icon to preview the image in the Duotone color mode.

- You can enable the Show All check box to display all of the ink tone curves on the grid at once.

- You can click the Null button to return the current ink tone curve to its default position on the grid.

- You can reset all the options on the Curves page of the Duotone dialog box by clicking the Reset button.

Loading and saving inks for duotone conversions

After you choose a duotone type and customize the tone curves for the inks that will be used in the image conversion, you can save the settings for use on other images. The next time you want to convert an image to the Duotone color mode, you can load the saved inks directly in the Duotone dialog box.

To save inks for duotone conversion

1. Choose Image, Convert To, Duotone (8-bit).

2. Choose the Curves tab.

3. Click Save.

4. Locate the folder where you want to save the duotone file.

5. Specify a filename, and click Save.

To load inks for duotone conversion

1. Follow steps 1 and 2 from the previous procedure.

2. Click the Load button.

3. Locate the folder where the duotone file is stored.

4. Choose the filename, and click Open.

Specifying how overprint colors display on screen

You can determine how overprint colors display on your image by modifying the colors in the Duotone dialog box.
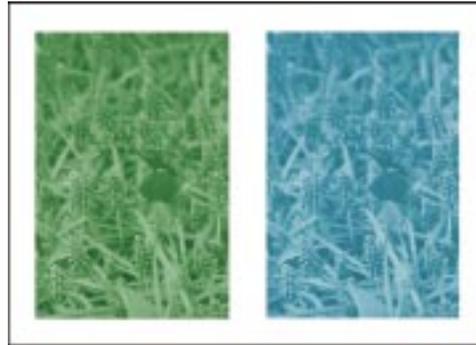
To specify how overprint colors display on screen

1. Choose Image, Convert To, Duotone (8-bit).

2. Choose the Overprint tab.

3. Enable the Use Overprint check box.

4. Double-click the color that you want to edit.

5. From the Select Color dialog box, choose a new overprint color.

- You can preview the original color and the new overprint color by clicking the More button in the Select Color dialog box. For more information about choosing and previewing colors, see "Choosing colors" on page 318.

- You can reset an overprint color by clicking the Reset Current button. You can reset all overprint colors by clicking the Reset All button.

- The More button may not be visible if the dialog box was previously expanded.

Converting images to video

The National Television Standards Committee (NTSC) Colors video filter defines the gamut of colors used by television monitors in different areas of the world. If you have created an image that you want to use in a television broadcast, you can use this filter to restrict the image's gamut of colors to those acceptable for television reproduction. This prevents oversaturated colors from bleeding across television scan lines and preserves the integrity of the image in the new forum. If you do not convert your image to the appropriate video mode before using it in a television broadcast, the transition from one color to another appears choppy throughout the broadcast

image. The NTSC video filter is commonly used to define the gamut of colors supported by television monitors in North America.

If you intend to use an image in a television broadcast, you must convert it to an appropriate video color mode. The NTSC video filter lets you maintain the image's integrity when it is displayed on television monitors in North America.

To convert images to NTSC video mode

- Choose Image, Convert To, Video, NTSC RGB.

- If you edit your image after converting it to the NTSC RGB mode, Corel PHOTO-PAINT moves the image out of the video color space and the image must be converted again. For best results, convert your image after all edits have been made.

- The NTSC RGB mode is available only for RGB images.

Working with color channels

Many of the features and commands that you can use to adjust the color and quality of your image are applied directly to the color channels that make up the image. Each Corel PHOTO-PAINT image has one or more color channels that hold information about the color elements in the image. The number of color channels in an image depends on the number of elements in the color model associated with the image. For example, an RGB image has three separate color channels, one for red (R), green (G), and blue (B). The R, G, and B color channels store information about how much red, green, or blue is used in each pixel to produce the colors of the image.

When you view the color channels of an image in combination, the resulting composite image displays the entire range of colors in the image. When you view color channels individually, you see a grayscale representation of the color information. Because a color channel is a grayscale image, it can be edited and manipulated in the same way that you would edit or manipulate a grayscale image.

By default, black-and-white, grayscale, duotone, and paletted images have only one color channel. RGB and Lab images have three channels, and CMYK images have four color channels. For more information about these color modes, see "Converting images" on page 339.

Splitting an image into channels

When you use the Split Channels To command, Corel PHOTO-PAINT reads the color information from the current image and creates a series of 8-bit grayscale images — one for each color channel of the color mode you choose. You can split an image that was created in one color mode into the channels associated with another color mode. For example, if you have an oversaturated RGB image, you can reduce the saturation by splitting the image into the HSB model and brightening the saturation (S) channel.

You can split an image into the following color channels:

Color mode	Color channels
RGB	red (R), green (G), blue (B)
CMYK	cyan (C), magenta (M), yellow (Y), black (K)
HSB	hue (H), saturation (S), brightness (B)
HLS	hue (H), lightness (L), saturation (S)
YIQ	luminance (Y), two chromaticity values (I, Q).
Lab	luminosity (L), green/magenta (a) blue/yellow(b)

After you split an image into its component channels, you can edit and modify its attributes. When you finish altering the image, you can combine the component channels and view your changes in the composite channel.

Combining channels

After you split an image into its component color channels, you can combine them again using the Combine Channels or Calculations commands. The channels that you combine can be from any image and can be merged into any color mode. For example, you can combine the R, G, and B, component channels into the HLS color model. Although the image no longer resembles the original, combining channels into new color modes creates some interesting effects.

You can use the Combine Channels command to merge channels using equal values. This means that the channel values, types, merge modes, and opacity levels remain the same throughout the merging process. For more precise control when combining components, you can use the Calculations command to specify the image and channel type, the conversion method, and opacity levels while viewing the effect in a preview window.

Displaying color channels using their respective colors

Although color channels represent the colored components in your image, they are displayed as grayscale images in the Image Window by default.

However, you can also display these channels in their respective tones, so that the red channel is tinted red, the blue channel is tinted blue, and so on.

To display color channels using their respective colors

1. Choose Edit, Preferences.

2. From the Workspace category, choose Display.

3. Enable the Tint Channels check box.

Editing individual color channels on the Channels Palette

Essentially, channels are 8-bit grayscale images that contain information about an image. Because channels are grayscale images, you can edit them in the same way that you edit other grayscale images. You can select areas, apply paints and fills, add special effects or enhancement filters, and cut and paste objects directly in the image channel.

To edit individual channels in an image

1. Choose Window, Palettes, Channels.

2. Choose the channel that you want to edit.

3. Edit the image using any tools or commands.

- Clicking the composite channel on the Channels Palette (i.e., the first channel listed) displays the image with the applied changes.

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Splitting an image into color channels

When you split an image into color channels, a Corel PHOTO-PAINT file is created for each channel and named according to the color component it represents — for example, an RGB image becomes the following three files: RED-0, GREEN-0, and BLUE-0. Splitting an image into channels lets you edit one channel without affecting the others. After you edit a channel, you can recombine it with the other channels, or you can save it as a new file.

A CMYK image is split into its component channels. A new image is created for each channel.
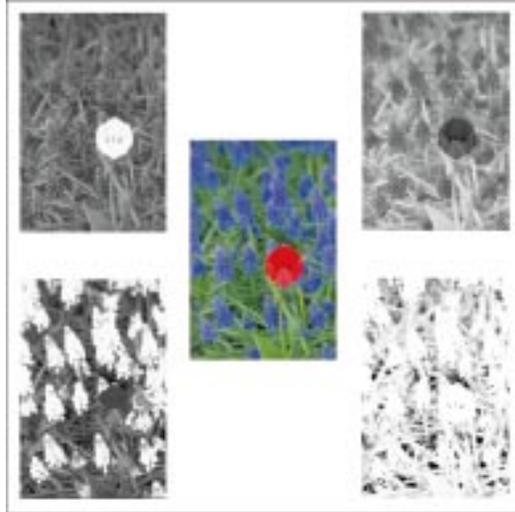
To split an image into channels

• Choose Image, Split Channels To, and choose a color mode.

• CMYK and Lab images must be split into their original component channels. This means that a CMYK image can be split only into C, M, Y, and K channels; a Lab image only into L, a, and b channels.

Combining channels that have been separated

After you split an image into its component color channels, you can recombine the channels at any time. The color mode that you choose for the channel merge does not have to match the image's original color mode. For example, if you split an RGB image into red, green, and blue component channels, you can recombine the individual channel files into the HLS color mode.

When you apply the Combine Channels command, each channel from the target color mode is associated with an existing component channel file of your choice. For example, when you recombine the above mentioned RGB channels into the HLS mode, you can associate any of the H, L, and S channels with any of the existing RED, BLUE, and GREEN component channel files.

To combine channels that have been separated

1. Choose Image, Combine Channels.

2. In the Mode section, enable the button corresponding to the color mode into which you want to combine the channels.

3. In the Channel section, enable a button to choose a channel from the color mode into which you'll combine the split channels.

4. In the Images section, select the image file that you want to associate with the channel you chose in step 3.

- When you recombine color channels using the HSB, HLS, RGB, or YIQ color modes, the resulting image is always in the RGB color mode. When you recombine color channels using the Lab color mode, the resulting image is in the Lab color mode. When you recombine color channels using the CMYK color mode, the resulting image is in the CMYK color mode.

Using the Calculations command

Use the Calculations command to modify an existing image or create a composite image by combining channel data from one image with the channel data of another. A merge mode calculation is performed on the pixels in two source channels. The result of the calculation is then applied to a channel in either of the source images, to an image that is open in Corel PHOTO-PAINT, or to a new file.

An RGB image whose channels have been split to CMYK. Then the cyan (C) and magenta (M) channels were combined.

To combine channels

1. Choose Image, Calculations.

2. In the Source 1 section, choose a filename from the Image pop-up menu.

3. Do one of the following:

   • In the Source 1 section, choose a channel type from the Channel pop-up menu.

   • In the Method section, enable the Use All Channels check box to merge all channels into a full-color image. If the Use All Channels check box is disabled, the result of the calculation is a grayscale mask or color channel (depending on the destination option you choose).

4. In the Source 2 section, choose a filename from the Image pop-up menu.

5. In the Source 2 section, choose a channel type from the Channel pop-up menu.

   If you enable the Use All Channels check box in step 3, the Channels pop-up menu is not available.

6. In the Destination section, choose a filename from the Image pop-up menu.

7. Choose a channel type from the Channel pop-up menu.

   If you enable the Use All Channels check box in step 3, the Channels pop-up menu is not available.

8. In the Method section, choose one of the following options from the pop-up menu beside the Opacity box:

   • Stretch — expands or reduces the combined channel to fit the destination image

   • Clip — places the actual size of the combined channel in the destination image

9. Type a value in the Opacity box to adjust the transparency level of the source images in relation to the destination image.

10. In the Method section, choose a merge mode from the top pop-up menu.

• The merge mode determines how paint is applied to the colors that already exist in your image. For more information about merge modes, see "Choosing a merge mode" on page 132.

• The Calculations command is not available if your image contains objects or if the image background is locked. All objects in your image must be merged with the image background before you perform image calculations.

• You can enable the Invert check box in the Source 1 and Source 2 sections of the Channel Calculations dialog box to invert the grayscale values of the channel being used in the calculation.

APPLYING SPECIAL EFFECTS TO IMAGES 10

You can enhance the appearance of an image in Corel PHOTO-PAINT by applying special effects. The Corel PHOTO-PAINT special effects are filters that execute a predefined series of commands to produce two-dimensional, three-dimensional, and artistic transformations. Most special effects filters affect the entire image; however, you can also apply some special effects to part of an image using a lens.

Working with special effects filters

Effects filters execute a predefined series of commands to produce a specific effect. They automatically calculate the values and characteristics of the pixels in your image and then alter the pixels according to these new values. For example, if you apply the Motion Blur filter to an image, the filter analyzes all pixel values and "smears" the values in a specified direction to create the illusion of motion. You can use the Image Info Palette to display information about the color of image pixels before and after applying an effect. For more information about the Image Info Palette, see "Viewing image information" on page 54.

When applying filters, be aware of the following:

- If you apply an effects filter to an image that contains one or more objects and the background is active, the objects are not affected.

- If an unlocked object is the active item on the Objects Palette, the shape of the object is affected.

- If you apply an effects filter to a floating selection, the background of the image is not affected.

Using lenses to apply special effects filters

Lenses are special kinds of objects you can use to modify defined image areas. Lenses let you apply special effects filters to specific objects or areas in an image without affecting the rest of the image. You can customize the size, shape, and position of lenses in your images and apply the special effects filters to the image area defined by the lens.

Lenses differ from traditional objects because they have clip masks associated with them. Clip masks are masks that let you edit an object's transparency levels without affecting its pixels. When you alter the size or shape of a lens using the Object Picker tool, only the associated clip mask is affected. The change a lens makes is not applied to the image; instead, changes are seen on screen only through the lens. This means that you can make adjustments to an effect and view the results without actually applying the change to the image. You can also use several lenses in the same image to apply successive changes to a specific area.

Once you are satisfied with the effect you've created on screen, you can merge the lenses with the image to make the changes permanent. By merging the lenses with the image, you can significantly decrease the image's file size. For more information about lenses, see "Working with lenses" on page 265. Paletted images do not support lenses.

Using the two-dimensional filters

You can apply two-dimensional special effects filters to an image. The two-dimensional filters transform the appearance of your images without adding depth. You can apply some two-dimensional special effects filters to part of an image using a lens.

Band Pass filter

The Band Pass filter lets you adjust the balance of sharp and smooth areas in an image. Sharp areas are areas on an image where abrupt changes take place (e.g., colors, edges, noise). Smooth areas are areas on an image where gradual changes take place. The Frequency plot displays smooth and sharp areas by associating pixels with frequency levels. Smooth areas of the plot represent low frequencies, while sharp areas represent high frequencies. Pixels in the Frequency plot do not relate spatially to the pixels in the image. By adjusting the radius and weightings of the bands on the Frequency plot, you can screen out unwanted features in your image. A low weighting for the

center of the plot de-emphasizes the smooth areas of the image; a high weighting for the outside of the plot emphasizes image detail. To eliminate unwanted noise, isolate the frequency of the noise within the middle band and reduce its weighting to zero.

Displace filter

The Displace filter alters an image using a displacement map. You can use any of the sample displacement maps provided with Corel PHOTO-PAINT, or you can load any bitmap image as a displacement map. The Displace filter evaluates the color value of pixels in both images and then shifts the active image according to the values of the displacement map. Values from the displacement map appear as forms, colors, and warp patterns in your image. You can shift the active image horizontally or vertically, controlling both the degree and direction of the image's displacement while the displacement map image remains in place.

Edge Detect filter

The Edge Detect filter detects the edges of items in your image and converts them to lines on a single-color background. You can use the Edge Detect filter to add a variety of outline effects to your image. Customize the effect of the Edge Detect filter by specifying the intensity of the outline and the color of the background. For best results, use the Edge Detect filter on high-contrast images, such as images that include text.

Offset filter

The Offset filter lets you correct image positioning. It shifts the image according to the values set using the Horizontal and Vertical Shift sliders. When images are offset, empty areas appear where the images were previously positioned. You can fill the area left empty by the Offset effect using the Wrap Around option, which produces a tiling effect, or the Repeat Edges option, which produces a stretched effect. If all objects in the image have been merged with the background, you can fill the area left empty by the Offset effect with any color you choose. If the image contains one or more objects, you can use the Ignore option to avoid applying the effect to all objects.

Pixelate filter

The Pixelate filter breaks up your image into square, rectangular, or circular cells. Use the Square or Rectangular options to create a blocky, exaggerated, digital appearance, or the Circular option to create a spiderweb effect.

Puzzle filter

The Puzzle filter breaks down the image into puzzle-like pieces or blocks that resemble a jigsaw puzzle. You can control the width, height, and offset to create blocks that range in shape from simple squares to ice shards. You can fill the spaces left between the pieces with a color of your choice, with the original image, or with an inverted version of the original image.

Ripple filter

The Ripple filter creates single or dual-rippled waves across the image. You can select the distance between the wave cycles, the amount of displacement the waves create, and the angle at which the waves travel through your image.

Shear filter

The Shear filter maps the shape of an image to the shape of a line segment. The edges of an image are distorted to follow the path of the line segment that you create in the Shear dialog box. You can create line segments based on curve, linear, freehand, or gamma editing styles. Curve styles let you map an image to the shape of a curved line segment; linear styles let you map an image to the shape of straight line segments; freehand styles let you map an image to the shape of a line segment that you define; and gamma styles let you map an image to the shape of a line segment that is defined by the midtones in the image.

When you apply the Shear filter, the image is reshaped according to the line segment and this can leave empty areas on the image where only the background remains. You can fill the area left empty by the Shear filter by wrapping the opposite edge of the image into the empty area, by stretching the image, or by choosing a color for the exposed areas. If the image contains one or more objects, you can use the Ignore option to let empty areas remain empty. After you choose an editing style and specify how to fill the empty areas in an image, you can customize the line segment by dragging nodes on the shear map, and save it for later use. You can also load any of the preset line segments supplied with Corel PHOTO-PAINT and apply them to your image.

Swirl filter

The Swirl filter creates a spiraling swirl across your image according to the direction, number of whole rotations, and angle you select. The image swirls around a center point that you can reposition. The image swirls in either a clockwise or counterclockwise direction, completing the number of whole rotations you set.

Tile filter

The Tile filter reduces the dimensions of your image and reproduces the image as a series of tiles on a grid. The Horizontal and Vertical values that you set represent the number of images duplicated on each axis. You can use the Tile effect in combination with flood fills to create backgrounds or to preview a wallpaper effect for Web pages.

Trace Contour filter

The Trace Contour filter traces image elements using a 16-color palette. You can specify the intensity of the effect by setting a threshold level. The threshold level is a brightness value that determines which pixels are affected by the Trace Contour filter. You can then choose an edge type. The edge type specifies whether pixels with brightness values that are higher or lower than the threshold are affected. If you choose the Upper edge type, pixels with brightness values above the threshold level are affected, and pixels with a brightness value below the threshold level are not affected. If you choose the Lower edge type, pixels with a brightness value below the threshold level are affected, and pixels with a brightness value above the threshold level are not affected. The Trace Contour filter works best if the subject matter of your image stands out.

User Defined filter

The User Defined filter lets you create your own Blur, Sharpen, or Edge Detect special effects. The User Defined dialog box contains a matrix with 25 boxes (5 X 5). This matrix represents a single pixel of your image (the center box) and its adjacent pixels (the boxes around the center). The values you type in the matrix determine the appearance of the effect that you create. You can type positive or negative values in any distribution over the matrix. If you leave a box in the matrix empty, its value becomes zero.

You can use any of the sample user defined effects supplied with Corel PHOTO-PAINT or you can create custom user defined effects. The sample user defined effects are provided to let you preview the effects that certain values create when typed into the matrix.

Wet Paint filter

The Wet Paint filter creates the illusion of wet paint on an image. The wet paint effect can range from subtle changes in the luminescence of colors to streaks of wet paint that appear to drip down your image. You can specify the size of the drips using the Percentage slider and the range of colors that are affected in the image using the Wetness slider. Negative wetness values cause darker colors to drip, while positive values cause light colors to drip.

Wind filter

The Wind filter blurs your image in a specific direction, creating the effect of wind blowing across your image. You can set the direction, opacity, and strength of the wind effect.

Whirlpool filter

The Whirlpool filter applies a fluid, swirling pattern across your image. You can use any of the preset whirlpool styles supplied with Corel PHOTO-PAINT, or you can create custom styles by setting the smear length, spacing, twist, and streak detail of the whirlpool effect.

Working with the Band Pass filter

The Band Pass filter lets you adjust the balance of sharp and smooth areas in an image. Sharp areas are areas on an image where abrupt changes take place (e.g., colors, edges, noise). Smooth areas are areas on an image where gradual changes take place. Smooth areas of the frequency plot represent low frequencies, while sharp areas represent high frequencies.
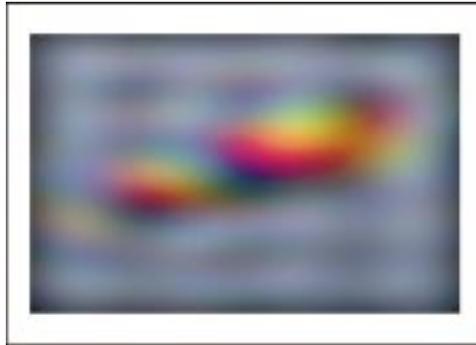
To adjust the balance of sharp and smooth areas

1. Choose Effects, 2D Effects, Band Pass.

2. Move the Inner Radius slider to adjust the radius of the inner frequency levels.

3. Move the Outer Radius slider to adjust the radius of the outer frequency levels.

4. Move the following sliders to adjust the weightings of the frequencies:

   • Inner Band — adjusts the weighting of the inner frequency level. To eliminate smooth areas, set the inner band weighting to zero.

- Middle Band — adjusts the weighting of the middle frequency levels. To eliminate intermediate areas (between sharp and smooth areas), set the middle band weighting to zero.

- Outer Band — adjusts the weighting of the outer frequency levels. To eliminate sharp areas, set the outer band weighting to zero.

- The Band Pass filter performs a number of intensive calculations that may take some time to apply — even on fast computers. Watch the Percent Done indicator on the Status Bar to keep track of the filter's progress.

- The Band Pass filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Displace filter

The Displace filter transforms an image according to the values specified in a displacement map. A displacement map is an image that maps the manner by which pixels in the original image are adjusted when the Displace filter is applied. The pixels in the original image are adjusted according to the pattern of the pixels in the displacement map.
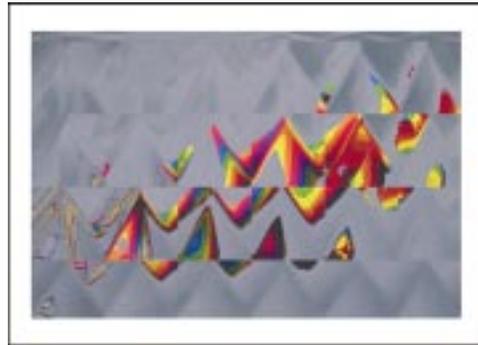
To distort images using a displacement map

1. Choose Effects, 2D Effects, Displace.

2. Click the Load button.

3. Locate the bitmap image you want to use as a displacement map.

4. Choose the filename, and click Open.

5. In the Undefined Areas section, enable one of the following buttons:

   - Repeat Edges — stretches the edges of the image to fill in exposed areas

- Wrap Around — fills the exposed areas with the opposite side of the image

6. In the Scale Mode section, enable one of the following buttons:
   - Tile — repeats the displacement image to cover the image area
   - Stretch To Fit — uses a single map stretched over the entire image area

7. In the Scale section, move the following sliders to set the amount of displacement:
   - Horizontal — shifts images horizontally, from left to right
   - Vertical — shifts images vertically, from top to bottom

- The Displace filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- You can only enable the Repeat Edges and Wrap Around buttons in the Undefined Areas section if you merge all objects with the image background.

Working with the Edge Detect filter

You can highlight the edges of items in your images. The Edge Detect filter detects the edges of items in an image and converts those pixels to lines on a single-color background.
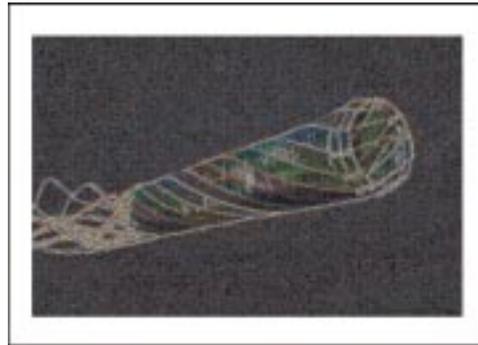
To highlight edges

1. Choose Effects, 2D Effects, Edge Detect.

2. Move the Sensitivity slider to specify the intensity of the effect.

3. Do one of the following:

- Enable the White button to create a white background.

- Enable the Black button to create a black background.

- Enable the Other button, click the color picker, and choose a color for the background.

- Click the *Eyedropper tool,* and click the image to choose a color for the background.

- For best results, use the Edge Detect filter on high-contrast images, such as images that contain text.

- The Edge Detect filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Offset filter

You can use the Offset filter to reposition images in the Image Window.
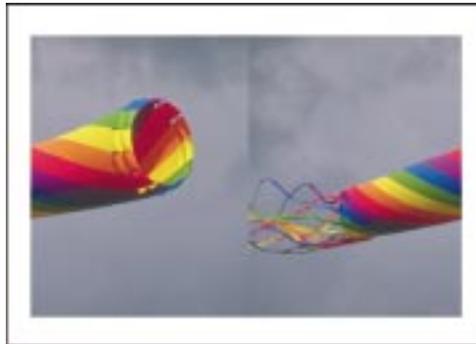
To offset your image

1. Choose Effects, 2D Effects, Offset.

2. Move the following sliders:

- Horizontal — shifts the image horizontally, from left to right

- Vertical — shifts the image vertically, from top to bottom

3. In the Fill Empty Area With section, enable one of the following buttons:

- Wrap Around — fills the exposed areas with the opposite side of the image

- Repeat Edges — stretches the edges of the image to fill in the exposed areas

- Color — fills the exposed areas with the color you choose from the color picker or the color you choose from the image using the *Eyedropper tool*

- The Color button in the Fill Empty Areas With section of the Offset dialog box is only available for images in which all objects have been merged with the background.

- The Offset filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- You can enable the Shift Value As % Of Dimensions check box to view shift coordinates as percentages rather than degrees.

- If an image contains objects that have not been merged with the background, you can enable the Ignore button in the Fill Empty Area With section of the Offset dialog box to leave empty areas as they are.

Working with the Pixelate filter

Use the Pixelate filter to give your image a digital, blocky appearance or a circular, spiderweb look. You can apply the Pixelate filter to the entire image, or to part of it using a lens.

To apply a pixelated effect to the entire image

1. Choose Effects, 2D Effects, Pixelate.

2. In the Pixelate Mode section, enable one of the following buttons:

- Square — maintains equal Width and Height settings
- Rectangular — allows you to set Width and Height settings individually
- Circular — builds pixels out from the center in a radial pattern

3. In the Adjust section, move the following sliders:
   - Width — defines the width of the blocks
   - Height — defines the height of the blocks

4. Move the Opacity (%) slider to set the transparency of the effect.

To apply a pixelated effect to part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Pixelate from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 4 from the previous procedure.

- The Pixelate filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

Working with the Puzzle filter

The Puzzle filter breaks your image down into puzzle-like pieces. You can set the size of the puzzle pieces, the distance between the pieces, and the color of the background which is exposed when the Puzzle filter is applied.
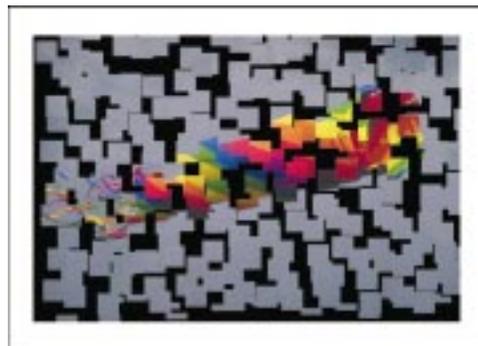
To apply a puzzle effect

1. Choose Effects, 2D Effects, Puzzle.

2. In the Fill Empty Area With section, enable one of the following buttons:

   • Black — fills the empty area with black

   • White — fills the empty area with white

   • Other — fills the empty area with the color you choose from the color picker or the color you choose from the image using the *Eyedropper tool*

   • Original Image — fills the empty area with the original image

   • Inverse Image — fills the empty area with a negative of the original image

3. In the Adjust section, move the following sliders to set the dimensions of the puzzle pieces:

   • Block Width — specifies the width of each puzzle piece

   • Block Height — specifies the height of each puzzle piece

4. Move the Max. Offset (%) slider to set the distance between pieces.

• The Puzzle filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

• If an image contains objects that have not been merged with the background, you must enable the Lock Object Transparency button on the Objects Palette before you can access the Fill Empty Area With options in the Puzzle dialog box.

• You can also specify the dimensions of the puzzle pieces by typing values in the Block Width and Block Height boxes. You can enable the Square Blocks check box to set identical values in the Block Width and Block Height boxes.

Working with the Ripple filter

Use the Ripple filter to make the surface of your image appear like rippled waves of water. You can create a single or dual-wave ripple effect. The dual-wave ripple effect causes two waves to ripple across the image in different directions.
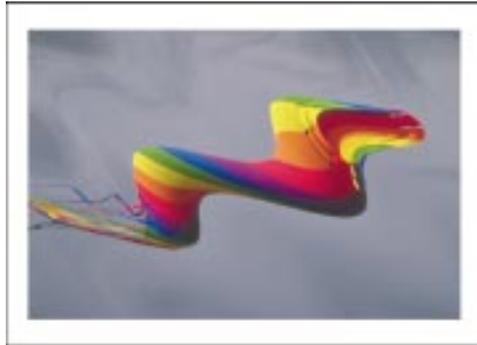
To apply a ripple effect

1. Choose Effects, 2D Effects, Ripple.

2. In the Ripple Mode section, enable one of the following buttons:

   • Single Wave — applies a single wave across the image

   • Dual Wave 1:1 — applies two identical waves perpendicular to each other

   • Dual Wave 2:1 — applies two waves perpendicular to each other, with one wave having twice the amplitude of the other

3. Move the Period slider to adjust the distance between each wave cycle.

   Higher values create waves that are far apart, while lower values create waves that are close together.

4. Move the Amplitude slider to set the amount of displacement each ripple creates.

   Higher values create high peaks and low valleys, while lower values create soft, rolling waves.

5. Move the Direction Angle slider to specify the direction of the ripples.

• The Ripple filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

• You can enable the Distort Ripple check box to create waves with jagged edges.

Working with the Shear filter

The Shear filter maps the shape of an image to the shape of a line segment. The edges of an image are distorted to follow the path of the line that you create in the Shear dialog box. You can create line segments based on curve, linear, freehand, or gamma editing styles. After you choose an editing style you can customize a line segment by dragging nodes on the shear map, and save the line segment for later use. You can also load any of the preset line segments supplied with Corel PHOTO-PAINT and apply them to your image.

To distort images along a path

1. Choose Effects, 2D Effects, Shear.

2. Move the Scale slider to adjust the degree to which your image is mapped to the shape of the line segment.

   A value of 100 % maps the image to the exact shape of the line segment.

3. In the Fill Undefined Area With section, enable one of the following buttons to fill the areas that are left empty when the image is mapped to the shape of the line segment:

   • Wrap Around — fills the exposed areas with the opposite side of the image

   • Repeat Edges — stretches the edges of the image to fill in exposed areas

   • Other Color — fills the exposed areas with the color you choose from the color picker or the color you choose from the image using the *Eyedropper tool*

4. Choose one of the following editing styles from the Edit Style pop-up menu:

   • Curve — creates a curved line segment

   • Linear — creates a straight line segment

- Freehand — lets you define the shape of the line segment

- Gamma — creates a line segment based on the midtones in the image

5. Enable one of the following buttons to change the orientation of the line segment in the preview window.

    - Horizontal — displays the line segment from left to right

    - Vertical — displays the line segment from top to bottom

6. Click and drag to define the shape of the line segment in the preview window.

To save a shear style

1. Customize a shear style using the previous procedure.

2. Click the Save button.

3. Locate the folder where you want to save the file.

4. Specify a filename, and click Save.

To load a shear style

1. Choose Effects, 2D Effects, Shear.

2. Click the Load button.

3. Locate the folder where the preset styles are stored.

4. Choose a filename, and click Open.

- The Shear filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- The Other Color button in the Fill Undefined Area With section of the Shear dialog box is only available for images in which all objects have been merged with the background.

- If you choose the Freehand edit style, you can click the Smooth button to soften the curve.

- If an image contains objects that have not been merged with the background, you can enable the Ignore button in the Fill Undefined Area With section of the Shear dialog box to leave empty areas as they are.

Working with the Swirl filter

You can set the intensity, direction, and position of the swirling effect on your image.

To apply a swirl effect

1. Choose Effects, 2D Effects, Swirl.

2. Enable the *Set Center button*.

3. Click inside the Image Window to set a center point around which the image swirls.

4. Enable one of the following buttons to set the direction of rotation:

   • Clockwise — creates a swirl that rotates clockwise

   • Counter-Clockwise — creates a swirl that rotates counter-clockwise

5. Move the Whole Rotations slider to specify the number of times the base swirl rotates.

6. Move the Additional Degrees slider to specify the degree of rotation.

• The Swirl filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

• If you want to zoom in on the image, you must disable the Set Center button.

• If you preview the Swirl effect in the Swirl dialog box, you can click inside the preview window to set the center point around which the image swirls.

Working with the Tile filter

The Tile filter reproduces your image as a series of tiles and is especially useful for previewing tiled backgrounds for Web pages.
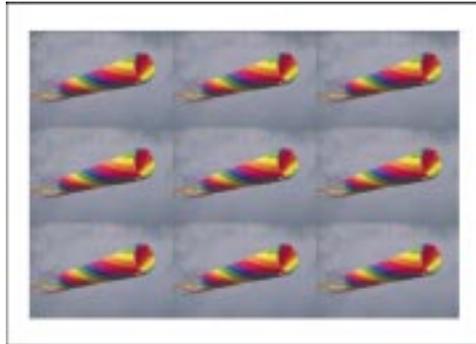
To apply a tile effect

1. Choose Effects, 2D Effects, Tile.

2. Move the Horizontal slider to set the number of tile columns.

3. Move the Vertical slider to set the number of tile rows.

- The Tile filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- You can enable the Identical Values check box to set equal values in the Horizontal and Vertical boxes. This ensures that the tiles maintain their relative proportions.

Working with the Trace Contour filter

You can highlight the edges of the objects in an image using the Trace Contour filter. You can specify which pixels are highlighted by setting a threshold level and choosing an edge type. If you choose the Lower edge type, pixels with a brightness value below the threshold level you set are highlighted. If you choose the Upper edge type, pixels with a brightness value above the threshold you set are highlighted.

To highlight the edges of an image

1. Choose Effects, 2D Effects, Trace Contour.

2. Move the Level slider to set the threshold brightness value (ranging from 1 to 255).

3. Enable one of the following Edge Type buttons:

   • Lower — traces colors with brightness values below the threshold

   • Upper — traces colors with brightness values exceeding the threshold

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• For best results, use the Trace Contour filter on high-contrast images such as images that contain text.

• The Trace Contour filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• You can also set the threshold level by typing a value in the Level box.

Working with the User Defined filter

The User Defined filter lets you create custom Blur, Sharpen, and Edge Detect special effects based on values that you type into a 5 X 5 matrix. The value that you type in the matrix's central box is multiplied by the color value of the current pixel. All values in the matrix are multiplied by the corresponding pixel values in your image and added together to create a new value for the current pixel. The divisor value is divided by the new pixel value. The result represents the final color value of the current pixel and is a value between 1 and 255. You can use any of the preset filters supplied with Corel PHOTO-PAINT, or you can create custom filters and save them for later use.

To create your own effects filter

1. Choose Effects, 2D Effects, User Defined.

2. In the Filter Values section, type a value in the matrix's central box.

3. Type values into the boxes surrounding the central box.

4. Type a value in the Divisor box.

5. Type a value in the Offset box.

To load sample effects filters

1. Choose Effects, 2D Effects, User Defined.

2. Click the Load button.

3. Locate the folder where the sample effects are stored.

4. Choose a filename, and click Open.

To save a user defined filter

1. Create an effect by following the steps in the "To create your own effects filter" procedure.

2. Click the Save button.

3. Locate the folder where you want to save the filter.

4. Specify a filename, and click Save.

• Offset shifts the final color value up or down the brightness scale. Positive values brighten the entire image, while negative values darken it.

• The User Defined filter supports all color models except paletted and black-and-white.

• You can enable the Intensity Only check box to apply the effect to a pixel's intensity value only, without affecting its hue and saturation values. This can prevent dramatic shifts in hue when applying a sharpening effect but may slow down the processing time.

• You can enable the Auto Compute Divisor check box to ensure that the overall brightness of your image is maintained and falls between 1 and 255.

• You can enable the Symmetric check box to specify identical values in symmetrical patterns in the matrix. For example, if you type 1 in a corner box in the matrix, all other corner boxes are also set to 1.

Working with the Wet Paint filter

The Wet Paint filter creates the illusion of wet paint on an image. The wet paint effect can range from subtle changes in the luminescence of colors to streaks of wet paint that appear to drip down your image. You can specify the size of the drips using the Percentage slider and the range of colors that are affected in the image using the Wetness slider. Negative wetness values cause darker colors to drip, while positive values cause light colors to drip.
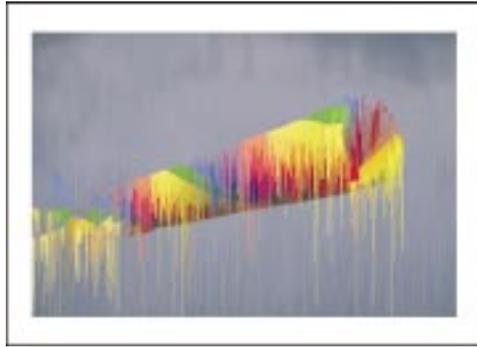
To apply a wet paint effect

1. Choose Effects, 2D Effects, Wet Paint.

2. Move the Percentage slider to set the size of the drips.

3. Move the Wetness slider to specify which colors will drip.

• The Wet Paint filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Wind filter

The Wind filter blurs your image, creating the effect of wind blowing across your image. You can control the strength and direction of the wind. You can also adjust the transparency of the effect by moving the Opacity slider. Higher opacity values produce visible distortion and blurring; lower opacity values produce a more subtle effect.
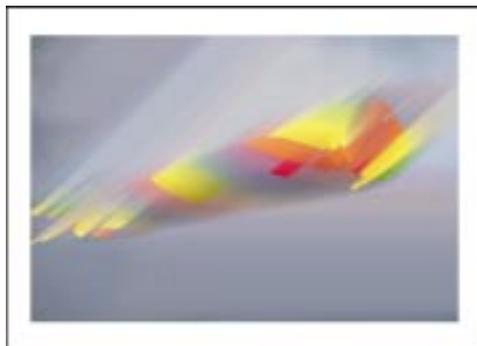
To apply the Wind effect

1. Choose Effects, 2D Effects, Wind.

2. Move the Opacity slider to set the transparency of the effect.

3. Move the Strength slider to set the intensity of the wind.

4. Click the *Direction dial* to set the direction of the wind.

• The Wind filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• You can also type a value in the Direction box to set the direction of the wind on your image.

Working with the Whirlpool filter

The Whirlpool filter applies a fluid, swirling pattern across your image. You can use any of the preset whirlpool styles supplied with Corel PHOTO-PAINT, or you can create custom styles by setting the smear length, spacing, twist, and streak detail of the whirlpool effect. You can save custom whirlpool styles for later use.
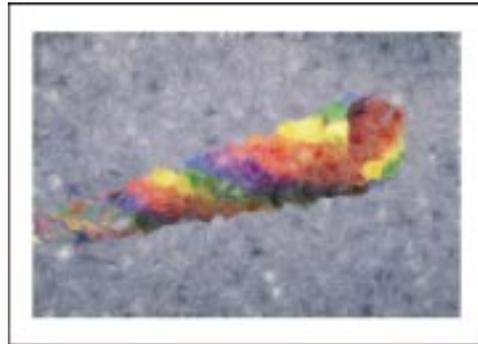
To apply a whirlpool effect

1. Choose Effects, 2D Effects, Whirlpool.

2. Move the Spacing slider to specify the distance between the swirls.

3. Move the Smear Length slider to specify the length of the swirled strokes.

4. Move the Twist slider to specify the amount of twisting in each swirl.

   High values make the fluid flow around the swirls much like whirlpools, whereas low values make the fluid flow out of the whirls like fountains.

5. Move the Streak Detail slider to set the level of smearing.

To save a customized whirlpool style

1. Create or customize a whirlpool effect using the previous procedures.

2. Click the Save button.

3. Specify a filename, and click OK.

- The Whirlpool filter is memory-intensive and can take some time to apply. Try experimenting with lower values, gradually working your way up to higher, memory-intensive values.

- The Whirlpool filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can enable the Warp check box to let the whirlpool effect distort the actual shape of your image. When the Warp check box is disabled, all elements in the image retain their original shape.

- You can load a preset whirlpool style from the Style list box.

- You can delete a preset whirlpool style by clicking the Delete button in the Whirlpool dialog box.

Using the three-dimensional filters

You can apply three-dimensional special effects filters to an image. The three-dimensional filters transform the appearance of your images to create a three-dimensional illusion of depth.

3D Rotate filter

The 3D Rotate filter rotates the image horizontally and vertically according to the limits you set. The image is rotated as if it were one side of a three-dimensional box.

The Boss filter

The Boss filter raises the area of your image that falls along the edges of a previously applied mask. You can control the width, height, and smoothness of the raised edge. You can also control the brightness, sharpness, direction, and angle of the light sources. Only the selected area of your image is affected. To apply the effect to the area outside the mask, you can invert the mask before applying the filter.

Emboss filter

The Emboss filter transforms your image into a relief, making the details appear as ridges and crevices on a flat surface. You can set the position of the light source relative to the image using the Direction dial. You can use a color of your choice or the original image as the embossing color. The Emboss filter works best on images with medium to high contrast.

Glass filter

The Glass filter places a three-dimensional, glass-like surface over an image. The glass surface can range from a sharply-defined plane with beveled edges to a shapeless area. The Glass filter is only available on images that contain masks because the shape of the glass surface is defined by the edges of the mask. Only the area of the image inside the mask is affected. To apply the effect to the area outside the mask, you can invert the mask before applying the filter.

Map To Object filter

The Map To Object filter wraps an image around a sphere or a cylinder. You can set the direction, intensity, and quality of the wrapping effect. The direction specifies whether the image is wrapped toward the back (convex) or front (concave) of the sphere or cylinder; the intensity specifies the amount of wrapping; and the quality specifies the clarity of the output.

Mesh Warp filter

The Mesh Warp filter lets you distort an image by manipulating nodes on a grid. You can increase the number of nodes on the grid by increasing the number of gridlines — up to a maximum of 10. Increasing the number of nodes on the grid provides finer control over small details in your image.

Page Curl filter

The Page Curl filter gives the impression that a corner of your image has rolled in on itself. Controls in the Page Curl dialog box let you select a corner and set the orientation, transparency, and size of the curl. You can also choose colors for the curl and for the background that is exposed when the image curls away from the page.

Perspective filter

The Perspective filter lets you give images three-dimensional depth, as if they exist on a flat plane and recede into the distance. When you apply the Perspective filter, the exposed areas of the Image Window are filled with the

paper color. You can enable the Best Fit option to ensure that no part of the rotated image falls outside the Image Window.

Pinch/Punch filter

The Pinch/Punch filter warps your image by either "pinching" the image away from you or "punching" it toward you. You can position the effect by setting a center point.

Zig Zag filter

The Zig Zag filter distorts an image by creating waves of straight lines and angles that twist the image from its adjustable center point outwards. You can produce dramatic effects by applying the Zig Zag filter to a masked selection.

Working with the 3D Rotate filter

You can use the 3D Rotate filter to rotate your image as if it represents one side of a three-dimensional box. The shaded side of the box on the three-dimensional model identifies the face of your image.
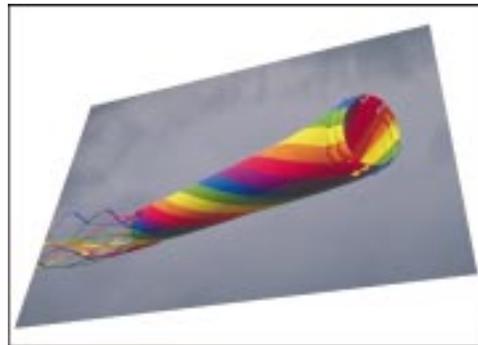
To rotate your image in three dimensions

1. Choose Effects, 3D Effects, 3D Rotate.

2. Move the following sliders to set the degree of rotation:

   • Vertical — rotates the image vertically, from top to bottom

   • Horizontal — rotates the image horizontally, from side to side

• The 3D Rotate filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- You can enable the Best Fit check box to ensure that the image stays within the boundaries of the Image Window.

- You can also drag the three-dimensional model in the 3D Rotate dialog box to set its degree of rotation.

- You can hold down Command, and click a different plane on the three-dimensional model to assign the face of the image to that plane.

Working with The Boss filter

The Boss filter raises the area of your image that falls along the edges of a previously applied mask. You can control the width, height, and smoothness of the raised edge. You can also control the brightness, sharpness, direction, and angle of the light sources. When you apply The Boss filter, the areas around the edge of the mask — both inside and outside of the mask — are embossed.

To apply a 3D embossing effect to the edges of a selection

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Effects, 3D Effects, The Boss.

4. Move any of the following sliders:

   - Width — sets the width of the bevel. The bevel is the area around a masked object that is slanted to produce the three-dimensional effect.

   - Smoothness — sets the sharpness of the edges of the bevel. Low values produce sharp edges but can also display the steps used to create the embossed look. High values create rounded edges.

   - Height — sets the depth of the bevel

   - Brightness — sets the brightness of the highlight in the bevel

- Sharpness — sets the sharpness of the highlight in the bevel

5. Click the *Direction dial* to set the direction of the light striking the bevel.

6. Click the Angle dial to set the angle of the light.

7. Choose one of the following styles from the Drop Off pop-up menu:

- Gaussian — creates a drop off that starts and ends with a round, gradual slope that is steep in between (S-shaped)

- Flat — creates a straight diagonal line that runs between the top and bottom edges of the bevel

- Mesa — creates a curve that begins abruptly and ends with a rounded gradual slope

To save a customized edge embossing style

1. Define a customized embossing style using the previous procedure.

2. Click the *Add Preset button*.

3. In the Save Preset dialog box, specify a filename, and click OK.

- The Boss filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- For more information about masks, see "Using masks to make selections" on page 57.

- You can choose a preset embossing style from the Style pop-up menu.

- You can remove a preset from the Style pop-up menu by clicking the Remove Preset button in The Boss dialog box.

Working with the Emboss filter

The Emboss filter transforms your image into a relief, making the details appear as ridges and crevices on a flat surface.
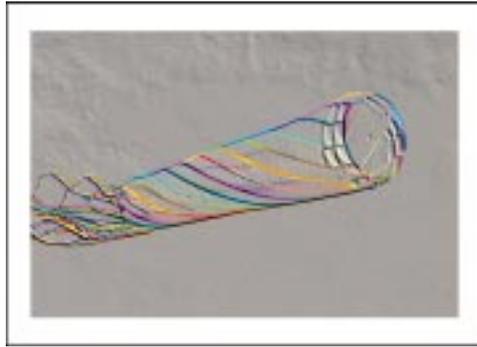
To apply a three-dimensional relief effect

1. Choose Effects, 3D Effects, Emboss.

2. In the Emboss Color section, enable one of the following buttons:

   - Original Color — embosses the image using its original colors

   - Gray — embosses the image in gray

   - Black — embosses the image in black

   - Other — embosses the image using a custom color that you choose from the Other color picker or the color you choose from the image using the *Eyedropper tool*

3. Move the Depth slider to set the depth of the ridges and crevices.

4. Move the Level slider to set the amount of background color the relief contains.

5. Click the *Direction dial* to specify the direction of the light source.

- The Emboss filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also type values in the Depth, Level, and Direction boxes.

Working with the Glass filter

The Glass filter places a semi-transparent glass surface over an image. Before you can apply the Glass filter, you must create a mask on your image. When you apply the Glass filter, the areas around the edge of the mask — both inside and outside of the mask — are embossed.

To apply a glass surface

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Effects, 3D Effects, Glass.

4. Move any of the following sliders:

   - Bevel Width — sets the width of the bevel. The bevel is the area around a masked object that is slanted to produce the three-dimensional look.

   - Smoothness — sets the sharpness of the edges of the bevel. Low values create sharp edges but can also display the steps used to create the embossed look. High values create rounded edges.

   - Refraction — set the angle at which the light is to be bent at the bevel. This distorts the image at the bevel location.

   - Opacity — sets the transparency level of the glass sheet. The more opaque you make the glass, the more the underlying image is tinted to look like the glass color.

   - Brightness and Sharpness — set the intensity of the highlights in the glass

5. Choose a drop-off option from the Drop Off pop-up menu to define the area adjacent to the bevel effect.

6. Click the Color picker and choose a color for the glass.

7. Click any of the following dials:

   - Direction — sets the direction of the light as it strikes the bevel

   - Angle — sets the angle of the light as it strikes the bevel

To save a customized reflective glass style

1. Customize a style using the previous procedure.

2. Click the *Add Preset button.*

3. In the Save Preset dialog box, specify a filename, and click OK.

- The Glass filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can choose a preset reflective glass style from the Style pop-up menu.

- You can also choose a glass color by clicking the Eyedropper tool and choosing a color from the Image Window.

- You can also type values in the Direction and Angle boxes in the Glass dialog box.

- You can remove a preset from the Style pop-up menu by clicking the Remove Preset button in the Glass dialog box.

Working with the Map To Object filter

The Map To Object filter lets you wrap your image around a three-dimensional sphere or cylinder.

To wrap your image around an object

1. Choose Effects, 3D Effects, Map To Object.

2. In the Mapping Mode section, enable one of the following buttons:
    - Spherical — wraps your image around a sphere
    - Horizontal Cylinder — wraps your image around a horizontal cylinder
    - Vertical Cylinder — wraps your image around a vertical cylinder

3. Move the Percentage slider to specify the amount of wrapping.

4. Choose an option from the Quality pop-up menu to specify the quality of the output.

- Negative percentage values wrap the image toward the back; positive percentage values wrap the image toward the front.

- The Map To Object filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

Working with the Mesh Warp filter

The Mesh Warp filter lets you distort an image by manipulating nodes on a grid. You can increase the number of nodes on the grid by increasing the number of gridlines — up to a maximum of 10. Increasing the number of nodes on the grid provides finer control over small details in your image. You can use any of the mesh warp styles supplied with Corel PHOTO-PAINT, or you can save custom mesh warp styles for later use.
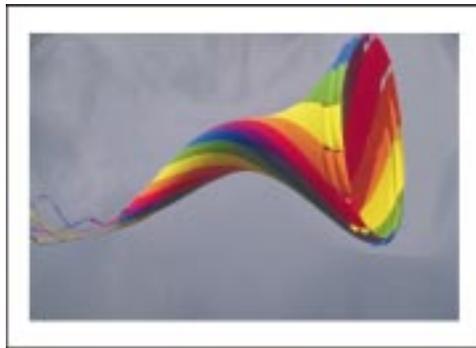
To distort your image using a warping grid

1. Choose Effects, 3D Effects, Mesh Warp.

2. Move the No. Gridlines slider to set the number of grid lines.

3. Drag the nodes on the grid.

To save a customized mesh warp style

1. Customize a style using the previous procedure.

2. Click the Save button.

3. Locate the folder where you want to save the file.

4. Specify a filename, and click Save.

• The Mesh Warp filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted and black-and-white.

- You can enhance movies by applying the Mesh Warp filter to successive frames.

- You can choose a preset mesh warp style from the Style pop-up menu.

- You can remove a mesh warp style from the Style pop-up menu by clicking the Remove button in the Mesh Warp dialog box.

Working with the Page Curl filter

The Page Curl filter gives the impression that a corner of your image has rolled in on itself. Controls in the Page Curl dialog box let you select a corner and set the orientation, transparency, and size of the curl. You can also choose colors for the curl and for the background that is exposed when the image curls away from the page.
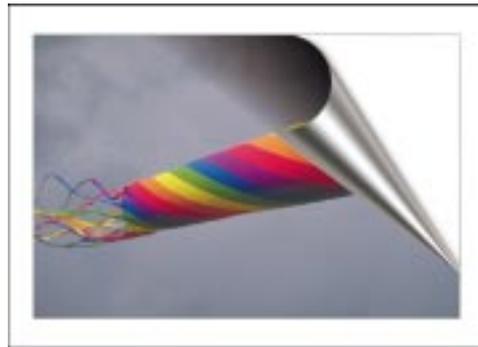
To curl a corner of an image

1. Choose Effects, 3D Effects, Page Curl.

2. Click a button in the Adjust section to select a corner to curl.

3. Enable one of the following buttons:

    - Vertical — begins the curl at the top or bottom edge of the image

    - Horizontal — begins the curl at the left or right edge of the image

4. Move the Width % and Height % sliders to determine the curl size.

5. Click the Curl color picker, and choose a color.

6. Click the Background color picker, and choose a color.

7. Enable one of the following buttons:

    - Opaque Curl — creates a curl using a solid color

    - Transparent Curl — displays the underlying image through the curl

- The Page Curl filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- The Background color picker is only available if you merge all objects with the image background.

- You can also choose colors for the curl and the background by clicking the Eyedropper tool and choosing a color from the Image Window.

Working with the Perspective filter

The Perspective filter lets you give depth and a three-dimensional appearance to your image. By dragging the nodes of the two-dimensional model, which represents your image, you can change the perspective.

To apply a perspective effect

1. Choose Effects, 3D Effects, Perspective.

2. Enable one of the following buttons:
    - Perspective — lets you move two nodes vertically to give an image depth
    - Shear — lets you move two nodes horizontally to skew an image

3. Drag the nodes on the two-dimensional model.

- The Perspective filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

Working with the Pinch/Punch filter

You can use the Pinch/Punch filter to warp an image in three-dimensions by "pinching" the image away from you or "punching" it toward you.

To apply a pinch/punch effect

1. Choose Effects, 3D Effects, Pinch/Punch.

2. Enable the *Set Center button.*

3. Click inside the Image Window to set a center point around which the pinch/punch originates.

4. Move the Punch/Pinch (-/+) slider to set the intensity of the effect.

- The Pinch/Punch filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- If you want to zoom in on the image, you must disable the Set Center button.

Working with the Zig Zag filter

You can twist an image in a series of concentric circles and create many other dramatic effects using the Zig Zag filter.

To apply a zigzag effect

1. Choose Effects, 3D Effects, Zig Zag.

2. Enable the *Set Center button.*

3. Click inside the Image Window to set a center point around which the image zigzags.

4. Enable one of the following Type buttons:

   • Pond Ripples — creates distortion waves that resemble the ripples in a pond

   • Out From Center — creates distortion waves that extend outward from a central point and phase out toward the edges of your image. This creates an effect that looks like the surface of a pond after you've thrown in a small stone.

   • Around Center — creates distortion waves that extend from the center of your image. This creates an effect that looks like the surface of a pond after you've thrown in a large stone. You can control whether the waves phase out toward the edges of the image by moving the Damping slider.

5. Move the Waves slider to set the number of waves.

6. Move the Strength slider to set the intensity of the crests and troughs of the distortion waves.

• The Zig Zag filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- If you choose the Around Center type, you can move the Damping slider to adjust the softness of the zigzag.

- If you want to zoom in on the image, you must disable the Set Center button.

Using the artistic filters

You can apply artistic special effects filters to an image. The artistic filters transform the appearance of your images to imitate artistic techniques such as Impressionism. You can apply some artistic special effects filters to part of an image using a lens.

Canvas filter

The Canvas filter lets you apply a textured surface to an image. You can choose any of the preset canvas maps that are supplied with Corel PHOTO-PAINT or you can create custom canvas maps. You can also load any bitmap image into Corel PHOTO-PAINT as an embossed canvas map. For best results, choose images that have high to medium contrast. You can customize the transparency, tile placement, and embossing level of the image.

Glass Block filter

The Glass Block filter makes your image look like it's being viewed through thick, glass blocks. You can set the dimensions of individual blocks. You can create a low-level pixelated effect and a diamond glass pattern by adjusting the Horizontal and Vertical values.

Impressionist filter

The Impressionist filter makes images look like Impressionist paintings by converting the images to dabs of solid color. Images become increasingly blurred when you set high values on the Horizontal and Vertical sliders.

Smoked Glass filter

The Smoked Glass filter applies a transparent, colored tint to the image. The Tint slider controls the opacity of the effect and the Percent slider controls the amount of blurring applied to the image.

Vignette filter

The Vignette filter creates a frame around your image. A vignette can have a soft or hard edge, can be elliptical, circular, rectangular, or square, and can be any color. Use a vignette with a high fade rate to create a dreamy, nostalgic effect.

Working with the Canvas filter

The Canvas filter gives the surface of your image an embossed, textured look.

To apply a texture over your image

1. Choose Effects, Artistic, Canvas.

2. Click the Load button.

3. Locate the image you want to use as a canvas map.

4. Choose the filename, and click Open.

5. In the Adjust section, move any of the following sliders:

   • Transparency — controls the opacity of the effect. A transparency setting of 100 percent applies the emboss values without significantly affecting the colors in your image.

   • Emboss — sets the depth of the effect. A value of 100 sets the emboss values as they appear in the canvas map, while values between 100 and 200 exaggerate dark and light values in the map for a greater illusion of depth.

   • X Offset — specifies the horizontal shift of the canvas map pattern

   • Y Offset — specifies the vertical shift of the canvas map pattern

6. In the Tile Offset section, enable one of the following buttons:

   • Rows — lets you offset rows of tiles

   • Columns — lets you offset columns of tiles

   • Stretch To Fit — lets you disable tiling and stretch the canvas map to fit your image

7. Move the Offset slider to set the amount of offset of the canvas map tiles.

- The Canvas filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- The Offset slider is not available when the Stretch To Fit button is enabled in the Tile Offset section.

- For best results, use a canvas map that has highly contrasting features.

Working with the Glass Block filter

You can use the Glass Block filter to make your image look like it's being viewed through thick, glass blocks.
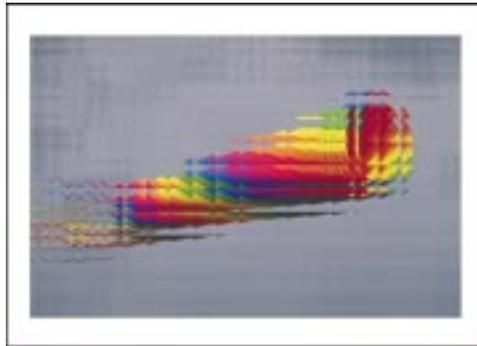
To apply a glass block effect

1. Choose Effects, Artistic, Glass Block.

2. Move the following sliders to set the dimensions of the glass blocks:

   - Horizontal — specifies the width of the glass blocks

   - Vertical — specifies the height of the glass blocks

- The Glass Block filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- For best results, use mid-range block sizes.

- You can also type values in the Horizontal and Vertical boxes to set more precise block dimensions. Enable the Square Blocks check box to set identical values in the Horizontal and Vertical boxes.

Working with the Impressionist filter

The Impressionist filter makes your image look like an Impressionist painting by converting the image to dabs of solid color. You can apply the Impressionist filter to the entire image or to part of it using a lens.
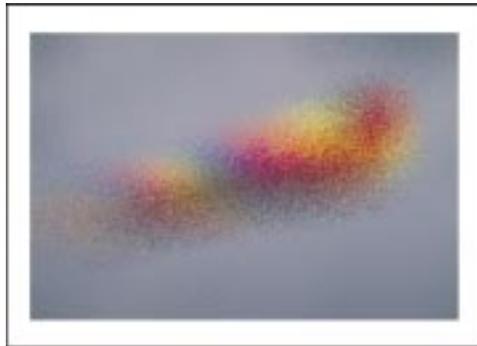
To apply an Impressionist effect to the entire image

1. Choose Effects, Artistic, Impressionist.

2. Move the following sliders:

   - Horizontal — specifies the amount of pixel displacement that occurs along the horizontal axis

   - Vertical — specifies the amount of pixel displacement that occurs along the vertical axis

To apply an Impressionist effect to part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Impressionist from the Lens Type list.

5. Click OK.

6. Move the following sliders:

- Horizontal — specifies the amount of pixel displacement that occurs along the horizontal axis

- Vertical — specifies the amount of pixel displacement that occurs along the vertical axis

- The Impressionist filter supports all color models except 48-bit RGB, 16-bit grayscale, and black-and-white.

- You can enable the Identical Values check box to set identical values in the Horizontal and Vertical boxes.

Working with the Smoked Glass filter

The Smoked Glass filter places a colored tint over your image like a sheet of colored glass. You can customize the opacity and blurring of the glass.

To place a colored tint over an image

1. Choose Effects, Artistic, Smoked Glass.

2. Move the Tint slider to set the opacity of the effect.

3. Move the Percent slider to set the level of blur.

4. Click the Color picker, and choose a color for the tint.

- The Smoked Glass filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also choose a color for the tint by clicking the Eyedropper tool and choosing a color from the Image Window.

Working with the Vignette filter

You can add a frame around your image using the Vignette filter. You can set the shape, color, and fade rate of the frame.

To apply a frame to an image

1. Choose Effects, Artistic, Vignette.

2. Enable one of the following buttons:

   • Black — colors the frame black

   • White — colors the frame white

   • Other — lets you choose a color for the frame from the color picker or use the *Eyedropper tool* to choose a color from the image

3. Enable a Shape button to specify the shape of the vignette.

4. Move the Offset slider to set the size of the center of the frame.

5. Move the Fade slider to set the fade-out rate for the frame.

 • Moving the Offset slider to the left increases the size of the frame; moving the Offset slider to the right decreases the size of the frame.

• The Vignette filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Using the blur filters

The Blur filters alter the pixels of your image to soften, smooth edges, blend, or create motion effects. To optimize the effects you create using the Blur filters, Corel PHOTO-PAINT provides a special control dialog box that lets you access five of the blurring effects. You can access this dialog box by choosing Effects, Adjust, Blur. For more information about using the Blur Control dialog box, see "Adjusting the focus and grain" on page 261.

Directional Smooth filter

The Directional Smooth filter smoothes the regions of gradual change in an image while preserving the edge detail and texture. You can use this filter to subtly blur the edges and surfaces of images without distorting the focus.

Gaussian Blur filter

The Gaussian Blur filter produces a hazy effect, blurring the focus of an image according to a Gaussian distribution which spreads the pixel information outward using bell-shaped curves. The radius of the Gaussian blur refers to the standard deviation of the gaussian curve. For example, if you set the radius to 1, the effect is applied 3 pixels away from the active pixel.

Jaggy Despeckle filter

The Jaggy Despeckle filter scatters colors in an image, creating a soft, blurred effect with minimal distortion. It is most effective for removing the jagged edges that can appear in line art or high-contrast images. The Jaggy Despeckle dialog box lets you specify the height and width of the effect. Setting the values independently mildly diffuses the image with a minimum loss of detail.

Low Pass filter

The Low Pass filter removes sharp edges and detail from an image, leaving smooth gradients and low-frequency areas. Low-frequency areas are constant areas of an image or areas where only gradual changes occur. You can customize the intensity and radius of the effect using the Percentage and Radius sliders. At high settings, the Low Pass filter creates a blurring effect that erases image detail. The Low Pass filter gives you more control over the blurring effect than the Smooth or Soften filters.

Motion Blur filter

The Motion Blur filter creates the illusion of movement in an image. You can specify a direction for the movement using the Direction dial, and you can choose an Off-Image Sampling type. The Off-Image Sampling types let you ignore pixels that fall outside the image, start the blurring with the paper color, or start the blurring with the colors at the edge of the image. You can also control the distance of the motion blur effect.

Radial Blur filter

The Radial Blur filter lets you create a blurring effect that spins around or radiates outward from a central point. You can reposition the center point, set

the intensity of the effect, choose a blur mode, and set the quality of the output.

Smooth filter

The Smooth filter mutes the differences between adjacent pixels to smooth the image or image area without losing detail. It is especially useful for removing the dithering that is created when you convert a paletted image to the RGB color model. You can increase the intensity of the effect by applying it several times to the same image or image area. The difference between the Smooth filter and the Directional Smooth filter is subtle but is often apparent when images are viewed at high resolutions. The Smooth filter creates a more pronounced effect than the Soften filter.

Soften filter

The Soften filter smoothes and tones down the harsh edges in your images without losing important image detail. The difference between the Smooth and Soften filters is subtle but is often apparent when images are viewed at high resolutions.

Working with the Directional Smooth filter

The Directional Smooth filter applies a very subtle amount of blurring to your image. It analyzes the value of pixels with similar tonal values to determine the direction in which to apply the greatest amount of smoothing.

To apply directional smoothing

1. Choose Effects, Blur, Directional Smooth.

2. Move the Percentage slider to set the intensity of the effect.

- The Directional Smooth filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also set the intensity of the effect by typing a value in the Percentage box.

Working with the Gaussian Blur filter

The Gaussian Blur filter produces a hazy effect, blurring the image according to a Gaussian distribution, which spreads the pixel information outward using bell-shaped curves.
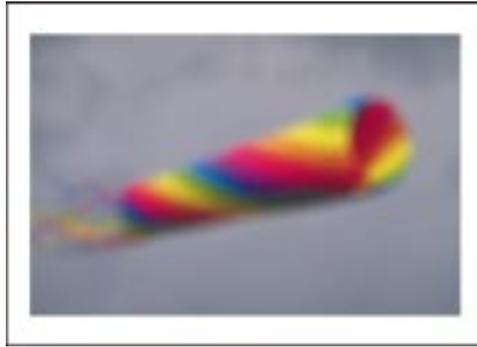
To apply a gaussian blur effect

1. Choose Effects, Blur, Gaussian Blur.

2. Move the Radius slider to set the intensity of the effect.

- The Gaussian Blur filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also set the intensity of the effect by typing a value in the Radius box. Radius values are measured in pixels.

Working with the Jaggy Despeckle filter

The Jaggy Despeckle filter applies a soft, blurring effect to your image. It is especially effective on high-contrast images. You can apply the Jaggy Despeckle filter to the entire image or to part of it using a lens.

To apply a jaggy despeckle effect to the entire image

1. Choose Effects, Blur, Jaggy Despeckle.

2. Move the following sliders:

- Width — specifies the number of neighboring pixels (left and right) that are affected

- Height — specifies the number neighboring pixels (top and bottom) that are affected

To apply a jaggy despeckle effect to part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Jaggy Despeckle from the Lens Type list.

5. Click OK.

6. Move the following sliders:

   • Width — specifies the number of neighboring pixels (left and right) that are affected

   • Height — specifies the number neighboring pixels (top and bottom) that are affected

• The Jaggy Despeckle filter supports all color models except paletted and black-and-white.

• You can enable the Symmetric check box to set identical width and height values.

Working with the Low Pass filter

The Low Pass filter removes sharp edges and detail from your image. High settings can erase important detail.

To remove sharp edges and detail from an image

1. Choose Effects, Blur, Low Pass.

2. Move the Percentage slider to set the intensity of the effect.

3. Move the Radius slider to adjust the number of pixels that are successively selected and evaluated when you apply the effect.

• The Low Pass filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• You can also set the intensity and range of the effect by typing values in the Percentage and Radius boxes.

Working with the Motion Blur filter

The Motion Blur filter blurs your image so that it looks like a photograph of a moving object. You can set the direction and distance of the movement on your image.

To give the appearance of speed through blurring

1. Choose Effects, Blur, Motion Blur.

2. Move the Distance slider to set the intensity of the effect.

3. Click the *Direction dial* to set the direction of movement.

4. In the Off-Image Sampling section, enable one of the following buttons:

   • Ignore Pixels Outside Image — ignores pixels that fall outside of the image

   • Use Paper Color — starts the blurring with the paper color

   • Sample Nearest Edge Pixel — starts the blurring with the colors at the edge of the image

• The Motion Blur filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• You can also set the intensity and direction of the effect by typing values in the Distance and Direction boxes. Distance is measured in pixels and direction is measured in degrees.

Working with the Radial Blur filter

The Radial Blur filter gives your image a blurred effect that radiates out from a central point.

To apply a radial blur

1. Choose Effects, Blur, Radial Blur.

2. Enable the *Set Center button.*

3. Click inside the Image Window to set a center point around which the radial blur originates.

4. Move the Amount slider to set the intensity of the effect.

5. Enable one of the following Mode buttons:

   • Spin — rotates the blur around the center point

   • Zoom — blurs outward from the center point

6. Enable one of the following Quality buttons:

   • Best — applies a high-quality level of output at a slightly slower speed

   • Fast — applies a low-quality level of output at a slightly faster speed

• The Radial Blur filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• If you want to zoom in on the image, you must disable the Set Center button.

• If you preview the Radial Blur effect in the Radial Blur dialog box, you can click inside the preview window to set the center point around which the image is blurred.

• You can also set the intensity of the effect by typing a value in the Amount box.

Working with the Smooth filter

The Smooth filter applies a subtle amount of blurring and is used primarily to smooth the rough edges on your image. Although the blurring effect is subtle, it can often be viewed at high zoom levels. You can apply the Smooth filter to the entire image or to part of it using a lens.

To smooth rough edges on the entire image

1. Choose Effects, Blur, Smooth.

2. Move the Percentage slider to set the intensity of the effect.

To smooth rough edges on a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Smooth from the Lens Type list.

5. Click OK.

6. Move the Percentage slider to set the intensity of the effect.

- • The Smooth filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- • You can also set the intensity of the effect by typing a value in the Percentage box.

Working with the Soften filter

The Soften filter slightly blurs your image but retains a high level of detail. You can apply the Soften filter to the entire image or to part of it using a lens.

To soften the entire image

1. Choose Effects, Blur, Soften.

2. Move the Percentage slider to set the intensity of the softening.

To soften a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Soften from the Lens Type list.

5. Click OK.

6. Move the Percentage slider to set the intensity of the softening.

- The Soften filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also set the intensity of the effect by typing a value in the Percentage box.

Using the color transform filters

You can create special effects by changing the colors in your images using the color transform filters. You can apply some of the color transform filters to an entire image, or to part of an image using a lens.

Bit Planes filter

The Bit Planes filter reduces the image to basic RGB color components and emphasizes tonal changes. For example, certain areas in an image may appear as solid blocks of color because there is little change in tone. Since gradient fills have a high degree of color tone change, the Bit Planes filter is very useful for analyzing the number of steps in gradients.

Halftone filter

The Halftone filter gives your image the appearance of a color halftone. A color halftone is an image that has been converted from a continuous tone image to a series of dots of various sizes to represent different tones. As in color commercial printing, the screen angles you set determine how the halftone dots on the screens line up and how the colors blend when all the screens are seen together. You can adjust the screen angles to produce a wider range of colors.

Psychedelic filter

The Psychedelic filter changes the colors in your image to bright, electric colors such as orange, hot pink, cyan, and lime green.

Solarize filter

The Solarize filter transforms colors to create the appearance of a negative photographic image. In photographic terms, solarization is a darkroom technique in which a sudden flash of light is used to darken unfilled areas of a print.

Working with the Bit Planes filter

The Bit Planes filter reduces the colors in an image to basic RGB color components and displays tonal changes in your image using solid colors. Low values result in more tonal changes and gradations being displayed.
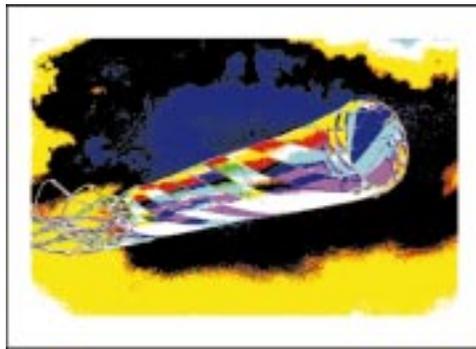
To apply a bit planes effect to your image

1. Choose Effects, Color Transform, Bit Planes.

2. Move the Red, Green, and Blue sliders to set the intensity of the effect for the different color planes.

• The Bit Planes filter is particularly useful for analyzing image gradients and supports all color models except black-and-white.

• You can also control the sensitivity of the effect by typing values in the Red, Green, and Blue boxes. If you want to set equal values in each box, you can enable the Apply To All Planes check box.

Working with the Halftone filter

You can use the Halftone filter to give your image the appearance of a color halftone. A color halftone is an image that has been converted from a

continuous tone image to a series of dots of various sizes to represent different tones.

To give your image the appearance of a color halftone

1. Choose Effects, Color Transform, Halftone.

2. Move the Max Radius slider to set the maximum radius of a halftone dot.

3. Move the following sliders to determine how colors mix together:
    *   Cyan — specifies the angle of the cyan color screen
    *   Magenta — specifies the angle of the magenta color screen
    *   Yellow — specifies the angle of the yellow color screen
    *   Black — specifies the angle of the black color screen

*   The Halftone filter supports all color models except 48-bit RGB, Lab, 16-bit grayscale, paletted, and black-and-white.

*   You can also set the radius and channel angles by typing values in the corresponding boxes.

Working with the Psychedelic filter

The Psychedelic filter transforms the colors of your image into shocking, bright colors. You can apply the Psychedelic filter to the entire image or to part of it using a lens.

To apply psychedelic colors to the entire image

1. Choose Effects, Color Transform, Psychedelic.

2. Move the Level slider to set the intensity of the effect.

To apply psychedelic colors to a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Psychedelic from the Lens Type list.

5. Click OK.

6. Move the Level slider to set the intensity of the effect.

• Small changes to the Level setting result in significant changes to your image.

• The Psychedelic filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• You can also set the intensity of the effect by typing a value in the Level box.

Working with the Solarize filter

The Solarize filter makes your image look like a negative photographic image. You can apply the Solarize filter to the entire image or to part of it using a lens.

To apply a solarized effect to the entire image

1. Choose Effects, Color Transform, Solarize.

2. Move the Level slider to set the intensity of the effect.

To apply a solarized effect to a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Solarize from the Lens Type list.

5. Click OK.

6. Move the Level slider to set the intensity of the effect.

- The Solarize filter supports all color models except black-and-white.

- You can also set the intensity of the effect by typing a value in the Level box.

Using the noise filters

In bitmap image-editing, noise is defined as the random pixels across the image that resemble static on television screens. Use the filters in the Noise flyout menu to create, control, or eliminate noise. To optimize the effects you create using the Noise filters, Corel PHOTO-PAINT provides a special control dialog box that lets you access the Noise effects. You can access this dialog box by choosing Effects, Adjust, Noise. For more information about

using the Noise Control dialog box, see "Adjusting the focus and grain" on page 261.

Add Noise filter

The Add Noise filter creates a granular effect that adds texture to a flat or overly blended image. There are three noise types: Gaussian, Spike, and Uniform. Gaussian prioritizes colors along a Gaussian curve and creates more light and dark pixels than the Uniform Noise option. Spike uses colors that are distributed around a narrow curve and produces a thin, light-colored grain. Uniform provides an overall granular appearance.

Diffuse filter

The Diffuse filter distributes an image's pixels to fill in blank spaces and remove noise. Depending on the level you choose for the diffusion, the image appears smooth, blurry, or can have a border or outline around its edge — as if seen through a photographer's diffusion lens.

Dust And Scratch filter

The Dust And Scratch filter reduces image noise by averaging pixel values. This causes adjacent colors to bleed into each other and creates a blended appearance across the image. As the name implies, the Dust And Scratch filter can eliminate dust and scratch faults in an image. For more information about using the Dust And Scratch filter, see "Restoring damaged images" on page 258.

Maximum filter

The Maximum filter removes noise by adjusting a pixel's color value based on the maximum color values of its neighboring pixels. This filter also causes a mild blurring effect if applied in large percentages or if applied more than once.

Median filter

The Median filter removes noise and detail by averaging the color values of the pixels in an image.

Minimum filter

The Minimum filter removes noise by adjusting a pixel's color value based on the minimum color values of its neighboring pixels. You can control the number of neighboring pixels that are successively selected and evaluated for the effect.

Remove Moiré filter

The Remove Moiré filter removes undesired wave patterns that occur when halftone screens of two different frequencies are superimposed in the same image. For example, if you scan a halftone image, you will likely see moiré patterns because the dots per inch frequency of the original halftone screen differs from that of the scanned image.

Remove Noise filter

The Remove Noise filter softens an image and reduces the speckled effect that can occur during the scanning or video-capturing process. The Remove Noise filter compares each pixel to surrounding pixels and calculates an average. Each pixel with a brightness value exceeding that of the threshold you set is removed.

Working with the Add Noise filter

The Add Noise filter creates a granular effect by adding random pixels across an image. You can customize the effect of the Add Noise filter by specifying the noise type and the amount of noise that is added to the image. You can apply the Add Noise filter to the entire image or to part of it using a lens.
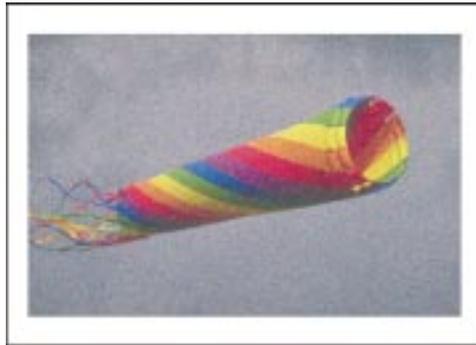
To add noise to your entire image

1. Choose Effects, Noise, Add Noise.

2. In the Noise Type section, enable one of the following buttons:

   • Gaussian — prioritizes colors along a Gaussian curve and creates more light and dark pixels than the Uniform option. Most colors added by the effect closely resemble the original colors.

   • Spike — produces a thinner, lighter-colored grain

   • Uniform — produces an overall granular appearance

3. Move the Level slider to adjust the intensity and color value range affected by the noise.

4. Move the Density slider to set the amount of noise pixels per inch.

To add noise to a part of your image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Add Noise from the Lens Type list.

5. Click OK.

6. Follow steps 2 to 4 from the previous procedure.

- The Add Noise filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can enable the Color Noise check box to apply colorful noise pixels.

- You can also adjust the intensity of the effect and the amount of noise pixels per inch by typing values in the Level and Density boxes.

Working with the Diffuse filter

The Diffuse filter removes noise by spreading out the pixels of your image to fill in blank spaces.

To apply diffusion to your image

1. Choose Effects, Noise, Diffuse.

2. Move the Level slider to set the intensity of the effect.

- The Diffuse filter supports all color models except paletted and black-and-white.

- You can also adjust the intensity of the effect by typing a value in the Level box.

Working with the Maximum filter

The Maximum filter removes noise by adjusting a pixel's color value based on the maximum color values of its neighboring pixels. This filter also causes a mild blurring effect if applied in large percentages or if applied more than once.

To apply the Maximum filter

1. Choose Effects, Noise, Maximum.

2. Move the Percentage slider to set the intensity of the effect.

3. Move the Radius slider to specify the number of pixels that are successively selected and evaluated when you apply the effect.

- The Maximum filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You can also set the intensity and scope of the effect by typing values in the Percentage and Radius boxes.

Working with the Median filter

The Median filter removes noise and detail by averaging the color values of the pixels in an image.

To apply the Median filter

1. Choose Effects, Noise, Median.

2. Move the Radius slider to determine the number of pixels that are successively selected and evaluated when you apply the effect.

- The Median filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted and black-and-white.

Working with the Minimum filter

The Minimum filter removes noise by darkening the pixels of your image. If you apply this filter at high intensities, you can lose important image detail.

To apply the Minimum filter

1. Choose Effects, Noise, Minimum.

2. Move the Percentage slider to set the intensity of the effect.

3. Move the Radius slider to determine the number of pixels that are successively selected and evaluated when you apply the effect.

- The Minimum filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Remove Moiré filter

The Remove Moiré filter removes patterned noise that can occur in a scanned halftone image.

To apply the Remove Moiré filter

1. Choose Effects, Noise, Remove Moiré.

2. Move the Amount slider to determine the amount of noise to remove.

3. In the Quality section, enable one of the following buttons:

   • Better — applies a high-quality effect but at a slightly slower speed

   • Faster — applies a lower quality result but at a slightly faster speed

4. Type a value for the output dpi in the Output box.

• The Remove Moiré filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

• The Output box is only available if you merge all objects with the image background.

• The filter may shrink your image if it contains a mask or if the following conditions are true: the image has an output dpi lower than the original dpi, the image contains an object, and that object's Lock Transparency check box is enabled on the Objects Palette. When the image shrinks, the object or mask selection remains the same size and the rest of the image is filled with the paper color. If the Lock Transparency check box is disabled, the object shrinks in size with the rest of the image.

• For best results, scan the original image using a resolution of 300 dots per inch and set the output resolution to 200 dpi in the Remove Moiré dialog box. The output dpi should be approximately two-thirds of the original dpi.

Working with the Remove Noise filter

You can use the Remove Noise filter to soften your image and to remove random pixel noise. You can apply the Remove Noise filter to the entire image or to part of it using a lens.

To apply the Remove Noise filter to the entire image

1. Choose Effects, Noise, Remove Noise.

2. Move the Threshold slider to set the brightness level at which noise is removed.

To apply the Remove Noise filter to a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Remove Noise from the Lens Type list.

5. Click OK.

6. Move the Threshold slider to set the brightness level at which noise is removed.

- The Remove Noise filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

- You must disable the Auto check box before you can move the Threshold slider manually. You can enable the Auto check box to let Corel PHOTO-PAINT set the threshold automatically. The Auto check box is enabled by default.

Using the render filters

The render filters let you simulate lighting, photographic realism, and the appearance of three-dimensional depth in your images.

3D Stereo Noise filter

The 3D Stereo Noise filter generates a dithered noise pattern that gives images a three-dimensional appearance when viewed a certain way. This filter is particularly suited to high-contrast line art and grayscale images. You can view the effect by focusing your eyes on the image as if you were staring through it. If you move the image closer and farther away from you, the shapes come into focus in a three-dimensional space on your page.

Lens Flare filter

The Lens Flare filter produces rings of light on your image that simulate the flare that appears on a photograph when the camera is aimed toward a direct, bright light. You can use this filter to add photographic realism to images. In a camera, lens flares occur because the light is passed through a series of lenses and each lens affects the light's intensity and scope. Lens flares differ from lens to lens, depending on focal length and lens magnification.

Lighting Effects filter

The Lighting Effects filter offers a range of tools for adding light sources to your RGB images. You can add dramatic special effects such as a spotlight on

the subject of your image or colored lighting to set a mood. You can also customize the color, brightness, and sharpness of the light source and define embossing texture values. Preset light source types are supplied with Corel PHOTO-PAINT, or you can create your own custom light source types.

Working with the 3D Stereo Noise filter

The 3D Stereo Noise filter creates a dithered noise pattern that gives your image a three-dimensional appearance when viewed a certain way. For best results, use high-contrast images.

To create a 3D Stereo Noise effect

1. Choose Effects, Render, 3-D Stereo Noise.

2. Move the Depth slider to set the intensity of the effect.

- The 3D Stereo Noise filter supports all color models except 48-bit RGB, Lab, 16-bit grayscale, paletted, and black-and-white.

- You can add dots to your image to help you focus correctly on the three-dimensional effect by enabling the Show Dots check box. You can adjust your focus so that the two dots become three, and then move your gaze up the page to the image.

Working with the Lens Flare filter

Because the Lens Flare filter simulates bright light striking a camera lens, the lens flare is refracted into a series of small lightened circles that surround the bright flare point.

To create a lens flare on your image

1. Choose Effects, Render, Lens Flare.

2. Set the center of the flare by clicking the preview image.

3. In the Lens Type section, enable one of the following buttons:

    *   50-300 mm Zoom — creates a lens flare effect common to focal lengths between 50 mm (standard lens, normal perspective) and 300 mm (telephoto/zoom lenses, magnified perspective)

    *   35 mm Prime — creates a lens flare effect common to a moderate wide-angle lens

    *   105 mm Prime — creates a lens flare effect common to a moderate telephoto lens

4. Click the Color picker, and choose a color for the lens flare.

5. Move the Brightness slider to set the flare's brightness.

*   The Lens Flare filter supports 24-bit RGB images only.

*   You can also choose a color for the lens flare by clicking the Eyedropper tool and choosing a color from the Image Window.

Working with the Lighting Effects filter

You can use the Lighting Effects filter to specify the color, brightness, and contrast of the light sources you add to an image. Preset light sources are supplied with Corel PHOTO-PAINT, or you can create custom light sources and save them for later use. You can also use the lighting effects filter to create an embossed relief.
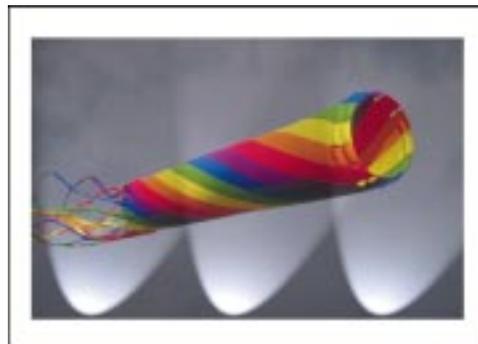
To add light sources to your image

1. Choose Effects, Render, Lighting Effects.

2. Click the Light Source tab.

3. Enable one of the following buttons:

   - Spotlight — applies a beam light source with clearly defined edges. You can aim, elevate, and focus spotlights.

   - Directional — applies a light source similar to an ambient light that you can aim. It provides even lighting with no hot center. It is especially useful for emphasizing textures when a relief is being applied to your image.

4. Click the color picker and choose a color.

5. Click and drag the *light source selector* to set the position and angle of the light.

6. For each light source, do any of the following:

   - Enable the On check box to turn the light source on.

   - Move the Brightness slider to set the light source intensity.

   - Move the Cone Size slider to control the width of the pool of light, from 0 to 180 degrees.

   - Move the Edge slider to control the amount of spill at the edges of the pool of light — the softness of the edge is expressed as a percentage of the sharpest level of focus.

   - Click the Angle dial to specify the direction of the light source.

   - Move the Opacity slider to set a brightness value to be applied across the image pixels.

7. Choose the Atmosphere tab, and do any of the following:

   - Move the Ambient Brightness slider to set the ambient light intensity. Ambient light is the lighting in a room, including natural and artificial light sources. The quality and intensity of ambient light in your workspace affects the colors you see in color printouts, in scanning originals, and on your monitor.

   - Enable the On check box to turn the ambient light on.

   - Move the Image Brightness slider to set the light intensity of the overall image.

   - Choose a texture channel from the Channel pop-up menu to specify the color channel in which you are creating a texture.

- Move the Relief slider to adjust the amount of texture on the surface of your image.

- Move the Contrast slider to adjust the contrast of the texture. A setting of 0 uses all 256 grayscale values, whereas a setting of 100 uses just the values 0 and 255 (black and white).

To save a lighting style

1. Create a lighting style using the previous procedure.

2. Click the *Add Preset button.*

3. In the Save Preset dialog box, specify a filename, and click OK.

To create an embossed relief using light

1. Choose Effects, Render, Lighting Effects.

2. Choose a preset style from the Style pop-up menu.

3. Choose the Atmosphere tab.

4. Choose a single channel option from the Channel pop-up menu.

5. Move the Relief slider to set the depth of the relief.

6. Move the Contrast slider to set the amount of contrast in the relief.

- The Lighting Effects filter supports 24-bit RGB and 8-bit grayscale images.

- The settings on the Light Source tab affect only the current light source, while the settings on the Atmosphere tab affect the whole image.

- You can add or remove additional light sources by clicking the Add and Subtract Light Source buttons.

- You can hide the light source in the preview window by clicking the Reveal/Hide Light Source button.

- You can set a precise angle for a light source by typing a value in the Angle box on the Light Source tab.

- You can click the Omni button in the Lighting Effects dialog box to apply the preset Omni lighting effect. The Omni lighting effect creates a hard circle of light that you can position on your image.

- You can choose a preset lighting style from the Style pop-up menu.

Using the sharpen filters

The sharpen filters increase the contrast between the pixels in your image to improve the focus and enhance edges. To optimize the effects you create using the sharpen filters, Corel PHOTO-PAINT provides a special control dialog box that lets you access the sharpen effects. You can access this dialog box by choosing Effects, Adjust, Sharpness. For more information about using the Sharpness Control dialog box, see "Adjusting the focus and grain" on page 261.

Adaptive Unsharp filter

The Adaptive Unsharp filter accentuates edge detail by analyzing the values of neighboring pixels. This filter preserves most image detail but its effect is apparent in high-resolution images. The Adaptive Unsharp filter creates a sharpening effect that is very similar to the sharpening effect created by the Unsharp Mask filter. For more information about the Unsharp Mask filter, see "Sharpening the focus" on page 262.

Directional Sharpen filter

The Directional Sharpen filter analyzes pixels near an edge to determine the direction in which to apply the greatest amount of sharpening. This filter enhances the edges of an image without creating a grainy effect.

Find Edges filter

The Find Edges filter detects the outlines of objects in your image and converts them to soft or solid lines.

High Pass filter

The High Pass filter removes low-frequency areas and shading. This filter can give an image an ethereal, glowing quality by emphasizing the highlights and luminous areas of an image. If you set high percentage settings in the High Pass dialog box, most smooth areas of the image are removed. If you set low percentage settings in the High Pass dialog box, the highlighted areas of the image are enhanced.

Sharpen filter

The Sharpen filter accentuates the edges in the image by increasing the contrast between their adjacent pixels.

Unsharp Mask filter

The Unsharp Mask filter accentuates edge detail and focuses blurred areas in the image. This filter creates an effect that is similar to the effect created by

the Band Pass filter; however, the Unsharp Mask filter does not remove low frequency areas. For information about using the Unsharp Mask filter, see "Sharpening the focus" on page 262.

Working with the Adaptive Unsharp filter

The Adaptive Unsharp filter accentuates edge detail by analyzing the values of neighboring pixels. This filter preserves most image detail but its effect is apparent in high-resolution images.

To apply an adaptive unsharp effect

1. Choose Effects, Sharpen, Adaptive Unsharp.

2. Move the Percentage slider to specify the degree of sharpening.

- This filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Directional Sharpen filter

The Directional Sharpen filter analyzes pixels near an edge to determine the direction in which to apply the greatest amount of sharpening. This filter enhances the edges of an image without creating a grainy effect.

To apply a directional sharpen effect

1. Choose Effects, Sharpen, Directional Sharpen.

2. Move the Percentage slider to determine the degree of sharpening.

- The Directional Sharpen filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Find Edges filter

The Find Edges filter detects the edges of objects in high-contrast images, such as images that contain text.
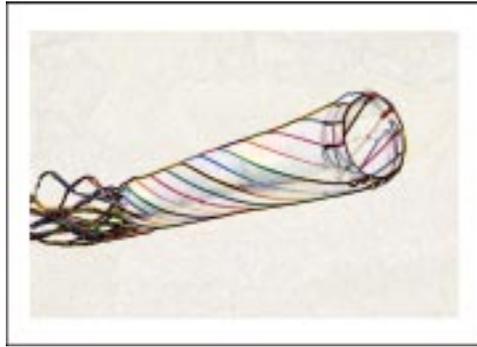
To convert edges to outlines

1. Choose Effects, Sharpen, Find Edges.

2. Enable one of the following Edge Type buttons:

    - Soft — creates a smooth, blurred outline

    - Solid — creates a sharp, crisp outline

3. Move the Level slider to determine the intensity of the effect.

- The Find Edges filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the High Pass filter

The High Pass filter removes image detail by emphasizing the highlights and luminous areas of your image.

To apply the High Pass filter

1. Choose Effects, Sharpen, High Pass.

2. Move the Percentage slider to set the intensity of the effect.

3. Move the Radius slider to specify how far colors bleed outward from the edges.

- High percentage values remove most of the image detail, leaving only the edge details clearly visible. Low percentage settings emphasize highlights only.

- This filter supports all color models except 48-bit RGB, 16-bit grayscale, paletted, and black-and-white.

Working with the Sharpen filter

The Sharpen filter accentuates edge detail by focusing blurred areas in your image and increasing the contrast between neighboring pixels. You can apply this filter to the entire image or to part of it using a lens.

To apply the Sharpen filter to the entire image

1. Choose Effects, Sharpen, Sharpen.

2. Move the Edge Level (%) slider to set the intensity of the effect.

3. Move the Threshold slider to determine which pixels are affected.

To apply the Sharpen filter to a part of the image

1. Open the Mask Tools flyout, and click a mask tool.

2. Select an area on your image.

3. Choose Object, Create, Lens: From Mask.

4. Choose Sharpen from the Lens Type list.

5. Click OK.

6. Follow steps 2 and 3 from the previous procedure.

- The Sharpen filter supports all color models except paletted and black-and-white.

- You can enable the Intensity Only check box to apply the effect to a pixel's intensity value only, without affecting its hue and saturation values. This can prevent dramatic shifts in hue when applying a sharpening effect but may slow down the processing time.

MAKING AND EDITING MOVIES 11

You can make and edit movies to add the illusion of movement to your images. Movies contain a series of images, called frames. As you change the position of objects in successive frames, the objects appear to move.

A movie consists of a series of images called frames. The key elements are the background and moving objects.
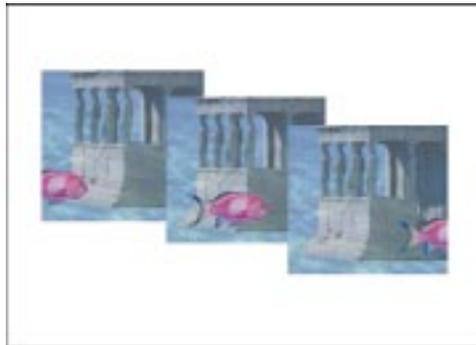
You can make movies by creating a background and objects from scratch or you can use existing images and objects. You can save a movie at any time to preserve your work. After you save a movie, you can edit it by opening the entire movie or by opening part of it. Working on a movie in parts reduces the amount of data the computer has to process at one time.

The movie controls in Corel PHOTO-PAINT let you customize a movie's appearance by inserting new frames and files, deleting frames, changing the order of frames, and modifying the frame rate. You can preview a movie using the playback controls to play, rewind, or fast forward the frames.

Creating movies

Movies contain a background and one or more objects that appear in the foreground. You can create a movie's background and objects from scratch, or you can use existing images and objects.

Creating the background

When you create a movie background from scratch, you choose the color mode (the number and kind of colors that make up the image), size, resolution, and paper color of the background. You can also create a movie background using an existing image if you do not want to start from scratch.

Creating the moving parts

The moving parts that you include in a movie are called objects. When you paste an object into a movie, the object appears in each frame of the movie. You can create the illusion of movement by moving the object in small increments from one frame to the next. When you are satisfied with the location of the object in the current frame, you can combine it with the background to make it a permanent part of the frame. For more information about combining objects with the background, see "Grouping and combining objects" on page 209.

To create the illusion of movement in a movie, move objects in small increments from one frame to the next.
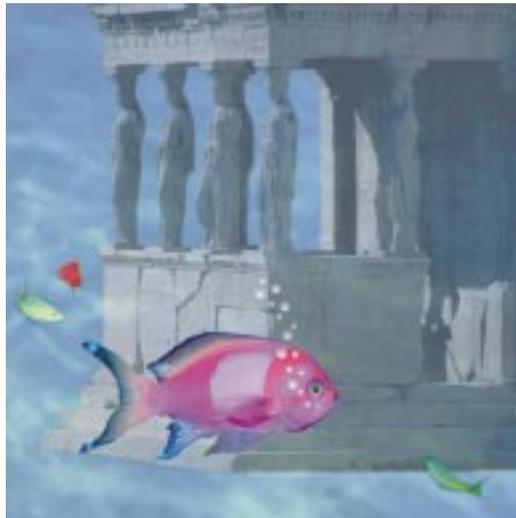
Creating a movie background

You can create a movie background from scratch, or you can create a movie background using an existing image.

To create a movie background from scratch

1. Choose File, New.

2. Choose a color mode from the Color Mode pop-up menu.

3. Choose a background color from the Paper Color picker.

4. Choose a frame size from the Size pop-up menu.

5. Type a value in the Resolution box.

6. Enable the Create A Movie check box.

7. Type a value between 1 and 1000 in the Number Of Frames box to specify the number of frames in the movie.

- If you want to create a movie for use on a Web page, choose the Paletted color mode from the Color Mode pop-up menu. For more information about the Paletted color mode, see "Converting images to the Paletted color mode" on page 346.

- The resolution of a movie file should never exceed 72 dpi, which is the maximum resolution a color monitor can display. Choosing a greater dpi value reduces playback performance.

- You can also specify the frame size by typing values in the Width and Height boxes if you choose Custom from the Size pop-up menu.

- You can specify a different unit of measurement by choosing an option from the pop-up menu beside the Width box.

To create a movie background from an existing image

1. Choose File, Open.

2. Locate the folder in which the file is stored.

3. Choose the filename, and click Open.

4. Choose Movie, Create From Document.

Creating the moving parts

You can move an object in small increments from one movie frame to the next to make the object appear to move. You can superimpose a semitransparent representation of the next or previous frame over the current frame to help you position an object from frame to frame. The superimposed frame acts as a guide so that you can position an object relative to its position in the next or previous frame.

To create a moving object

1. Open the Object/Mask Tools flyout, and click the *Object Picker tool.*

2. Select an object.

3. Choose Edit, Copy to copy the object to the Clipboard.

4. Position the object in the current frame.

5. Choose Object, Combine, Combine Objects With Background.

6. Choose Movie, Control, Step Forward One Frame.

7. Choose Edit, Paste, As New Object.

8. Repeat steps 4 to 7 for each frame in the movie.

To position a moving object

1. Choose Movie, Overlay Frame.

2. Enable one of the following buttons:

   - Previous Frame — superimposes the previous frame over the current frame

- Next Frame — superimposes the next frame over the current frame

3. Move the slider to increase or decrease the opacity of the superimposed frame.

4. Open the Object/Mask Tools flyout, and click the Object Picker tool.

5. Select an object.

6. Position the object in the current frame.

Opening and saving movies

You can open an entire movie or part of a movie in Corel PHOTO-PAINT. Opening part of a movie reduces the amount of data your computer has to process at one time.

You can save a movie before or after you add the background and objects; however, when you save a movie, objects are automatically combined with the background in every frame and are no longer editable. If you want to save your movie for use on a Web page, save it in the animated GIF file format.

Opening a movie

You can open an entire movie file or part of a movie file in Corel PHOTO-PAINT.

To open an entire movie

1. Choose File, Open.

2. Locate the folder in which the movie is stored.

3. Choose the movie filename.

4. Choose Full Image from the pop-up menu below the Open button.

- You can enable the Preview check box to display the first frame of the movie before opening the file.

To open part of a movie

1. Choose File, Open.

2. Locate the folder in which the movie is stored.

3. Choose the movie filename.

4. Click Open.

5. In the Partial Load Movie dialog box, type values in the From and To boxes to specify the range of frames that you want to open.

- • Partial loads are performed by default when you open a movie file.

- • After a part of the movie is open, you can open a different section of a movie by choosing Movie, Select Partial Area.

Saving a movie

You can save a movie before or after you add the background and objects. For information about saving a movie for use on a Web page, see "Saving a movie as an animated GIF file" on page 438.

To save a movie

1. Choose File, Save As.

2. Locate the folder where you want to save the movie file.

3. Choose a file format from the Format pop-up menu.

4. Specify a filename, and click Save.

- • When you save a movie, objects are automatically combined with the background of each frame. This means that you can no longer edit the objects separately from the image.

Saving a movie as an animated GIF file

If you want to add a movie to a Web page, save the movie as an animated GIF file. You can adjust the width and height of the frames, the number of colors in the movie, and the number of times the movie replays automatically. You can also select a color in the movie to be transparent and the amount of time each frame is displayed on screen.

To save a movie as an animated GIF file

1. Choose File, Save As.

2. Locate the folder in which you want to save the movie file.

3. Choose GIF Animation from the Format pop-up menu.

4. Specify a filename, and click Save.

• When you save a movie, objects are automatically combined with the background of each frame. This means that you can no longer edit the objects separately from the image.

To customize animated GIF file settings

1. Follow steps 1 to 4 from the previous procedure.

2. In the Animation Options dialog box, choose the File Settings tab.

3. Enable the Automatic check box to set the width and height of the paper automatically.

4. Type a value between 2 and 256 in the Convert To box to adjust the number of colors in the image.

5. Enable the Loop Frames check box to repeat the frame sequence.

6. Enable one of the following buttons:

   • Forever — repeats the frames continuously

   • Stop After — sets the number of repetitions

• You can type a value in the Background box to specify the background color. The range of values is based on the number of colors in your image.

• You can disable the Automatic check box and type values in the Width and Height boxes to set the size of the paper manually.

• You can enable the Save Difference Between Frames Only check box to save the differences between frames rather than the entire image.

To customize animated GIF frame settings

1. Follow steps 1 to 4 from the "To save a movie as an animated GIF file" procedure.

2. In the Animation Options dialog box, choose the Frame Settings tab.

3. Enable the Image Color button to specify a transparent color for the movie.

   The color you specify is transparent so that you can see the background of the Web page through the movie.

4. Click the Select Color button, choose a color in the Select Color dialog box, and click OK to choose the color you want to appear transparent in your movie.

5. Do one of the following:
   - Type values in the X: and Y: boxes to set the number of pixels by which the current frame is offset from the top left corner of the page.
   - Hold down Shift, select multiple frames in the Preview window, and type values in the dX: and dY: boxes to set the number of pixels by which each proceeding frame is offset from the frame before it.

6. Enable one of the following buttons:
   - Use Global — uses the global palette
   - Use Local — uses a palette consisting of colors found in the image

7. Type a value in the Frame Delay box to specify the length of time between frames (measured in hundredths of a second).

8. Choose an option from the How To Dispose pop-up menu to specify how the previous frame disappears.

9. Click one of the following buttons :
   - Apply Changed Only — applies only the frame settings that have changed
   - Apply All — applies all frame settings

- You can also specify a transparent color by typing an index value of the color you want to be transparent in the Image Color box. The transparent color is invisible, which lets you see the background of a Web page through the movie. This helps the movie blend with the background.

- You can enable the None button in the Transparency section if you do not want to specify a transparent color for the movie.

- You can also enable the Interlace Rows check box to refresh the image after each frame is loaded.

Editing and playing movies

You can edit movies by reorganizing and customizing their frame sequence. You can add frames or files, move frames, or delete frames from the movie entirely. You can also change a movie's frame rate. The frame rate is the length of time that each frame appears on screen before the next frame is played. Frame rate controls the speed of the movie.

After you've edited your movies, you can play them to view the effects of your changes. Movies can be played from beginning to end or one frame at a time. You can also move backward or forward one frame at a time, rewind to the beginning of a movie, fast forward to the end of a movie, or jump to any frame in a movie.

Inserting frames and files into a movie

You can insert empty frames into a movie, or you can insert frames that have been copied from another frame. You can also insert entire movie or image files into a movie.

New frames can be added to a movie anywhere in the frame sequence.
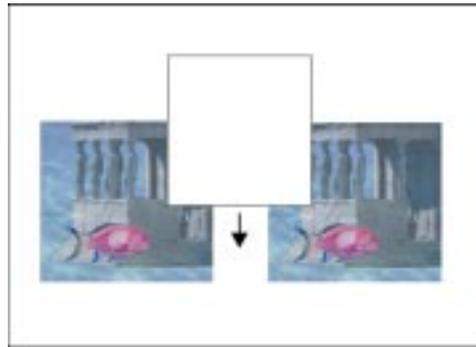
To insert frames into a movie

1. Choose Movie, Insert Frame.

2. Type a value in the Insert box to specify the number of frames to add.

3. Enable one of the following buttons:

   • Before — inserts the frames before the frame specified in the Frame box

   • After — inserts the frames after the frame specified in the Frame box

4. Type a value in the Frame box to specify where the new frames are to be placed.

5. Enable one of the following buttons:

   • Use Paper Color — adds paper-colored frames

   • Copy Current Frame — copies the frame that is visible in the Image Window

To insert files into a movie

1. Choose Movie, Insert From File.

2. Locate the folder where the file is stored.

3. Choose the filename.

4. Choose Full Image from the pop-up menu below the Open button.

5. Click Open.

6. Enable one of the following buttons:

   • Before — inserts the frames before the frame specified in the Frame box

   • After — inserts the frames after the frame specified in the Frame box

7. Type a value in the Frame box to specify the location of the file in the movie.

Deleting frames from a movie

You can remove excess frames or decrease a movie's playback time by deleting frames from a movie.

If your movie is too long or plays back too slowly, delete excess frames from the sequence.
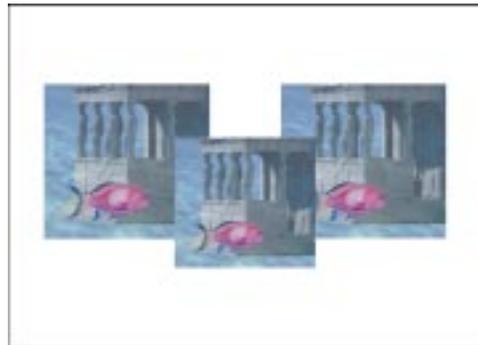
To delete frames from a movie

1. Choose Movie, Delete Frame.

2. Type a value in the From Frame box to specify the first frame to delete.

3. Type a value in the To Frame box to specify the last frame to delete.

- The frames ranging between, and including, the numbers that you specify in the Delete Frames dialog box are deleted.

- You can delete a single frame by typing its number in both the From Frame box and the To Frame box.

Changing the order of movie frames

You can change the order of the frames in a movie by moving one or more frames to a new location.

To change the order of movie frames

1. Choose Movie, Move Frame.

2. Type a value in the Move Frame box to specify the first frame to move.

3. Type a value in the To Frame box to specify the last frame to move.

4. Enable one of the following buttons:

   - Before — positions the frames before the frame specified in the Frame box

   - After — positions the frames after the frame specified in the Frame box

5. Type a value in the Frame box to specify the location of the frames.

- You can move a single frame by typing its number in both the Move Frame box and the To Frame box in the Move Frames dialog box.

Modifying the Frame Rate

Frame rate is the amount of time that a movie frame appears on screen. You can assign a unique display length to individual frames or to all the frames in a movie at once. Changing the frame rate lets you increase or decrease the speed of moving objects from one frame to another.

To change the frame rate of a single frame

1. Choose Movie, Frame Rate.

2. Choose a frame from the Frames box.

3. Type a value in the Frame Delay box.

- You can change the frame rate of multiple frames simultaneously by holding down Shift and choosing the frames, and typing a value in the Frame Delay box.

- You can change the frame rate of an entire movie by choosing Movie, Frame Rate, clicking the Select All button, and typing a value in the Frame Delay box.

- You can test the impact of the frame rate change on the entire movie by clicking the Play Movie button.

Controlling movie playback

When you play a movie, it plays continuously until you stop it. As the movie plays, the progress indicator on the Status Bar displays the percentage of the movie that has been played. You can rewind a movie to display its first frame, or you can fast forward a movie to display its last frame. You can also move to a specific frame, or step forward or backward through the movie one frame at a time.

To play the movie

- Choose Movie, Control, Play Movie.

To stop the movie

- Choose Movie, Control, Stop Movie.

To rewind to the beginning of the movie

- Choose Movie, Control, Rewind To Beginning.

To fast forward to the end of the movie

- Choose Movie, Control, Fast Forward To End.

To move to a specific frame

1. Choose Movie, Go To Frame.

2. Type a value in the Frame box to specify the frame to which you want to move.

To move forward one frame

- Choose Movie, Control, Step Forward One Frame.

To move back one frame

- Choose Movie, Control, Step Back One Frame.

- You can also use the playback controls located at the bottom of the Image Window to rewind, fast forward, step forward, step back, or go to a specific frame of a movie.

PUBLISHING IMAGES TO THE INTERNET

12

Publishing images to the Internet means displaying images on a Web page. It's rare to see a Web site that does not contain images. Images add richness to your Web page — they set the tone, explain concepts visually, and give a professional appearance.

Corel PHOTO-PAINT gives you the tools you need to create images that can be displayed on a Web page. You can save images to file formats that are compatible with Web browsers and create image maps containing clickable areas that link to other Web pages.

Choosing a file format

The three image file formats for the Web are the Graphics Interchange Format (GIF), Joint Photographic Experts Group (JPEG), and Portable Network Graphics (PNG).

The GIF format is often used to save line drawings and images with few colors or sharp edges, such as scanned black-and-white images. The JPEG format is often used to save images with broad tonal ranges, such as photographs or scanned color images. The PNG format is used as an alternative to the GIF and JPEG formats.

GIF file format

The GIF file format was developed as a cross-platform graphic standard, which means that it is supported by all graphical Internet browsers. GIF

supports up to 8-bit color (256 colors) and lets you create custom palettes for your image. GIF offers several advanced graphic options, including transparent backgrounds, interlaced images, image maps, and animation.

The GIF file format uses lossless compression, which means that when you convert an image to the GIF file format, all of the file information is stored within the image so that the GIF file looks exactly like the original image. Because the GIF file format uses lossless compression and does not require a lot of decompression time, GIF images display quickly on screen.

JPEG file format

The JPEG file format was developed as a compression scheme, designed specifically for computer images. JPEG supports up to 32-bit color (4.2 billion colors) and is, therefore, an excellent option for photographs, image maps, and scanned color images.

JPEG files use lossy compression, which means that the image loses information while continuing to provide high-quality images with a high level of compression. You can choose the image quality — the higher the image quality, the larger the file size. JPEG images require some decompression time when displaying on screen but can be displayed progressively. Progressive images appear on screen in their entirety but at a low resolution. As the data loads, the image quality improves gradually.

JPEG compression example: high quality (low compression) versus low quality (high compression).

PNG file format

The PNG file format was developed as an alternative to the GIF and JPEG file formats. The PNG file format supports true color and palette-based images. It uses an advanced lossless compression system and can be used to save transparent images.

A PNG image on a Web page can act as a hyperlink to another Web page that you specify when you save the file. If you do not specify a hyperlink destination, the PNG image remains static.

To display a Web site that contains PNG images, your Internet browser may require that you install a plug-in filter that supports the PNG format. Plug-ins are readily available for downloading from the World Wide Web.

Saving an image to the GIF file format

The GIF file format is designed to take up a minimum amount of disk space and to be easily read and exchanged between systems. Save your images to the GIF file format if you want to publish images of 256 colors or less to the Internet or if you want to use transparent backgrounds, image interlacing, image maps, or animation in your Web pages.

To save an image to the GIF file format

1. Choose File, Export, Export To File.

2. Locate the folder in which you want to save the file.

3. Choose GIF from the Format pop-up menu.

4. Specify a filename, and click Save.

5. In the Gif Export dialog box, enable the Interlace check box to display the image on screen in its entirety while gradually increasing its image quality.

6. Enable one of the following Transparency buttons to define which colors are transparent when viewed in a Web browser:

   • None — specifies that you do not want any colors to be transparent

   • Image Color — makes a color from the image transparent. You can choose a color from the Color Palette or type its index number in the Index box.

   • Masked Area — makes a masked area of your image transparent

• An image's color mode must be 8-bit (256 colors) or less when saving to the GIF file format.

• If your image contains objects, an alert warns you that objects will be merged with the background.

• You can load or create animated GIF images to create movies for your Web page. For more information about creating animations, see "Making and editing movies" on page 433.

Saving an image to the JPEG file format

The JPEG file format provides compression with a minimal loss of image quality. Save your images to the JPEG file format if you want to publish images of up to 32-bit color to the Internet or if you want to save photographs or scanned color images.

To save an image to the JPEG file format

1. Choose File, Export, Export To File.

2. Locate the folder in which you want to save the file.

3. Choose JPEG from the Format pop-up menu.

4. Specify a filename, and click Save.

5. In the JPEG Export dialog box, enable any of the following check boxes:

   • Progressive — loads the image on screen in its entirety at a low resolution. As the data loads, the image quality improves gradually.

   • Optimize — uses the most optimal encoding method

6. Move the Compression slider to select the quality of the image resolution.

7. Move the Smoothing slider to adjust the appearance of the bends and angles in the image.

8. Choose one of the following encoding methods from the Sub Format pop-up menu:

   • Standard (4:2:2) — uses a slightly lower compression quality

   • Optional (4:4:4) — uses a slightly higher compression quality

• You can verify your image's color mode before saving it to the JPEG file format by choosing File, Document Info. For best results, use the 24-bit RGB color mode.

• If your image contains objects, an alert warns you that objects will be merged with the background.

Saving an image to the PNG file format

The PNG file format can be used as an alternative to the GIF and JPEG file formats. Save your images to the PNG file format if you want to publish 8-bit or 24-bit color images to the Internet.

To save an image to the PNG file format

1. Choose File, Export, Export To File.

2. Locate the folder in which you want to save the file.

3. Choose PNG from the Format pop-up menu.

4. Specify a filename, and click Save.

5. In the PNG Options dialog box, enable the Interlace button to display the image on screen while gradually increasing its image quality.

- • You can verify your image's color mode before saving it to the PNG file format by choosing File, Document Info. For best results, use the 24-bit RGB color mode.

- • If your image contains objects, an alert warns you that objects will be merged with the background.

Creating image maps

An image map is a graphic that contains clickable areas that link to Internet addresses on the World Wide Web. A series of coordinates determines the location of the clickable areas within the image. When you click a clickable area, you are automatically linked to another Web page.
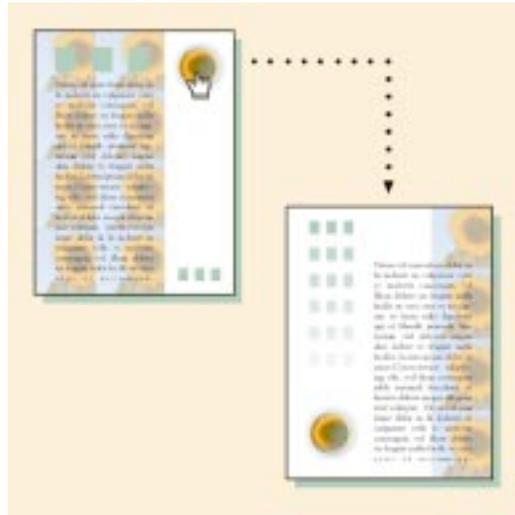
To create an image map, you must:

• assign Internet addresses to objects in your image

• save your image

• choose an image map type

Assigning Internet addresses to objects

You can assign Internet addresses or Uniform Resource Locators (URLs) to the objects in your images by defining clickable areas. When you click an area in your image that has an Internet address associated with it, you are linked to the specified URL. A clickable area can be a polygon that closely follows an object's shape, a rectangle that matches an object's highlighting box, an oval that fits within an object's highlighting box, or a circle that has a radius equal to the object's longest dimension from its center to its edges.

Saving your image

You can save your image to one of three file formats to create an image map: the GIF file format, the JPEG file format, or the PNG file format. For more information about choosing a file format, see "Choosing a file format" on page 447.

Choosing an image map type

When you create image maps, the following files are automatically generated, depending on the image map type you choose:

- an HTML page for Client/Server-Side NCSA, Client/Server-Side CERN, and Client-Side image map types.

- a map file for Client/Server-Side NCSA, Client/Server-Side CERN, Server-Side NCSA, and Server-Side CERN image map types. Client-Side image maps contain the HTML map tags directly in the HTML page.

Creating an image map

You can define clickable areas for an image map by assigning Internet addresses (URLs) to the objects in your image. After you define clickable areas you can save the image to create an image map file. You can choose one of three different map types: Server-Side, Client-Side, or Client/Server-Side.

To create a Server-Side image map

1. Choose File, Publish To Internet.

2. From the Objects list, choose the object that you want to define as a clickable area.

3. In the URL box, type the Universal Resource Locator (URL) or Internet address for the Web page to which you want to link.

4. Choose a shape for the clickable area from the Define Area As pop-up menu, and click OK.

5. Choose JPEG, GIF, or PNG from the Format pop-up menu.

6. Specify a filename, and click Save.

7. Choose the options associated with the file type you specified in step 5, and click OK.

8. In the Save Map File dialog box, type the name for the map file in the File Name box.

9. Choose one of the following map types from the Save As Type pop-up menu:

   - Server-Side NCSA (*.map) — specifies that your server supports NCSA codes

   - Server-Side CERN (*.map) — specifies that your server supports CERN codes

- For more information about saving images for use on Web pages, see "Choosing a file format" on page 447.

- Server-Side image maps do not depend on a Web browser to process the map information; however, you must contact your Internet service

provider to find out whether your server recognizes NCSA or
CERN codes.

- When you save the image, the map file is automatically generated with the name you assign.

To create a Client-Side or Client/Server-Side image map

1. Follow steps 1 to 7 from the previous procedure.

2. In the Save Map File dialog box, type a name for the HTML file in the File Name box.

3. Choose one of the following map types from the Save As Type pop-up menu:

   - Client-Side (*.htm) — specifies that your image map does not depend on a server to process map information, but that the browser used to view your Web pages must support map display

   - Client/Server-Side NCSA — creates the files required for both client and NCSA server sides

   - Client/Server-Side CERN — creates the files required for both client and CERN server sides

4. Type a name for the map file in the Map Name box.

- When you create a Client/Server-Side image map, the map file is automatically generated with the name you assign. Client-Side image maps contain the HTML map tags directly in the HTML page.

- When you save the image, the HTML file is automatically generated with the name you assign.

- If your image contains objects, you are prompted to merge the objects with the background.

- You can enable the Default URL check box in the Save Map File dialog box and type a URL address in the Default URL box to make any part of the image that is not clickable link to that Web page.

- You can type relevant comments in the Comments box in the Tag WWW URL dialog box. These comments appear when your World Wide Web page is accessed by a browser that does not support graphics or that cannot display your image.

- You can also access the Tag WWW URL dialog box by choosing Object, Tag WWW URL, or by double-clicking an object's thumbnail on the Objects Palette and choosing the WWW URL tab.

- You can include the name of the author, a description of the image file, the server information, the name and type of image created, the date that the image was saved, and the type of map file generated by enabling the Include File Header Information check box in the Save Map File dialog box. This information is not displayed on your Web page but is embedded in the HTML code.

CREATING RECORDINGS AND SCRIPTS

13

Recordings and scripts automate a series of actions that you want to repeat on the same image or on several different images. A recording is a series of commands that you record using the Recorder Palette; however, it is not saved when you end your Corel PHOTO-PAINT session. A script is a recording that has been saved and can be retrieved at any time. Both recordings and scripts are created, edited, and played using the playback controls and commands on the Recorder Palette.

Recorder Palette

The Recorder Palette can save you time when performing many standard operations including, resampling images, selecting image areas, and making global adjustments. For example, if you scan a series of photographs into Corel PHOTO-PAINT and discover that they are all too small and underexposed, you can resample and adjust the images to increase their size and brightness. If you record the resampling and adjustment operations as you apply them to the first photograph, you can then play the recording on all the other photographs to repair their problems simultaneously.

AppleScript

In Corel PHOTO-PAINT, scripts are recorded and saved in the AppleScript language. AppleScript is a language created by Apple Computer and used by the Mac OS to automate tasks in scriptable applications, such as Corel PHOTO-PAINT. You can record and save new scripts or run existing

AppleScript scripts to automate your Corel PHOTO-PAINT operations. For more information about AppleScript, see the AppleScript documentation.

Creating and saving recordings

The playback controls on the Recorder Palette can record almost all of your keyboard, toolbar, Toolbox, menu, and mouse operations. As your operations are recorded, they are translated into command statements that are numbered chronologically in the Script list. The commands listed on the Recorder Palette are displayed in the same format as those found in the Undo List dialog box — each command is one word and its syntax is usually composed of the command's name preceded by the name of the menu where it is found.

Creating recordings

Although most Corel PHOTO-PAINT operations can be performed in many different ways, commands are always displayed on the Recorder Palette as if you had used the menu commands. Customizing your menu structure or your keyboard does not affect the recorded command names.

The dialog box options that you select while recording a script are recorded once the dialog box is closed. These options are converted to parameters that are assigned to the command that initially opened the dialog box. For that reason, the options do not appear as actions on the Recorder Palette. This is also true for color selections — if you choose a paint color from the on-screen Color Palette and apply a brush stroke to the image, the color selection does not appear in the Script list on the Recorder Palette; instead, it is recorded as a parameter of the Paint tool.

The following list describes the commands that cannot be recorded in Corel PHOTO-PAINT:

- toolbar, keyboard, and menu customization commands

- Window and Help menu commands

- image calculations and image stitching

- viewing commands such as zooming, and grid, ruler, or guideline customization

Saving recordings as scripts

The commands that you record using the playback controls on the Recorder Palette can be played until you end your Corel PHOTO-PAINT session or start a new recording. If you want to access the recorded commands during another Corel PHOTO-PAINT session, you must save them as a script. The

scripts that you create in Corel PHOTO-PAINT can be loaded and played at any time and can be distributed to other Corel PHOTO-PAINT users.

Consider recording a document-saving command as the first operation in your script. This lets you restore the original image if the script's execution is unsatisfactory.

Creating recordings

You can automate a series of commands by recording them on the Recorder Palette. Recordable commands include mouse movements, toolbar actions, keystrokes, and menu commands. If you do not want to record some of the actions that you are performing during a recording session, you can stop recording, perform the actions, and start recording again.

To create recordings

1. Choose Window, Palettes, Recorder.
2. Click the *New button.*
3. Click the *Record button* on the playback controls.
4. Perform the actions that you want to record.
5. Click the *Stop button.*

- For information about actions that cannot be recorded, see "Creating and saving recordings" on page 458.

Saving recordings as scripts

When you save a recording, it is saved as a script in the AppleScript language. Scripts can be played on images in future Corel PHOTO-PAINT sessions or in any other scriptable application. You can save the changes that you've made to an existing script or save a script under a new name.

To save recordings as scripts

1. Choose Window, Palettes, Recorder.
2. Click the *New button.*
3. Click the *Record button* on the playback controls.
4. Perform the actions that you want to record.
5. Click the *Stop button.*

6. Click the *Save button*.

7. Locate the folder where you want to save the script.

8. Specify a filename, and click Save.

- You can also save a script by clicking the Save button in the Undo List dialog box. For more information about undoing operations, see "Undoing and redoing changes" on page 36.

Playing scripts

When you play a script in Corel PHOTO-PAINT, the recorded commands are applied to the active image. You can play a script by loading it onto the Recorder Palette and clicking the Play button on the playback controls or by choosing the script's name from the AppleScript menu. You can also play part of a recording or script by disabling commands or playing a single command.

Before playing a script, ensure that the active image contains the components that are necessary for successful execution of the recorded operations. If the required components are protected by a mask or locked on the Objects Palette, the script halts. For example, if you play a script that includes commands that are specific to objects, in an image that has no objects, the script cannot be played successfully.

You can play multiple scripts simultaneously by processing them in a batch. Multiple scripts can be played one after the other on one or several images using the Batch Process dialog box. You can load the scripts you want to play and list the images on which they are applied in the Batch Process dialog box. You can also use the Batch Process dialog box to save multiple files in different file formats — without recording a script.

Playing a script

When you play a script in Corel PHOTO-PAINT, the recorded commands are applied to the active image. You can play scripts from the Recorder Palette or from the AppleScript menu. You can include a script in the AppleScript menu by copying it to the COREL GRAPHICS 8\APPLESCRIPTS\COREL PHOTO-PAINT folder.

To play a script from the Recorder Palette

1. Choose Window, Palettes, Recorder.

2. Click the *Open button*.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Click the *Play button* on the playback controls.

To play scripts from the AppleScript menu

- Choose ⬥ , and choose the script's name.

- If you modify a script in an external application (e.g., the AppleScript Editor), you cannot open the script using the Recorder Palette.

Playing one command

You can play a single command from a recording or script using the playback controls on the Recorder Palette. Only the command with the Position Indicator next to its name is run. When you play a single command, you can evaluate the result on the image before playing the rest of the commands in the recording or script.

To play one command

1. Choose Window, Palettes, Recorder.

2. Click the *Step Forward button*.

- You can move the Position Indicator to a new command on the Recorder Palette by double-clicking the command name.

Disabling commands before playback

You can temporarily remove certain commands from the recorded sequence before you play a script or recording. Because you do not remove the commands permanently, you can make them active again without having to recreate the recording or script.

To disable commands before playback

1. Choose Window, Palettes, Recorder.

2. Click the *Open button*.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Do one of the following:

- Hold down Command, and click to select several noncontiguous commands.

- Hold down Shift, and click to select several successive commands.

6. Disable the *Enable/Disable Selected Command(s) button* at the top of the Recorder Palette.

- You can enable a disabled command by choosing the command and enabling the Enable/Disable Selected Command(s) button on the Recorder Palette.

Selecting scripts to play on several images

You can play a script on several images simultaneously. You can also play several scripts on one or more images. This type of batch processing makes it easy to perform global adjustments on several images — without having to open each image and play the script individually.

To select multiple images

1. Choose File, Batch Process.

2. Click the Add File button.

3. Locate the folder where the image is stored.

4. Choose the filename, and click Open.

5. Repeat steps 2 to 4 to open other images.

To select multiple scripts

1. Choose File, Batch Process.

2. Click the Add Script button.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Repeat steps 2 to 4 to open other scripts.

- Batch processing also lets you convert files to new file formats. For example, you can use the Batch Process dialog box to convert multiple files from the Corel PHOTO-PAINT file format to the GIF file format.

Playing scripts on several images

After you choose some images and specify which scripts to play, you can play the scripts. You can specify whether to save images after the batch is processed and you can also specify a folder where the processed images are stored.

To perform batch playback

1. Choose File, Batch Process.

2. Choose one of the following options from the On Completion pop-up menu:

   - Don't Save — does not save the images after the scripts have been played. Choose this option when you want to assess the results before overwriting the original image.

   - Save Over Original — overwrites the current version of every image that was edited with the scripts

   - Save To New Folder — saves the images in a folder that you specify using the Browse button

   - Save As New Type — saves the images in the file format you choose from the Save As Type pop-up menu. You can also choose the folder where the images are stored by clicking the Browse button.

3. Click the Play button.

- For information about selecting files and scripts, see "Selecting scripts to play on several images" on page 462.

- You can enable the Close File After Batch Playback check box to save and close images after the scripts have been played.

Saving several images in a different format

You can save multiple images in a different file format without having to record a script or export the files individually.

To save several images in a different format

1. Choose File, Batch Process.

2. Click the Add File button.

3. Locate the folder where the image is stored.

4. Choose the filename, and click Open

5. Repeat steps 2 to 4 to open other images.

6. Choose Save As New Type from the On Completion pop-up menu.

7. Choose a file format from the Save As Type pop-up menu.

8. Click the Play button.

- If you choose certain file formats (e.g., the OS/2 Bitmap format), a second dialog box opens. You can customize the file format options and click Save to save the files in the new file format.

- You can specify a location for the images you are saving in the new file format by clicking the Browse button.

Editing recordings and scripts

You can edit an active recording or a script on the Recorder Palette by selecting commands and moving the Position Indicator. After you make a selection you can delete the commands you no longer want to perform, record over existing commands, and insert new commands. If you save a recording that you've created on the Recorder Palette, you can also edit it in the Apple Script Editor; however, after you edit a Corel PHOTO-PAINT script externally, you can no longer open it using the Recorder Palette.

Selecting commands

After you select commands on the Recorder Palette, you can replace them or delete them from the recording or script. To deselect an individual command or an entire block of commands, choose any other command.

To select a command

1. Choose Window, Palettes, Recorder.

2. Click the *Open button*.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Choose a command from the Script list.

To select a block of commands

1. Choose Window, Palettes, Recorder.

2. Click the Open button.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Click the first command you want to select.

6. Hold down Shift, and click the last command you want to select.

To select multiple commands

1. Choose Window, Palettes, Recorder.

2. Click the Open button.

3. Locate the folder where the script is stored.

4. Choose the filename, and click Open.

5. Click a command.

6. Hold down Command, and click a command.

7. Repeat step 6 to select other commands.

Moving the position indicator

You can edit a recording or script on the Recorder Palette using the Position Indicator. The Position Indicator points to the current command in the Script list. The current command is either the next command to be played or the point below which new commands are inserted.

To move the Position Indicator to the first command

- Click the *Rewind button* on the playback controls.

To move the Position Indicator to the last command

- Click the *Fast Forward button* on the playback controls.

To move the Position Indicator to any command

- Double-click a command.

Inserting commands into a script or recording

You can insert commands into an existing recording or script using the Insert New Command button on the Recorder Palette. The new command is

inserted after the selected command in the Script list. If the Insert New Command button is not enabled, the selected command and the commands that follow are overwritten with the new commands.

To insert commands into a script or recording

1. Enable the *Insert New Command button.*

2. Double-click a command to move the Position Indicator.

3. Click the *Record button.*

4. Perform the actions you want to record.

5. Click the *Stop button.*

Deleting a command

If you want to remove a command from a recording or script, you can delete it from the Script list on the Recorder Palette. If you delete commands from a script, you must save the script before closing it to save your changes.

To delete a command

1. Click a command.

2. Click the Delete Selected Command(s) button.

CUSTOMIZING COREL APPLICATIONS 14

Corel applications contain customization features that let you create unique Workspaces. You can customize keyboard shortcut keys, menus, color palettes, toolbars, and the Status Bar by changing their appearance, placement on screen, and more.

Once you have your workspace looking how you like it, you can save it using the Workspace page in the Preferences dialog box. You can access your custom settings quickly by loading your saved Workspace.

Customizing Workspace settings

Corel applications let you customize your Workspace settings. You can set up your screen the way you want, choose options in the Preferences dialog box, and then create a custom Workspace to save all your settings. You can customize the tools and operations that you use most including toolbars, menus, shortcuts keys and more. You can access your custom settings by loading your saved Workspace. You can create different Workspace environments for different users or projects. For more information on creating custom Workspaces see "Using multiple workspaces" on page 9.

Customizing keyboard shortcuts

Keyboard shortcuts can help you work more efficiently and productively by providing you with a faster way to access certain commands or actions. You can assign new keyboard shortcuts and modify existing ones. You can delete

shortcuts you no longer need, and you can restore the original settings of default shortcuts. As well, you can save and load keyboard configurations to use with particular projects.

You can also view and print the list of all current keyboard shortcuts and save it as a CSV file, a text file which can be read by other programs.

Assigning keyboard shortcuts

When you change the shortcuts that are assigned to keyboard keys, the changes are saved in a file called an accelerator table. Corel applications come with two accelerator tables: the Main table, containing all non-text related shortcut keys and the Text Editing table containing all the text related shortcut keys. These tables can be customized to suit your work habits.

To assign a keyboard shortcut to a command or tool

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Shortcut Keys.

3. Choose the accelerator table you want to make your changes to from the Table pop-up menu.

   Corel applications include two accelerator tables: Main (active when you're in regular drawing mode) and Text Editing (active when you're in text mode).

4. On the Shortcut Keys page, double-click a folder from the list to see a list of available commands or tools.

   Some folders may have sub-folders. If so, continue double-clicking until you see the list of available commands or tools.

5. Choose a command or tool from the list.

   The Current Shortcut Keys box contains a list of shortcut keys currently assigned to that command or tool.

6. Type the key combination that you want to assign to the command or tool in the Press New Shortcut Key box.

   Your shortcut can use up to four different keystrokes. For example, you can assign the key combination Control + Option + Shift + 1 by holding down Control, Option, Shift, and 1.

7. Click the Assign button.

To delete a shortcut

1. Follow steps 1 to 5 from the previous procedure.

2. Choose the keyboard shortcut that you want to remove from the Current Shortcut Keys box.

3. Click the Delete button.

- • To avoid assigning the same keyboard shortcut to two commands, enable the Delete Conflicts check box and the Navigate to Conflict check box. The Delete Conflicts check box will delete an existing shortcut when a new shortcut using the same combination is assigned. The Navigate to Conflicts check box will then highlight the command which no longer has a keyboard shortcut, and prompt you to enter a new shortcut in the Press New Shortcut Key box. If you enable the Delete Conflicts check box without enabling the Navigate to Conflicts check box, you are not prompted to enter a new shortcut combination to replace the one being erased. The Navigate to Conflicts check box is only effective when used in conjunction with the Delete Conflicts check box.

Printing your keyboard shortcuts

You can print a list of the keyboard shortcuts using the Shortcut Keys page in the Preferences dialog box.

To print your keyboard shortcuts

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Shortcut Keys.

3. Click the View All button.

4. Click the Print button.

Saving your keyboard shortcuts in a format readable by other programs

You can save the keyboard shortcut list as a CSV file. A CSV file is a text file that can be read by applications such as word processors or spreadsheets.

To save your shortcut keys in a format readable by other programs

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Shortcut Keys.

3. Click the View All button.

4. Click the Export To CSV button.

5. Locate the folder in which you want to save the file.

6. Type a filename.

7. Click the Save button.

Customizing menus

Corel customization features let you change the Menu Bar and the menus it contains. For example, you can add commands to existing menus or add new menus to the Menu Bar. You can also remove menu commands or entire menus. Furthermore, you can change the name or order of menus and the commands they contain to give you easy access to the functions you use most often.

Corel online Help is based on the application's default settings. When you customize menus and menu commands, the Help topics associated with them do not change to reflect your changes.

Changing the order of menus

You can use the Menus page in the Preferences dialog box to change the order of menus as they appear on the Menu Bar.

To change the order of menus

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. Choose an item from the Menu pop-up menu.

4. Choose a menu from the list below the Menu pop-up menu.

5. Do one of the following to change the order:
   - Click the Up or Down button until the menu occupies the position you want.
   - Drag the menu to its new position.

Changing the order of menu commands

You can use the Menus page in the Preferences dialog box to change the order in which menu commands are listed.

To change the order of menu commands

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. Double-click the menu name you want to customize in the list on the right side of the Menus page.

4. Choose the name of the command you want to move.

5. Do one of the following to change the order:

    *   Click the Up or Down button until the menu command occupies the position you want.

    *   Drag the command to its new position.

Adding and removing menus

Corel applications let you customize the Menu Bar by adding new menus for commands or features that you use most often. You can also remove menus that you no longer need.

To add a menu to the Menu Bar

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. Choose Main Menu from the Menu pop-up menu.

4. In the list on the right side of the Menus page, choose the menu beside which you want to add a new menu.

5. Click the Add Menu button.

    The new menu appears below the chosen menu in the dialog box, but will appear to the right of the chosen menu in the Menu Bar.

6. Type a name for the new menu.

To remove a menu from the Menu Bar

1. Follow steps 1 to 3 from the previous procedure.

2. From the list on the right side of the Menus page, choose the menu you want to remove.

3. Click the Remove button.

Adding and removing menu commands

You can customize your work environment by choosing which commands appear in a menu. You can also remove commands that you no longer need.

To add a menu command to a menu

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. In the list of menus on the right side of the Menus page, double-click the name of the menu to which you want to add a command.

4. Choose the command name under which you want the new command to appear.

5. In the list of commands and tools on the left side of the Menus page, double-click the folder that contains the command you want to add.

6. Choose the command you want to add.

7. Click the Add button.

To remove a menu command from a menu

1. Follow steps 1 and 2 from the previous procedure.

2. In the list of menus on the right side of the Menus page, double-click the name of the menu from which you want to remove a command.

3. Choose the command name that you want to remove.

4. Click the Remove button.

- • You can also add menu commands by dragging them from the Commands box to the box below the Menu box.

Adding and removing menu command separators

You can add or remove menu command separators — the horizontal lines between commands in a menu — to create groups of commands.

To add a menu command separator

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. In the list on the right side of the Menus page, double-click the name of the menu to which you want to add a separator.

4. Choose the command below which you want the separator to appear.

5. Click the Separator button.

To remove a menu command separator

1. Follow steps 1 and 2 from the previous procedure.

2. In the list on the right side of the Menus page, double-click the name of the menu from which you want to remove a separator.

3. Click the separator you want to remove.

4. Click the Remove button.

Renaming and restoring menus and menu commands

You can change the names of the menus and menu commands that appear in the Menu Bar, or you can restore the original menu settings.

To rename a menu or menu command

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Menus.

3. In the list on the right side of the Menus page, double-click the name of the menu containing the sub-menu or command you want to rename.

4. Double-click the menu or command name you want to rename.

   A text cursor appears in the menu name and a highlighting box appears around the name.

5. Type the new menu name.

- To restore the original menu settings, click the Reset button on the Menus page of the Preferences dialog box.

Customizing the Color Palette

You can manipulate the on-screen Color Palette to suit your needs. You can dock the Color Palette at the top, bottom or sides of the main screen, or drag it inside the main screen to create a floating Color Palette.

Create custom color palettes for which you choose the contents, color, and arrangement. With custom color palettes you can group colors in small or

large swatches, and in multiple rows, or save and load the contents of your custom Color Palette for use with specific projects.

Moving the Color Palette

You can move the Color Palette anywhere on the screen. Placing it inside the main screen turns it into a floating Color Palette. Placing it at the top, bottom or side of the main screen docks the Color Palette, making it part of the screen border.

To move the Color Palette

- Click the Color Palette's border, and drag it to a new position.

To dock the Color Palette

- Drag the Color Palette toward the edge of the main screen until the Color Palette outline switches to full-screen size.

- Double-clicking any empty area on the Color Palette when it is floating docks it to its last docked position.

Resizing the Color Palette

You can change the size of the Color Palette both when it is floating (separate from the main screen) or when it is docked (attached to the main screen).

To resize a docked Color Palette

1. Hold down Control and click an empty area on the Color Palette, then choose Properties.

2. Type a value in the Maximum Number Of Rows While Docked box.

To resize a floating Color Palette

1. Place the cursor on the bottom right corner of the Color Palette.

2. Drag the Color Palette to the desired size.

To expand the Color Palette

- When the Color Palette is docked, choose [◄] to view more colors.

Moving and removing colors on the Color Palette

You can change the order in which the colors appear on the Color Palette, or you can remove colors altogether.

To move a color swatch on the Color Palette

• Drag a color swatch to a new position on the Color Palette.

To remove a color swatch from the Color Palette

1. Choose Window, Color Palette, Palette Editor.

2. Select a color swatch.

3. Click the Remove button.

Using custom color palettes

Corel applications supply several preset process and custom color palettes, along with spot color palettes. You can open a preset color palette or create a new custom color palette by adding, deleting, or rearranging colors. You can save your palette under a new name using the Palette Editor dialog box, or by holding down Control and clicking the Color Palette. For more information about custom color palettes, see "Customizing color palettes" on page 330.

To create a new custom palette

1. Choose Window, Color Palette, Palette Editor.

2. Click the New button.

3. Type a filename for the new palette.

4. Click the Save button.

To save a palette using a new filename

1. Choose Window, Color Palette, Palette Editor.

2. Click Save As.

3. Type a filename for the new palette.

By default, the application saves all palette configurations in the same directory. You can use the controls in the Save Palette As dialog box to specify a different directory.

4. Click Save.

To open a custom palette

1. Choose Window, Color Palette, Palette Editor.

2. Click Open.

3. Locate the folder where the palette is stored.

4. Choose the palette's filename.

5. Click Open.

• To add a new color to the custom color palette see "Changing the colors in the on-screen Color Palette" on page 329.

Changing the appearance of the Color Palette

You can change the appearance of the Color Palette by changing the size of the color swatches or by displaying or hiding the no color swatch.

To change the size of the color swatches

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Palette.

3. Do one of the following:

   • Enable the Large Swatches check box to display large color swatches.

   • Disable the Large Swatches check box to display small color swatches.

To display or hide the No Color swatch

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Palette.

3. Enable or disable the Show "No Color" Well check box.

• On the Color Palette, the No Color swatch is represented by an "X".

Customizing toolbars

You can control the position and content of the toolbars and the Property Bar. Using the mouse, you can resize or move your toolbars anywhere on the screen. You can also add, remove, and rearrange toolbar controls, or create your own toolbars containing the controls you use most often.

• Corel online Help is based on the application's default settings. When you customize the toolbars, the Help topics associated with them do not change to reflect your changes.

Moving and resizing a toolbar

You can move the toolbar anywhere on the screen. Placing it at the top, bottom or side of the main screen docks the toolbar, making it part of the main screen border. You can also change the size of the toolbar when it is floating but not when it is docked.

To move a toolbar

• Click the toolbar's title bar and drag it to a new position.

• When you drag the toolbar into the main screen, it becomes a floating toolbar.

To dock a toolbar

• Click the toolbar's title bar and drag it toward the edge of the screen until the toolbar's outline changes to full-screen size.

To resize a floating toolbar

1. Place the cursor on the bottom right corner of the toolbar.

2. Drag the toolbar to the desired size.

• Double-clicking empty space on the toolbar when it is floating docks it to its last docked position.

Displaying toolbars

The toolbars that come with your Corel application give you access to a variety of frequently used commands and functions.

To display an existing toolbar

1. Choose Edit, Preferences.

2. In the list of categories, choose Customize.

3. Enable the check box next to the toolbar that you want to display.

• You can also display the list of toolbars by choosing Window, Toolbars.

Creating a custom toolbar

You can create custom toolbars that contain the buttons you use most often. You can delete custom toolbars at any time, unlike the predefined toolbars provided with the application.

To create a custom toolbar

1. Choose Edit, Preferences.

2. In the list of categories, choose Customize.

3. Choose New.

4. Type a name for the new toolbar.

To delete a custom toolbar

1. Choose Edit, Preferences.

2. In the list of categories, choose Customize.

3. Choose the name of a toolbar from the Toolbars list.

4. Click the Delete button.

Configuring toolbars

You can add and remove toolbar items from toolbars, but you cannot add or remove toolbar items from the Toolbox or from any of its flyouts. You can also restore the original configuration of a built-in toolbar.

To ...	Do This ...
Move a toolbar item	Hold down Option, and drag the toolbar item to its new position on the same toolbar or to a new toolbar.
Remove a toolbar item	Hold down Option, and drag the toolbar item off the toolbar.

To add a toolbar item to a toolbar

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. In the Commands list, double-click the folder that contains the toolbar item you want to add.

4. Drag the toolbar item from the Preferences dialog box to the toolbar.

To restore the original configuration of a built-in toolbar

1. Choose Edit, Preferences.

2. In the list of categories, choose Customize.

3. Enable the check box next to the toolbar you want to reset.

4. Click the Reset button.

Customizing the Property Bar

You can customize what appears on the Property Bar when you have different items selected. For example, when you select the rectangle tool, the Property Bar displays the default rectangle settings and controls. You can remove these items and add items as needed.

To customize the Property Bar

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. Choose the Property Bar you want to customize in the Property Bars pop-up menu.

4. Double-click the folder containing the toolbar item.

5. Drag the toolbar item from the Preferences dialog box to the Property Bar.

• You can also access the Preferences dialog box by holding down Control and clicking the Property Bar, then choosing Customize.

Renaming custom toolbars

You can change the names of custom toolbars at any time, but you cannot change the names of the predefined toolbars provided with the application.

To rename a toolbar

1. Choose Edit, Preferences.

2. In the list of categories, choose Customize.

3. Double-click the name of the custom toolbar you wish to rename.

   A text cursor appears in the menu name and a highlighting box appears around the name.

4. Type a new name for the toolbar.

Resizing toolbar items

You can change the size of boxes, pop-up menus, and other toolbar items.

To resize toolbar items

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. On the toolbar (i.e., outside the Customize dialog box) click the toolbar item you want to resize.

4. Drag the sides of the toolbar item to resize it.

- You can also access the Toolbars page of the Preferences dialog box by holding down Control and clicking a toolbar, then choosing Customize.

Changing the appearance of toolbar buttons

You can change the appearance of toolbar buttons by editing the button's bitmap or by displaying text instead of a bitmap.

To edit the bitmaps on toolbar buttons

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. On the toolbar (i.e., outside the Customize dialog box) hold down Control, choose the toolbar item you want to edit and choose Properties.

4. Use the controls to change the appearance of the bitmap.

- You can also access the Toolbars page of the Preferences dialog box by holding down Control and clicking a toolbar, then choosing Customize.

Customizing the Status Bar

The Status Bar gives you constant, up-to-date information about your working environment, such as the colors used for fills and outlines and the position of your cursor. You can customize the status bar's position, appearance, and content. You can only drag Status Bar items on to the Status Bar from the Toolbars page of the Preferences dialog box.

Moving or resizing the Status Bar

You can move or resize the Status Bar and you can resize Status Bar items.

To move the Status Bar

- Click the Status Bar's border, and drag it to a new position.

To resize the Status Bar

1. Hold down Control and click the Status Bar.

2. Choose Size, and then choose either One Line or Two Lines.

To resize a Status Bar item

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. On the Status Bar, choose the Status Bar item you wish to resize.

   A highlighted box appears around the item.

4. Position the cursor on the edge of the highlighted box.

   The cursor changes to a two directional arrow.

5. Drag to resize the item.

- You can also access the Toolbars page of the Preferences dialog box by holding down Control and clicking the Status Bar, then choosing Customize.

Changing the contents of the Status Bar

You can customize the Status Bar to display various types of information, such as the colors used for fills and outlines and the position of your cursor.

To change the contents of the Status Bar

1. Choose Edit, Preferences.

2. In the list of categories, double-click Customize, and choose Toolbars.

3. Double-click the Status Bar folder in the Commands box.

4. Drag a Status Bar item (on the right) to the Status Bar.

- You can also access the Toolbars page of the Preferences dialog box by holding down Control and clicking the Status Bar, then choosing Customize.

Hiding or displaying the Status Bar

If you want to enlarge the viewing area of your main screen, you can hide the Status Bar. You can display it again any time you need it.

To display or hide the Status Bar

- Choose Window, Status Bar.

- If no check mark appears next to the command name, the Status Bar is hidden. If a check mark is there, the Status Bar is displayed.

- You can also hold down Control and click the Status Bar, then choose Hide Status Bar.

Customizing Palettes

Palettes are floating dialog boxes which let you access frequently used functions. Palettes can be grouped together so that a single dialog box gives you access to the commands of several Palettes. Palette groups on the screen support drag and drop, allowing you to group and ungroup Palettes while you work.

Creating Palette groups

You can combine two or more Palettes into a single Palette group. In a group, only one Palette is active at a time.

To create a Palette group on screen

1. Choose Window, Palettes and open the Palettes you want to group together.

2. Using the Palette's tab, drag one Palette onto another.

3. Continue adding Palettes until your group is complete.

Removing a Palette from a Palette group

You can remove individual Palettes from a group.

To remove a Palette from a Palette group

1. Open the Palette group.

2. Using the Palette's tab, drag the Palette out of the group.
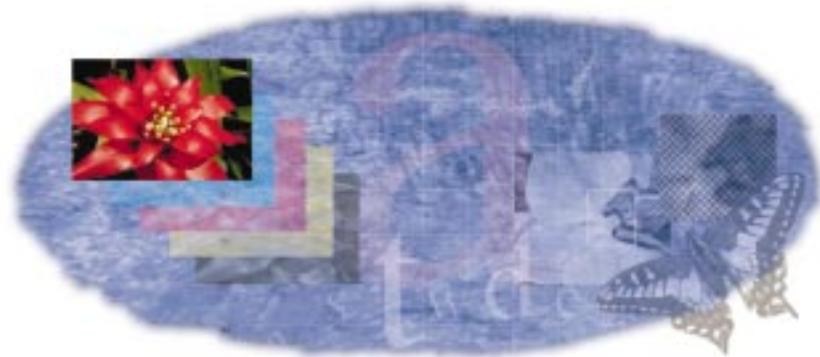
PRINTING

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Corel provides extensive printing options designed for both desktop and commercial printing. You have control over what you print, the size and position of a print job, and the order and orientation of the pages of a print job. You can preview a print job to see how it will look when you print. Most of the printing features that are provided are not required to print simple documents on a desktop printing device. If you are looking for basic printing instructions, see "Setting up a print job" on page 485.

If you are using a PostScript printing device and are having trouble printing, see "Using PostScript to optimize a print job" on page 496. You can also fix certain problems by adjusting settings, as explained in "Fine-tuning a print job" on page 499. We recommend that you do not adjust these settings unless you are having trouble printing.

If you plan to print a document on a commercial printing press, see "Commercial printing" on page 500. This section contains information about creating printing plates, preparing images for printing on commercial printing presses, and other issues of which you should be aware.

Setting up a print job

It is essential that you check your printer settings in Page Setup before you print, making sure that you have selected the correct printer. Consult the printing device manufacturer's instructions, the Macintosh documentation, or the service bureau or printing shop that will be printing the work to find out how best to set up the printing device driver.

Corel print options offer a great deal of control over what parts of your work you wish to print. You can print specific layers. You can also specify the number of copies you want to print and whether you want the copies collated. Collating is useful when you are printing multipage documents. If you enable the Collate check box, a complete copy of each document is printed before the next copy is printed. If collating is disabled, all the copies of the first page are printed before copies of the second page are printed, and so on.

Printing a document

Once your printing device is properly installed and configured, you may often find that you can print without changing any of the default settings.

To print a document

1. Choose File, Print.
2. Click the Print button.

Selecting and configuring a printing device

Because printing device installation is controlled by the Mac OS and every type of printing device has different device properties, refer to the printing device manufacturer's documentation and the Macintosh documentation for more information about installing and setting up a printing device.

By default, if you try to print a print job with an orientation different from that specified in the device properties, a message warns you and asks if you want to adjust the printing device paper orientation. You can disable this warning so that the paper orientation is automatically adjusted.

To set the Page Setup properties

1. Choose file, Print.
2. Click the Page Setup button.
3. Choose the desired page setup settings

To set the printer properties

1. Choose File, Print.
2. Click the Printer button
3. Choose the desired printer settings.

To disable the Page Orientation Warning

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. In the Special Settings section, choose Page Orientation Warning from the Options list and choose Off from the Setting list.

- • For detailed information on how to select a printing device refer to the Mac OS documentation or the printing device manufacturer's documentation.

- • Any duplicate settings that exist in the Printer Settings dialog box should be set up in the Print Option dialog box. Otherwise, the printer settings will either not function properly or have adverse affects on the print job.

Using a printing device color profile

A printing device color profile helps to ensure accurate color reproduction. This feature can be enabled or disabled when you print.

To enable the current printing device color profile

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. Enable the Use Color Profile check box.

To choose a printing device color profile

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. Click the Set Profiles button.

4. Choose a color profile from one of the following pop-up menus:

    - • Composite Printing device — if you are not printing color separations

    - • Separations Printing device pop-up menu — if you are printing color separations

Printing multiple copies

You can print multiple copies of the same document. If you are printing a document with multiple pages, you can collate the copies.

Collating allows you to print one full set of the selected pages before printing the second full set (for example, a set of pages 1 to 10 prints before a second set of pages 1 to 10 prints, and so on).

To print multiple copies

1. Choose File, Print.

2. Type the number of copies you need in the Copies box.

3. Enable the Collate check box if you want the copies collated.

Specifying the documents to print

If more than one document is open, you can choose to print all or some of these documents.

To print multiple documents

1. Choose File, Print.

2. Choose the documents you want to print by enabling their check boxes from the Documents list box.

Printing large print jobs as tiles

If the print job you want to print is larger than the paper on which it is to be printed, you can choose to print it as tiles. Portions of each page of the print job are printed on separate sheets of paper that you can assemble into one large sheet.

To print large print jobs as tiles

1. Choose File, Print.

2. Choose the Layout tab.

3. Enable the Print Tiled Pages check box.

4. Type a value (for example, .25 inches) or a percentage of the page size in the Tile Overlap box to specify by how much you want the tiles to overlap.

To print large print jobs as tiles from the Print Preview window

1. Choose File, Print Preview.

2. Choose Settings, Layout.

3. Follow steps 3 and 4 from the previous procedure.

Using preset printing options

A print style is a set of saved printing options. Print styles are useful because they let you avoid setting all the printing options each time you print.

To select a print style

1. Choose File, Print.

2. Choose a print style from the Print Style pop-up menu.

To create a print style

1. Choose File, Print.

2. Choose the desired settings, and click the Apply button.

3. Click the Save As button in the General tab.

4. Type a name for the style in the Save Print Style As box.

To edit a print style

1. Choose File, Print.

2. Choose a print style from the Print Style pop-up menu.

3. Follow steps 2 to 4 from the previous procedure.

To delete a print style

1. Choose File, Print Preview.

2. Choose a print style from the Print Style pop-up menu.

3. Choose File, Delete Print Style.

- When you save a print style, a dialog box opens that includes a section called Settings To Save In Style. The settings in this section correspond to the printing options you've already selected. You can specify which settings to include in a print style in this section of the dialog box.

- You can select, edit, save, and delete print styles from the Print Preview window.

- If you close the Print dialog box before you print, all of the changes you have made to the print options are discarded. If you do not want to lose these changes and you need to close the dialog box (that is, you need to change the work before you print), save the settings as a print style, or click the Apply button before you click the Cancel button.

Printing multiple pages on a single printed sheet

If each page of a document is smaller than the sheet of paper on which it is printed or if you shrink the pages of a document, then you can print several pages on a single sheet of paper. There are two methods for printing multiple pages of a document on a single printed sheet: using signature layout styles and using N-up formats. Although these methods are similar, each one is appropriate for different tasks.

Signature layout styles let you determine the order and orientation of each page on the printed sheet. This allows you to arrange the pages of a document on the printed sheet for folding, trimming, and binding. Use signature layout styles if you are creating documents that require folding, such as greeting cards or newsletters. Also, you can create custom signature layout styles for magazines, books, and any other type of document that requires that you arrange several smaller pages on a large sheet of paper.

N-up formats let you arrange several signature layouts on a single printed sheet or print multiple copies of the same signature layout on a single printed sheet. This is useful if you are printing on paper that can fit more than one copy of a signature layout or if you want to print thumbnail proofs of a document.

- For advanced imposition considerations such as, shingling, and bottling, full featured imposition applications like Imation PressWise or ScenicSoft Preps are ideal. These programs will accept Document Structuring Conventions conforming PostScript files from CorelDRAW.

Using signature layout styles

If you want to layout several images on each sheet of paper to create a specific type of document, such as a greeting card or a pamphlet, then you can use a signature layout style. The signature layout style will not effect the original images, only the way they are printed. For example, if you want to print four images as a top-fold or side-fold card, you can choose the appropriate signature layout style for a card.

To choose a signature layout style

1. Choose File, Print.
2. Choose the Layout tab.
3. Choose a signature layout style from the Signature Layout pop-up menu.

Using N-up formats

You can use a preset N-up format or create one by using the N-Up Format tool. You can also print several pages on a single sheet of paper using the N-Up Format tool. When you use this tool, each page is placed into a single frame that is defined by the intersection of one row and column in the N-up format. The first page is placed in the frame at the top left of the sheet of paper and each subsequent page is placed from left to right and top to bottom. Use the Property Bar to change the N-up format options.

If you use an N-up format with a signature layout style that already places several pages on a single sheet of paper (for example, tent-card), then the signature layout is placed in one frame.

To use a preset N-up format

1. Choose File, Print Preview.
2. Choose the *N-up Format tool*.
3. Choose a preset N-up format from the N-Up Format pop-up menu.
4. Choose File, Close Print Preview.

To create an N-up format

1. Choose File, Print Preview.
2. Choose the N-Up Format tool.
3. Type the number of rows and columns you want to print on each sheet of paper in the Rows/Columns boxes.
4. Disable the Auto Margins button and type the size of the margins in the Top/Left Margins, Bottom/Right Margins boxes to manually set the margins.
5. Enable the Equal Margins button if you want the left and right margins to be equal, and you want the top and bottom margins to be equal.
6. Disable the Auto Gutter Spacing button, and type the size of the gutters in the Gutter Spacing boxes to manually set the gutters.
7. Enable the Clone Frame button if you want all the frames on each sheet of paper to contain the same printed page.

   For example, if there are nine frames on a printed sheet of paper, then page one appears nine times on the first sheet of paper, page two appears nine times on the second sheet, and so on. In this way you can print multiple copies of one page on a single sheet.

8. Enable the Maintain Document Page Size button if you want each frame to be the same size as the page size specified in the document.

For example, if you create a document on an 8.5 by 11 inch sheet of paper, the frames are constrained to that size. Thus, if you print on an 11 by 17 inch sheet of paper and specify two rows by two columns, some of the frames will not fit on the page.

To save an N-up format

1. Follow the steps the from the previous procedure.

2. Click the Save *N-up format button*.

3. Type a name for the settings in the Save As box.

To delete an N-up format

1. Follow steps 1 and 2 from the "To create an N-up format" procedure.

2. Choose an N-up format from the N-up Format pop-up menu.

3. Click the *Delete N-up format button*.

Previewing, sizing, and positioning a print job

The Print Preview window lets you see how the print job appears when printed. It shows you the position and size of the print job on the paper. You can also see printers' marks, such as crop marks and color calibration bars.

If you are using a Full Page or Manual signature layout style, you can change the position and size of the print job on the printed page. If you are printing bitmaps, use caution when sizing print jobs. Enlarging bitmaps may cause the output to appear jagged or pixelated.

Previewing a print job

The Print Preview window lets you see what the print job looks like when printed.

To preview a print job

• Choose File, Print Preview.

To move from page to page in the Print Preview window

• Choose one of the Page Navigation Tools, located on the Page Navigation Control Bar at the bottom of the Print Preview window. The button pointing left flips back through the pages and the button pointing right flips forward through the pages. The arrow buttons are only accessible when print options are set for more than one page, not when print options are set to print the current page only.

• The Go To dialog box provides an alternative method for moving from page to page. To open the Go To dialog box, click View, Go To.

To print the page being previewed

• Choose File, Print This Sheet Now.

To magnify the page being previewed

1. Choose View, Zoom.

2. Do one of the following:

   • Choose one of the preset zoom levels.

   • Enable the percent button, and type a value in the Percent box.

To preview individual color separations

1. Choose View, Preview Separations, Separations.

   You can only view individual color separations if you have enabled the Print Separations check box in the Print dialog box.

2. Choose the appropriate tab at the bottom of the Print Preview window to view each color separation.

- You can zoom in on an area of the print job in the Print Preview window by using the Zoom tool. To zoom in, click the Zoom tool and click the area you want to magnify. To zoom out, hold down Control, click the object and choose Zoom Out.

- The Auto (Simulate Output) preview type (View menu, Preview Separations) automatically sets the preview type to the settings that match the printing device driver. For example, if you are printing to a black-and-white printing device, the preview is grayscale. The Auto (Simulate Output) preview type is enabled by default. If you change the preview settings, then Auto (Simulate Output) is disabled. You can revert to the automatic settings by clicking View, Auto (Simulate Output).

Customizing the print preview

If you want to increase the speed of the print preview, you can hide the print job. You can also specify a color or a grayscale preview.

To hide the print job

1. Choose File, Print Preview.

2. Choose View, and disable Show Image.

   When Show Image is disabled, the print job is represented by a bounding box that you can use to position and size it.

To specify a color or grayscale print preview

1. Choose File, Print Preview.

2. Do one of the following:

   - Choose View, Preview Color, Color.

   - Choose View, Preview Color, Grayscale.

- Displaying individual color separations in grayscale instead of color can be helpful when you are studying color distribution. Yellow is particularly difficult to see against a white background. Even magenta and cyan, if sparse, are easier to see when displayed in grayscale.

Sizing a print job

You can alter the size of each page of the print job, leaving the original unaffected. The height and width ratio of a print job is known as its "aspect." If

you are sizing or scaling a print job using the Print Preview window, it is a good idea to enable the Maintain Aspect Ratio check box to prevent distortion.

To size the print job

1. Choose File, Print Preview.

2. Using the Pick Tool, click on the object you wish to print.

3. Type values in the Width and Height boxes on the Property Bar.

- • You can only size a print job this way when you are using the Full Page layout style, with no rows or columns, or when you are using the Manual layout style.

- • You can also size each page of a print job by dragging the handles in the Print Preview window.

To fit the print job to the page

1. Choose File, Print.

2. Choose the Layout tab.

3. Enable the Fit To Page button.

   The Fit To Page option might distort the print job if you do not enable the Maintain Aspect Ratio check box.

To maintain the aspect ratio of the print job

1. Follow steps 1 to 3 from the previous procedure.

2. Enable the Maintain Aspect Ratio check box.

Positioning a print job

You can alter the position of each page of a print job on the printed page, leaving the original unaffected.

If you select the Manual Signature Layout style, you can place several pages on a single sheet of paper. Each of these pages can be sized and positioned individually.

To position the print job on the printed page

1. Choose File, Print Preview.

2. Using the Pick tool, click on the object you wish to print.

3. Type values in the following boxes:

- y — specifies the distance from the top of the printable area.

- x — specifies the distance from the left side of the printable area.

- You can also position each page of a print job by dragging the "X" in the center of the image to the desired position in the Print Preview window.

To automatically position the print job on the printed page

1. Choose File, Print.

2. Choose the Layout tab.

3. Enable the Reposition Images To button.

4. Choose one of the following from the pop-up menu beside the Reposition Images To button:

- Center Of Page

- Top Center

- Left Center

- Right Center

- Bottom Center

- Top Left Corner

- Top Right Corner

- Bottom Left Corner

- Bottom Right Corner

Using PostScript to optimize a print job

PostScript is a page description language used to send instructions to a PostScript printing device about how to print each page. All the elements in a print job (for example, curves and text) are represented by lines of PostScript code that the printing device uses to produce the document.

PostScript is not the only method for sending a printing device instructions, and some printing devices are not compatible with PostScript. However, there are several functions that are unavailable if you are not using the PostScript printing device language. For example, without PostScript, you cannot adjust color separations and halftone screens.

There are three levels of PostScript. PostScript 1, the first PostScript language, has certain limitations (see following). Using PostScript 2 greatly reduces potential printing errors. PostScript 3, the latest version of PostScript, is faster than the previous versions of PostScript. If you are using a PostScript 2 or PostScript 3 printing device, make sure that you enable the PostScript 2 or PostScript 3 options on the PostScript page in the Print dialog box.

Limitations of PostScript 1

Certain problems may arise when you use PostScript 1 that have been largely eliminated in PostScript 2 and PostScript 3.

- If a print job contains complex vector objects, then a PostScript 1 printing device may not be able to print it.

  To create vector curves, a PostScript device prints a series of short straight lines at varying angles. Each of these lines is considered a segment. Also, any straight line between two nodes is considered a segment. PostScript 1 devices cannot print vector graphics with more than 1500 segments. This limits the allowable number of nodes in any vector object to approximately 500.

- If you use a complex fill (for example, a texture fill, or a PostScript fill) in an object, the allowable number of nodes is reduced to approximately 300.

- If you fill a text object with a texture fill, then a PostScript 1 device may not print it.

- If you use a texture fill in an object with any subpaths (for example, a donut made from a circle within a circle), a PostScript 1 device cannot print it.

There are several ways to work around these limitations:

- Break complex graphics up into several less complex graphics. This may not be possible if you are using complicated line attributes or complex fills.

- Avoid using complex fills on graphics that are not large enough to warrant intricate detail.

- Avoid using complex fills with complex outlines and using complex fills in text.

- Limit the number of nodes per object.

- Use the PostScript features designed to reduce complexity and warn you of potential printing problems.

Using PostScript 2 or PostScript 3

PostScript 2 and PostScript 3 are more advanced PostScript languages. Using a PostScript 2 or PostScript 3 printing device can reduce printing errors and let you use features that are unavailable if you use a PostScript 1 printing device. If you try to use PostScript 2 or PostScript 3 options and you are not using a PostScript 2 or PostScript 3 device, then the print job will not print properly. If you are not certain whether you will be printing on a PostScript 2 or PostScript 3 device, do not enable these options.

PostScript 2 and PostScript 3 lets you use JPEG compression to compress the bitmaps in a print job to make the file size smaller. Also, PostScript 2 and PostScript 3 uses a faster method for rendering vector graphics.

To use PostScript 2 or PostScript 3

1. Choose File, Print.

2. Choose the PostScript tab.

3. Choose Level 2 or PostScript 3 from the Compatibility pop-up menu.

To compress bitmaps when printing to a file

1. Follow the steps in the previous procedure.

2. Enable the Use JPEG Compression check box.

3. Move the Quality Factor slider to the right to increase compression and reduce the quality of the bitmaps.

• You can access the Print dialog box from the Print Preview window by clicking the Options button on the Property Bar.

Printing color bitmaps in RGB

PostScript output normally uses the four-color, CMYK (cyan, magenta, yellow, and black) color model to print bitmaps. If you are printing color bitmaps to an RGB (red, green, and blue) or CMY (cyan, magenta, and yellow) printing device, enable the Output Color Bitmaps in RGB check box. RGB devices receive RGB values, instead of CMYK values. CMY printing devices have an easier time converting RGB to CMY (three-color model to three-color model) than converting CMYK to CMY (four-color model to three-color model).

To output color bitmaps in RGB

1. Choose File, Print.

2. Choose the PostScript tab.

3. Enable the Output Color Bitmaps In RGB check box.

• The Output Color Bitmaps in RGB option is available for PostScript devices only.

• You can access the Print Options dialog box from the Print Preview window by clicking the Options button on the Property Bar.

Fine-tuning a print job

If you encounter a problem printing fonts or bitmaps, the options explained in this section might help to fix the problem. If you are having trouble printing, try to determine what part of the print job is causing the problem. For example, the fonts may not be printing properly, or a bitmap may not print at all. Then, look for a topic that relates to that type of problem.

Printing color print jobs in black or grayscale

When you print color work on a black-and-white printing device, you can specify whether you want solid colors converted to solid black or to a shade of gray that approximates its hue.

To print color print jobs in black or grayscale

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. Enable one of the following options:

   • All Colors As Black

   • All Colors As Grayscale

Controlling color bitmap conversion to grayscale

By default, color bitmaps are reduced to grayscale if they are sent to a grayscale printing device. Transmission time is much faster this way, and the file size is smaller. If you choose to send bitmaps as color, the printing device

converts the bitmaps to grayscale, which results in slower transmission time and a larger file size.

To control bitmap conversion to grayscale

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. In the Special Settings section choose Grayscale Driver Bitmap Output from the Option list and, choose one of the following from the Setting list:

   • Send Color Bitmaps As Grayscale

   • Send Color Bitmaps As Color

• Controlling bitmap conversion to grayscale is available for PostScript devices only.

• If you want to print a document on a color printing device but you want to use a grayscale printing device driver, then choose Send Color Bitmaps As Color from the Miscellaneous tab, Special Settings, Setting list This is useful if you want to proof a document on a composite printing device using an imagesetter's printing device driver.

Commercial printing

If you plan on using commercial printing for your print jobs you will most likely deal with a service bureau and/or a printing shop. These two businesses can be separate or affiliated. Some larger establishments may offer both services under one roof. The service bureau will take your file and image it direct to film or direct to plates. The printing shop will use the film from a service bureau to make printing plates.

Film can be created using a camera or an imagesetter. Creating film with a camera usually requires camera-ready output that you've created on a PostScript laser printing device. Producing film this way may save you money, but do not try to produce complex color material using laser printed output, because desktop printing devices are not precise enough.

An imagesetter creates film directly from a file. There are several different types of files that a service bureau may be able to use. See "Preparing a print job for commercial printing" on page 501 for more information, and ask the service bureau about your options.

The service bureau should provide you with either overlay proofs, blueprints, or laminate proofs made from the film. The type of proof you require depends on the complexity of the print job. Once you are satisfied with the proofs, the film can then be imposed, the plates are burned and the printing plates can be then mounted on the press.

If the service bureau and printing shop are entirely separate, you must ensure that the service bureau provides the film in the form that the printing shop requires (that is, positive or negative film, emulsion up or down, etc.). Also, make sure that the printing shop has proofs of the final product and instructions about the print job (for example, number of copies, type and size of paper). These proofs and your instructions serve as a contract between you and the printing shop.

The press operators will set up and adjust the press so that the printed output matches the contract proofs as closely as possible. When color quality and accuracy are crucial, you may be asked to be present at printing time to approve any color adjustments that need to be made.

For an in depth discussion of commercial printing, see the Corel Commercial Printing Guide included with this Corel application.

Preparing a print job for commercial printing

When you prepare a print job for commercial printing, you can send camera-ready paper output or send the work on disk. If you are creating a file to send to an imagesetter or a platesetter, speak with the service bureau about the best file format and printing device settings to use.

If you are creating a file, the service bureau will need either a PostScript file or a native file from the application you are using. Always provide a final printout of the work to the service bureau, even if it's only a black-and-white representation. This will help them identify and assess any potential problems. You can use the Prepare For Service Bureau wizard to guide you through the process of sending a file to the service bureau.

Print to file

You can exercise full control over prepress settings and save the print job in a 'print to file' file (.PS file). This print file is sent directly to an output device by the service bureau.

The service bureau can often verify or fix a .PS file using a Raster Image Processor (RIP), or an Adobe Distiller depending on the software, however, be sure to review and confirm all settings with them to avoid unnecessary delays in your printing job.

Include a sheet with all the prepress settings that you have specified. You can create this sheet automatically by enabling the Print Job Information Sheet

check box from the Miscellaneous tab in the Print dialog box. Alternatively, you can check with the service bureau representatives; they usually have an order form that outlines all the essential prepress settings.

Native file format

If you prefer not to prepare .PS files, service bureaus equipped with the application in which you created your work can take the original files (for example, CorelDRAW files) and apply the required prepress settings. Some service bureaus may actually prefer to handle the prepress settings themselves. Because it is also important to include the fonts used in the original files, CorelDRAW uses TrueDoc, technology that allows you to include your fonts inside Corel applications before sending them to the service bureau.

Using a bleed to extend images to the edge of the page

Most printing presses are unable to print images to the edge of the paper. If you plan for certain areas of the print job to extend to the edge of the page, you need to print on paper that is larger than the size you ultimately want. This larger paper can then be trimmed so that the image extends to the paper's edge. When you use this method for printing to the edge of the page, it is wise to allow for a "bleed." A bleed is the amount that images extend past the edge of the final page size. By bleeding images, you allow for a margin of error during the printing and trimming process.

Printers' marks

Printers' marks provide information about how the work should be printed. You can place printers' marks in .PS file. The available printers' marks are crop marks, registration marks, color calibration bars, densitometer scales, page numbers, and file information. Printers' marks can be selected from the Prepress tab in the Print dialog box.

Printing to a file

Printing to a file is required when you want to send the .PS file to a service bureau to be printed on an imagesetter. Make sure you select the appropriate printing device driver when you print to file and consider the following:

- When you are preparing a file for printing on an imagesetter or a platesetter, the page size of the print job (that is, the size of the film or plate on which the document is imaged) must be larger than the page size of the document (that is, the size of the document) to allow for printers' marks.

- If you are printing to a PostScript 2 or PostScript 3 printing device, you can make the print job smaller by using JPEG compression to compress bitmaps.

- The service bureau may require that the .PS file conforms to the Document Structuring Convention (DSC). If this is the case, you must enable the Conform To DSC option in the PostScript tab in the Print dialog box.

If you are unsure about which settings to choose, consult the service bureau.

To print to file

1. Choose File, Print.

2. Click the Printer button.

3. Choose File in the Destination pop-up menu.

4. Click the Save or OK button.

5. In the Print to File dialog box, choose a disk and folder

6. Type a filename in the File Name box.

7. Click the Save button.

   The print to file extension (.PS) is appended to the filename.

To compress bitmaps in a .PS file

1. Choose File, Print.

2. Choose the PostScript tab.

3. Choose Level 2 or PostScript 3 from the Compatibility pop-up menu.

4. Enable the Use JPEG Compression check box.

5. Move the Quality Factor slider to the right to increase compression and reduce the quality of the bitmaps.

To conform to DSC

- Follow steps 1 to 3 from the previous procedure. Enable the Conform To DSC check box.

Printing negative film

An imagesetter produces images on film that may need to be produced as negatives depending on which printing device you are using. Consult the service bureau or printing shop to determine whether you can produce images on film. You can set up the print job to produce negative images, but if

the service bureau's equipment also produces negatives, the result is positive film.

To print a negative

1. Choose File, Print Preview.
2. Click the *Invert button*.

   Do not choose negative film if you are printing to a desktop printing device.

Printing film with the emulsion down

Emulsion is the coating of light-sensitive material on a piece of film. Normally, print jobs printed to a laser printing device are printed with the emulsion up. Other types of reproduction may call for either emulsion up or down.

To print film with the emulsion down

1. Choose File, Print Preview.
2. Click the *Mirror button*.

Setting a bleed limit

When you use a bleed to extend the print job to the edge of the page, you must set a bleed limit. A bleed limit is the extent to which an image can extend beyond the crop marks. Usually, a bleed limit of .125 to .25 inches is sufficient. Any object extending beyond that uses memory needlessly and may cause problems when you print multiple pages with bleeds on a single sheet of paper.

Remember, a bleed requires that the paper you are printing on be larger than the size of paper you ultimately want, and the print job must extend beyond the edge of the final paper size.

Consult the service bureau or printing shop to determine the appropriate bleed limit for the print job.

To set a bleed limit

1. Choose File, Print.
2. Choose the Layout tab.
3. Enable the Bleed Limit check box.
4. Type a bleed limit in the Bleed Limit box.

Printing crop marks and registration marks

Crop marks are printed at the corners of the page and represent the size of the paper. Crop marks can be used as guides for trimming the paper.

If you are printing multiple pages per sheet (for example, two rows by two columns) you can enable the Exterior Crop Marks Only Option if you want the crop marks to print on the outside edge of the page. Enabling this feature will ensure that all crop marks are removed after the cropping process. If you disable this option, crop marks will be placed around each row and column.

Registration marks print on each sheet of a color separation. Registration marks are required to line up the film for proofing the printing plates on a color press. (See "Creating color separations" on page 510.) You can select from several different registration mark styles.

To see crop marks and registration marks, the paper you are printing on is larger by 0.5 inches on all sides, than the page size of the document you are printing.

To print crop marks

1. Choose File, Print.

2. Choose the Prepress tab.

3. Enable the Print Crop Marks check box.

To print exterior crop marks only

1. Follow steps 1 to 3 from the previous procedure.

2. Enable the Exterior Crop Marks Only check box.

To print registration marks

1. Follow steps 1 to 2 from the "To print crop marks" procedure.

2. Enable the Print Registration Marks check box.

3. Choose a registration mark style from the Style pop-up menu.

Printing color calibration bars and densitometer scales

Color calibration bars are color scales that print on each sheet of a color separation. Calibration bars are required to ensure accurate color reproduction. (See "Creating color separations" on page 510.) To see calibration bars, the page size of the print job must be larger than the page size of the work you are printing.

A densitometer scale is a series of gray boxes ranging from light to dark. These boxes are required to test the density of halftone images. (See "Working with bitmaps and halftone screens" on page 508.) You can position the densitometer scale anywhere on the page. You can also customize the levels of gray that appear in each of the seven squares on the densitometer scale.

To print color calibration bars

1. Choose File, Print.

2. Choose the Prepress tab.

3. Enable the Color Calibration Bar check box.

To print a densitometer scale

1. Follow steps 1 to 2 from the previous procedure

2. Enable the Densitometer scales check box.

3. If you want to customize the levels of gray in one of the densitometer scale squares, click the appropriate number in the Densities list (the top of the list is the lightest box) and type a new density for that square.

To position a densitometer scale

1. Choose File, Print Preview.

2. Drag the densitometer scale to its new position.

   In most circumstances it is best to position the densitometer scale outside the final printed area.

Printing page numbers and file information

Page numbers are useful when collating material that does not include page numbers in the document or when the page numbers in the document do not correspond to the actual number of pages.

File information includes the color profile you used, the halftone settings, the name of the file, the date and time the work was created, and the plate name and number (which is useful when printing color separations). When you enable the Print File Information option, you can specify a job name (also called a slug line) that will be included with the file information.

To see page numbers and file information, the paper on which you are printing must be larger than the page size of the document you are printing. However, you can print file information inside the document's page by enabling the Position Within Page option.

To print page numbers

1. Choose File, Print.

2. Choose the Prepress tab.

3. Enable the Print Page Numbers check box.

To print a file information

1. Choose File, Print.

2. Choose the Prepress tab.

3. Enable the Print File Information check box.

- • You can enable the Position Within Page check box if you want the file information to appear on the document's page.

- • You can type a job name in the Job Name/Slug Line if you want the Job Name/Slug Line to be different than the saved name of the graphic.

Positioning printers' marks

You can change the position of all the printers' marks by changing the position of the Marks Alignment Rectangle in the Print Preview window.

To change the position of printers' marks

1. Choose File, Print Preview.

2. Choose the *Marks Placement tool*.

3. Type values in the Marks Alignment Rectangle on the Property Bar.

- • You can also change the position of printers' marks by dragging the bounding box in the Print Preview window.

Printing a job information sheet

Including a job information sheet which specifies the print job will help the service bureau or print shop to deal more effectively with any problems that arise with the print job.

To print a job information sheet with the print job

1. Choose File, Print.

2. Choose the Miscellaneous tab.

3. Enable the Print Job Information Sheet check box.

4. Click the Information Settings button and specify the categories of information that are to be included and whether the job information is to be saved to a file, printed, or both.

Working with bitmaps and halftone screens

If the document you are sending to the service bureau or print shop contains bitmaps (for example, scanned images or photographs), you will need to set up halftone screens for the bitmaps.

Halftones

Commercial printing presses cannot produce true shading but can create the illusion of shading by printing images made up of tiny dots. In conventional screening, the size of the dots determines the different levels of shading (that is, the bigger the dots, the darker the shade). In Stochastic screening, it is the frequency of the dots that determines the different levels of shading (the more dots in an area, the darker is the shade). A halftone screen is necessary to convert images with true shading to images made up of tiny dots.

Originally, a halftone screen was an opaque screen with thousands of tiny holes. An image with shading was photographed through this screen using special photographic paper or film. The resulting image consisted entirely of dots. This image was then used to create printing plates.

Now, however, you can create halftone images without using screens or cameras. To ensure that the bitmaps print correctly, you must set the halftone screen frequency and bitmap resolution correctly.

The image on the left shows a close-up of a bitmap. The image on the right shows a close-up of a halftone.

Halftone screen frequency

The halftone screen frequency determines the number of dots used to create the image. The screen frequency is measured in lines per inch (lpi). This measurement refers to the number of rows of dots per inch.

When you choose a screen frequency, remember that the higher the screen frequency, the sharper the image. However, there are limits to screen frequency that are determined by the type of printing press on which you are printing and the type of paper you are using. In general, a screen frequency of 85 lpi works on newsprint, and a frequency of 133 lpi works on bond and glossy paper. If possible, consult the service bureau or printing shop to find out the screen frequency you should use.

Bitmap resolution

When you create a halftone image, the bitmaps resolution, measured in dots per inch (dpi), should be no more than twice the halftone screen frequency. For example, if you use a 150 lpi screen, the bitmap should have a resolution of at least 300 dpi. A longer file size will result in longer files, slower print jobs, and lack of improvement in bitmap quality.

Setting the halftone screen frequency

If you are printing halftone images, the default settings should be used after selecting the proper printing device. There are cases when you may need to set the screen frequency properly. Consult the service bureau to determine the appropriate screen settings.

To set the screen frequency

1. Choose File, Print.

2. Choose the PostScript tab.

3. Choose a value (in lines per inch) from the Screen Frequency pop-up menu.

   Consult the service bureau for the optimum setting for the job.

- When the screen frequency is set to Default, the image is printed using the default screen frequency of the output device.

- The screen frequency setting is available for PostScript devices only.

Using Open Prepress Interface

Corel offers Open Prepress Interface (OPI) support. OPI is a way for you to include high-resolution scanned images in the work without dramatically increasing the file size. To accomplish this, the service bureau scans the images on a high-end scanner. They keep the high-resolution version of the scans and give you low-resolution equivalents. You import the low-resolution images into the document, using them for position only (FPO). Working with FPO images keeps the document size smaller and speeds up screen redrawing time. When you send the print job back to the service bureau for final imaging to film, the high resolution images are automatically substituted.

- You must import FPO images correctly or they will not be replaced at print time.

- You can only scale, crop, rotate mirror and clip FPO images. You cannot apply any other effects.

Creating color separations

If you send color work to a service bureau or printing shop, either you or the service bureau will need to create color separations.

Color separations are necessary because a typical printing press applies only one color of ink to a sheet of paper at a time. A color separation is created by first isolating each color element in a print job. Each color element is then used to create a sheet of film or plate. Each sheet of film or plate represents one color of ink applied to the sheet of paper.

Printing presses produce color using either process color or spot colors. The number of colors you plan to use will be the main factor in deciding which method to use.

Process color

If the project requires full color (for example, it contains scans of color photographs), then you need to use process color. Process color (known as CMYK) is a method of producing virtually any color using only four ink colors: cyan, magenta, yellow, and black. The final colors are produced by mixing percentages of these four inks. Process color only requires four color separations.

An example of process color separations

Corel now supports Pantone Hexachrome, a new type of printing process that increases the range of printable colors. Pantone Hexachrome color uses six different ink colors (cyan, magenta, yellow, black, orange, and green) to produce full color. To use Pantone Hexachrome color effectively, use the Pantone Hexachrome color palette. Pantone Hexachrome color is sometimes called high-fidelity color. Talk to the service bureau about whether you should use Pantone Hexachrome color.

Spot color

If the project makes use of only one, two, or three colors (including black) then you'll probably use spot colors, such as those offered by PANTONE. Spot colors use a different ink for each color, and each color requires its own color separation. If your budget is limited, consider

- obtaining a two-color look by printing on colored paper and using only one spot color

- using tints (percentages) of spot colors to create shadows or highlights, thus giving the impression of a broader color range

Both process and spot color

Some projects require both process and spot colors. For example, a marketing brochure may require the use of a spot color to faithfully render the corporate color and the use of process color to reproduce scans of photographs. Remember, though, that each additional spot color requires extra film, plates, ink — and a five or six color printing press adding to the cost of printing.

Consistency of color when printing

Corel uses ICC (International Color Consortium) profiles to convert RGB colors to CMYK colors. ICC profiles provide Corel applications with the information to convert, display, and print colors accurately. Specifically, ICC profiles provide information on color capabilities and characteristics of your computer systems' components (scanner, monitor, and printing device) to maintain consistency and accuracy when printing.

A word about palettes

You can work on different elements of the document from different palettes and different color models. Ultimately, however, all colors must be printed with process and spot color inks. Colors defined in the RGB or HSB models are translated automatically into CMYK (process) when printing values. As for spot colors, you can convert them to CMYK at printing time. For more information, see "Working with color" on page 317.

- Pay close attention to the number of colors used, especially if you are importing clipart. Make sure you only use the colors available in the method you have chosen (that is, process color or spot color).

Printing color separations

When printing color separations to file, you can create a .PS file that includes all separations, one separation only, or any combination of separations, depending on the complexity of the print job.

Generally, you should be able to save all the color separation information in one .PS file. However, if the print job contains special effects and several color separations (for example, CMYK and a number of spot colors), saving all color-separation information in one .PS file might result in an unacceptably large file. In this case, create a .PS file for each separation. Include the separation name in the filename for easier file identification.

When printing color separations, you can produce a sheet of paper, film, or plate even when there is nothing on it (for example, there may be only yellow and black on a page, but the cyan and magenta plates will be printed anyway). Normally, you would leave this option disabled to avoid wasting costly film. However, there may be instances when you want to force plates that are blank to print.

To print color separations

1. Choose File, Print.

2. Choose the Separations tab.

3. Enable the Print Separations check box.

To print color separations from the Print Preview window

1. Choose File, Print Preview.

2. Enable the Enable Color Separations button from the Property bar.

To use Hexachrome process color

1. Follow steps 1 to 3 in the "To print color separations" procedure.

2. Enable the Hexachrome Plates check box.

To select specific color separations

1. Follow steps 1 to 3 from the "To print color separations" procedure.

2. Enable the check boxes for the color separations to be printed from the Color Separations list at the bottom of the dialog box.

- To print separations in color, enable the Print Separations In Color check box.

- If you are printing on a device that uses high solid ink density, then enable the High Solid Ink Density check box, however, this option works only when using the Hexachrome color palette. Consult the service bureau to determine whether you need to enable this option.

Converting spot colors to process colors

If a document contains spot colors but you want to print using process color, you can convert the spot colors to process colors. If you do not convert the colors, each spot color is printed on a different color separation. Changing the spot colors to process colors when you print does not affect the document itself, only the way it is printed.

FOCOLTONE, TOYO, and DIC colors are now treated as spot colors by default. You can treat any of these color palettes as process colors if you prefer.

To convert spot colors to process colors

1. Choose File, Print.

2. Choose the Separations tab.

3. Enable the Print Separations check box.

4. Enable the Convert Spot Colors To CMYK check box.

To treat FOCOLTONE, TOYO, and DIC colors as process colors

1. Choose Edit, Preferences.

2. In the Global category, choose Color Management, General.

3. Disable any of the following check boxes:

   - Treat FOCOLTONE Colors As Spot Inks

   - Treat TOYO Colors As Spot Inks

   - Treat DIC Colors As Spot Inks

Ensuring predictable color when printing

Accurate and consistent color rendition from device to device is essential when printing in color. All components of a computer system (scanner, monitor, and printing device) must exchange color information in a manner that ensures a predictable result.

For the colors on the screen to approximate the colors on the printed page as closely as possible, enable the color correction options. For more information, see "Working with color" on page 317.

To simulate the color output of a printing press on a composite printing device

1. Choose Edit, Preferences.

2. Choose Global, Color Management, General.

3. Enable the Composite printer simulates color output of separations printer check box.

Printing color halftones

If you are printing process color halftones, you need to use a halftone screen for each different color separation. See "Working with bitmaps and halftone screens" on page 508 for more information.

Screen angle

Because each halftone screen consists of a regular pattern of shapes, it creates a pattern on the printed image. When the separations are combined, the patterns created by each separate halftone screen interact. This interaction can create an undesirable effect, called a moiré pattern.

In most cases moiré patterns can be avoided by using the default settings. However, Pantone colors and duotones, made up of spot colors and combined with other inks may cause printing problems. Refer to your service bureau for further consultation.

Keep in mind that when you print color separations, the screen angles are set automatically. If you change these settings incorrectly, the print job might not print properly.

Screen technology

When setting up advanced separations settings, in most instances the default settings should be used. However, if you are using an Imagesetter, the screen technology should be set to match the type of imagesetter the service bureau will be using. Talk to the service bureau to determine the correct setting.

Halftone type

The halftone type refers to the type of dot that is being used to create the halftone. Typically, a halftone screen consists of rows of evenly spaced round or diamond-shaped dots. However, it is possible to use halftone screens that have dots that are shaped differently. In fact, halftone screens can even use straight lines instead of dots to create an image. You can experiment with different halftone types to create interesting effects.

Customizing a halftone screen

The default settings should be used when setting the halftone screens to print color separations. Otherwise, screens can be improperly set and result in undesirable moiré patterns and poor color reproduction. Consult the service bureau before you change any of these settings.

To customize a halftone screen

1. Choose File, Print.

2. Choose the Separations tab.

3. Enable the Print Separations check box.

4. Enable the Use Advanced Settings check box.

5. Click the Advanced button.

6. From the pop-up menus change any of the following settings:

   • Screening technology

   • printing device or imagesetter resolution

- Halftone type (for example, Line or Diamond)
- the screen frequency and angle of any or all of the color separations.

- You can set the screen frequency, screen angle, and overprint options for spot colors as well as process colors. For example, if you have a fountain fill made up of two spot colors, you can now set one to print at 45 degrees and the other at 90 degrees.

IMPORTING AND EXPORTING 16

Importing and exporting are ways of exchanging information between applications. You can import and export information using the Import and Export commands or by cutting, pasting, or dragging information between files. The Import menu lets you import files in formats that are not native to the application in to which you're importing the file. The Export command lets you save files in nonnative file formats that can be used by other applications.

When you import or export a file it is converted by a filter. Import and export filters are small programs that do the conversions. You must have the appropriate import or export filter installed on your computer for each file format you wish to import or export to.

Importing and opening files

You can open bitmap and vector files in Corel PHOTO-PAINT whether they are native Corel PHOTO-PAINT files or nonnative file. However, to open files in nonnative formats you have to have the appropriate import filter installed. Import filters are programs that convert files into the native format of the application in which you're opening the file. When you open a file of a certain format in Corel PHOTO-PAINT, you select the import filter matching that file format. When you open vector files they are converted to bitmaps. When you open bitmaps, Corel PHOTO-PAINT gives you a number of options. You can

- Apply a color profile — specify a color profile to use for color correction

- Resample the image — reduce the number of pixels, eliminate unusable detail, and reduce the file size

- Crop the image — select the exact area and size of the image you want to keep

- Check for Watermarks — be alerted when an image is encoded with a Digimarc watermark, which indicates that there is a copyright claim on the file

- Suppress filter dialogs — bypass the dialog box that contains import options for the selected filter (also available with vector files)

- Open a low resolution copy of an image — make changes to the low-resolution image, then render the changes to a copy of the original image.

File formats

Data in a file can be stored using several systems. The system that any one file uses is known as its file format. Some common formats are BMP, TIFF, Encapsulated PostScript, and JPEG.

Native file formats

When you save a file in a graphics application, the file is saved in the native file format — or the proprietary format created specifically for the application. Most native file formats are simply referred to using the application name, e.g., Corel PHOTO-PAINT files or Adobe Illustrator files.

Bitmap files and color depth

Bitmap files have different color depths. Color depth (also called bit depth) refers to the number of colors that can be supported in a file. To determine the number of color values a given bit depth can produce, calculate 2 raised to the power of the bit depth. For example, an 8-bit depth produces 2 to the power of 8, or 256, colors. An 8-bit grayscale image is has 256 increments between black and white. Files that support a higher color depth are larger.

When you save or export a file, you can often specify the image's color depth. If you have only a few colors in your original image, saving to a higher color depth (e.g., 16-color to 256-color) should produce an image whose colors are very similar to the original image. However, if your original image has many colors and you convert it to a lower color depth (e.g., 16-million colors to 256-color), the application gives you some options for creating a palette of colors. The application dithers the palette colors in the exported image to approximate the range of colors in the original image.

Different applications support different color depths. As well, some file formats support only certain numbers of colors. When choosing a file format

to use when saving a file, you should consider any color limitations of the file format and the application you'll be using with the file. For example, the GIF file format, used commonly for Internet graphics, only supports up to 256 colors. The native Corel file formats support all color depths.

Working with plug-ins

Corel PHOTO-PAINT supports the Adobe Plug-in standard. Plug-ins let you import images from scanners, digital cameras, and other devices. Use the Import menu to access your plug-in interface. Store your plug-ins in the PLUG-INS folder to make them available in the Import menu.

- A file format that supports a large number of colors may not necessarily support all color depths that are below its maximum bit depth. For example, a format may support 24-bit color but not black and white.

Opening images in nonnative file formats

Corel PHOTO-PAINT lets you open bitmap and vector files in various formats. You have several options when opening bitmaps. You can apply a color profile to the image, open a low-resolution copy of the image or detect encoded watermarks. When opening any file, you can choose whether to suppress filter dialogs.

You can also open files acquired from external devices, like scanners and digital cameras, directly into Corel PHOTO-PAINT.

To apply a color profile

1. Choose File, Open.

2. Locate the folder in which the bitmap you want to import is stored.

3. Choose a bitmap format from the Format pop-up menu.

4. Choose a filename.

5. Enable the Apply Selected Profile check box.

6. Choose a color profile from the pop-up menu.

7. Click Open.

- To make profiles available in the pop-up menu, store them in the COLORSYNC PROFILES.

To open a low resolution copy of an image

1. Choose File, Low Res, Open.

2. Locate the folder in which the high-resolution image is stored.

3. Choose a bitmap filter from the Format pop-up menu.

4. Choose a filename.

5. Click Open.

6. Do one of the following:

   • Type values in the Width and Height boxes.

   • Type the percentage by which you want to downsample the image in the Percentage boxes.

   • Choose a new unit of measurement in the Units pop-up menu.

7. In the Resolution section, type values in the Horizontal and Vertical boxes to alter the resolution of the imported image.

To render changes to an image

1. Choose File, Low Res, Render.

2. Do one of the following:

   • Type values in the Width and Height boxes.

   • Type the percentage by which you want to downsample the image in the Percentage boxes.

   • Choose a new unit of measurement in the Units pop-up menu.

To detect watermarks when opening a file

1. Choose File, Open.

2. Locate the folder in which the file is stored.

3. Choose a bitmap filter from the Format pop-up menu.

4. Choose a filename.

5. Enable the Check For Watermark button.

6. Click Open.

• You can also check for watermarks when you export an image using the Detect Watermark option.

To suppress filter dialogs when opening a file

1. Choose File, Open.

2. Locate the folder in which the file is stored.

3. Choose a bitmap filter from the Format pop-up menu.

4. Choose a filename.

5. Enable the Suppress Filter Dialog button.

6. Click Open.

To open an image acquired from an external device

1. Choose File, Import.

2. Choose a plug-in from the list.

- Store your plug-ins in the PLUG-INS folders to make them available in the Import menu.

- You can only remove information from images when cropping and resampling. You cannot add to an image, i.e., you cannot increase the image's width, height, or resolution.

- If you are opening a TIFF file with an embedded color profile, you will get a message asking you if you want to use the embedded profile.

- When resampling an image, enable the Maintain Aspect Ratio check box to maintain the original ratio of height to width, or enable the Identical Values check box to keep the Horizontal and Vertical resolution values the same.

- When resampling or cropping an image, you can choose a different unit of measurement from the Units box.

Altering images when opening

Corel PHOTO-PAINT lets you resample or crop images before you open them.

To resample an image before opening it

1. Choose File, Open.

2. Locate the folder in which the image is stored.

3. Choose a bitmap filter from the Format pop-up menu.

4. Choose a filename.

5. Choose Resample from the pop-up menu that appears beside the Format pop-up menu.

6. Click Open.

7. Do any of the following:

   - Type values in the Width and Height boxes.

   - Type the percentage by which you want to downsample the image in the percentage boxes.

   - Choose a new unit of measurement in the Units pop-up menu.

8. In the Resolution section, type values in the Horizontal and Vertical boxes to alter the resolution of the imported image.

To crop an image before opening it

1. Choose File, Open.

2. Locate the folder in which the image is stored.

3. Choose a bitmap filter from the Format pop-up menu.

4. Choose a filename.

5. Choose Crop from the pop-up menu that appears beside the Format pop-up menu.

6. Click Open.

7. Do any of the following:

   - Type a value in the Top box to specify the number of pixels (or the unit of measurement displayed in the Units box) that you want to remove from the top of the image. Then type a value in the Left box to specify the number of pixels you want to remove from the left edge of the image.

   - Type a value in the Width box to specify the width of the area of the image you want to keep, and type a value in the Height box to specify the height of the area you want to keep. Drag the selection box in the Preview window to move or resize the selection area.

   - Drag the sizing box to the position and size you want.

   - Choose a new unit of measurement in the Units pop-up menu.

Exporting and saving files

If you want to save a file in a nonnative format, you must use the Export To File or Save As command to convert it to that file format.

Using the Save As and Export commands in Corel PHOTO-PAINT

When you use the Save As command, a dialog box appears that contains filters that support all of the features in the image. For example, if your image contains a mask, only filters that support masks are available. The Export To File command lets you access all of the export filters. Note that all of the image's characteristics may not be maintained in all of the file formats in the Export dialog box.

When you choose either the Export To File or Save As command, a dialog box opens in which you can choose the folder where you want to save or export the file. You can type in a name for your file and choose a filter from the Format pop-up menu.

Exporting images in nonnative file formats

When you export your image to another file format, you can open it directly in a destination application that supports that file format.

To export a file

1. Open the file you want to export.

2. Choose File, Export, Export To File.

3. Locate the folder in which you want to store the exported file.

4. Choose an export format from the Format pop-up menu.

5. Type a filename.

6. Click Export.

7. In the dialog box for the export format, choose the export options you want.

- You can also export a masked area of an image by applying a mask and following the above procedure.

Saving files in nonnative file formats

You can save files to other bitmap formats.

To save an image in a nonnative file format

1. Choose File, Save As.

2. Locate the folder in which you want to save the file.

3. Choose a format from the Format pop-up menu.

4. Type a filename.

5. Click Save.

6. In the dialog box for the export format, choose the export options you want.

Copying, pasting and dragging

You can exchange objects between documents by copying and pasting, or dragging, the objects from one document to another. Corel PHOTO-PAINT gives you several options when copying objects. You can copy an active object or a masked selection on the active layer, to the Clipboard. You can also copy all objects within a masked area to the Clipboard, regardless of what layer the objects are on. And you can save or copy the selected area to a file.

You can paste objects from the Clipboard, or you can paste the contents of an existing file into the active document. You have four options when you paste objects from the Clipboard. You can paste the objects as a new selection, an object, or a document, or you can paste them into the current selection. The objects are pasted as one new object and are enclosed by an object marquee unless you choose to have the objects pasted as a masked selection. For more information about pasting options, see the following: "Creating an object from a selection" on page 118, "Using the Clipboard to select areas on an image" on page 82, "Pasting data into an existing selection" on page 82.

Exchanging information using copy and paste

You can exchange selected objects or masked areas between documents by cutting and pasting or by dragging the objects from one open document to another.

To copy and paste an active object or masked selection

1. In the Corel PHOTO-PAINT source file, choose an object or apply a mask to part of the active object.

2. Choose Edit, Copy.

3. Open the destination file.

4. Choose Edit, Paste.

• If there is no defined area, the entire image is copied.

• To copy a masked image on the background, choose Window, Palettes, Objects and click the Background layer on the Objects Palette before choosing Edit, Copy.

To copy and paste all objects within a masked selection

1. In the Corel PHOTO-PAINT source file, apply a mask to the image.

2. Choose Edit, Copy Visible.

3. Open the destination file.

4. Choose Edit, Paste.

To copy objects to a new file

1. In the Corel PHOTO-PAINT source file, choose an object or apply a mask to part of the active object.

2. Choose Edit, Copy To File.

3. Choose the folder in which you want to save the file.

4. Choose a format from the Format pop-up menu.

5. Type a filename.

6. Click Save.

To paste a file into the active Corel PHOTO-PAINT document

1. Choose Edit, Paste From File

2. Locate the folder in which the file is stored.

3. Choose a file format from the Format pop-up menu.

4. Choose a filename.

5. Click Open.

• You can move objects by using the Cut command instead of the Copy command.

Exchanging information by dragging

You can copy or move objects between documents by dragging the objects from one document to another.

To copy objects by dragging

1. Open the source file and the destination file, and position them so both windows are visible.

2. In the source file, select the objects you want to copy.

3. Hold down Option and drag the objects to the destination file.

• To move objects, do not hold down Option when dragging.

• If you want to copy an image for later use, you can drag the image to the desktop to create a picture clipping. A picture clipping is a file that you can drag into other applications when you want.

MOVING FROM ADOBE®
PHOTOSHOP® TO COREL
PHOTO-PAINT
. . . .

Welcome to Corel PHOTO-PAINT, a sophisticated bitmap editing and
painting application. If you have experience with Adobe® Photoshop®, you
can easily learn the features of Corel PHOTO-PAINT. Whether you use Corel
PHOTO-PAINT as your primary image-editing application or as one
component among many applications, you can benefit from its time-saving
features and enhancements.

Adobe Photoshop 4.0 and Corel PHOTO-PAINT 8 share many similarities,
which makes it easy to move from one application to the other. Both are
bitmap editing applications and share most basic painting and retouching
capabilities. The basic layouts and menu options are also similar. Because of
these similarities, you can use Adobe Photoshop to do part of your work and
then easily import files into Corel PHOTO-PAINT to make use of unique
Corel PHOTO-PAINT features.

Despite the similarities, however, Adobe Photoshop and Corel
PHOTO-PAINT are distinguished by some differences in terminology, tools,
and technology. Understanding these differences lets you make a quick and
easy transition from Adobe Photoshop to Corel PHOTO-PAINT.

Comparing terms and concepts

Many Adobe Photoshop and Corel PHOTO-PAINT features are comparable,
but Corel PHOTO-PAINT occasionally describes these features using

different terminology. Corel PHOTO-PAINT also introduces new terms for its unique features. You can operate smoothly between Adobe Photoshop and Corel PHOTO-PAINT by previewing their distinctive terms and concepts.

Comparing tools

Although Adobe Photoshop tools are similar to Corel PHOTO-PAINT tools, there are some differences. A comparison of the tools identifies these differences and helps you begin exploring what Corel PHOTO-PAINT has to offer.

Comparing print technologies

Adobe Photoshop and Corel PHOTO-PAINT support different printing technologies. Understanding these differences helps you generate higher quality output for your graphic designs.

Comparing terms and concepts

The terms and concepts in Adobe Photoshop and Corel PHOTO-PAINT differ for some features. In some cases, features may be similar in both applications, but they are described using different terminology. In other cases, Corel PHOTO-PAINT 8 introduces new terms and concepts that have no equivalent in Adobe Photoshop 4.0.

Similar features with different terminology

The following Adobe Photoshop terms have some differences in naming and functionality in Corel PHOTO-PAINT:

- Actions
- Adjustment layers
- Alpha channels
- Blend modes
- Color channels
- File formats
- Filter menu
- Layer masks
- Layers
- Layer options
- Low-resolution editing

- Mask channels
- Navigator Palette
- Object transformations
- Palettes
- Plug-in support
- Selections
- Swatches

Corel PHOTO-PAINT terms

Corel PHOTO-PAINT also introduces the following terms and concepts:

- Animation and movie editing
- Internet support
- Property Bar
- Toolbars
- Undoing a series of operations
- Workspaces

Actions

In Adobe Photoshop, you can group a series of commands into a single command (an action) to reproduce frequently used procedures. Although Corel PHOTO-PAINT does not support actions, it does let you record and playback most application commands.

In Corel PHOTO-PAINT, recordings and scripts automate a series of commands that you want to repeat on the same image or on several different images. A recording is a series of commands that you can record as you work. Recordings are lost when you end your current session unless you save them as a script. A script is a recording that has been saved and that can be retrieved at any time. Both recordings and scripts are created, edited, and played back using the playback controls and commands on the Recorder Palette.

In Corel PHOTO-PAINT, scripts are recorded and saved in AppleScript. AppleScript is a language created by Apple Computer and used by the Mac OS to automate tasks in scriptable applications, such as Corel PHOTO-PAINT.

For more information about recordings and scripts, see "Creating recordings and scripts" on page 457.

Adjustment layers

Adjustment layers in Adobe Photoshop are called lenses in Corel PHOTO-PAINT. Lenses are objects that let you view the effects, corrections, or adjustments that you want to make to your image before you apply them to the image pixels. This means that you can make adjustments to the lens and view the results without actually applying the modification to the image. The pixels in the image are not changed by the lens; they only look different because you are seeing them through the lens. When you are satisfied with what you see on screen, you can merge a lens with the image to make the changes permanent. You can create several different lens types and apply them in succession to a specific image area by changing their position and order on the Objects Palette (called the Layers palette in Adobe Photoshop).

Corel PHOTO-PAINT includes many lenses that are not available in Adobe Photoshop. Corel PHOTO-PAINT also shares many of the same lenses as Adobe Photoshop, although some of these lenses do not necessarily create the exact same effect in both applications.

For more information about lenses, see "Working with lenses" on page 265.

Alpha channels

See "Mask channels" on page 534.

Animation and movie editing

In Corel PHOTO-PAINT, you can create and edit movies and animation to add the illusion of movement to your images.

A movie contains a series of images, called frames. You can change the background and objects from one frame to another; when the frames are run in rapid succession, the image appears to move. You can insert new frames, create duplicate frames, and insert frames from another movie. For more information about making and editing movies, see "Making and editing movies" on page 433.

In Corel PHOTO-PAINT, you can also use the movie commands to load an existing animation or to create an animation. An animation contains one file with multiple frames. Each frame contains a different image; showing the frames one after the other in rapid sequence simulates motion. You can use these animation files to add richness and give a professional appearance to your Web site or multimedia projects. For more information about creating animations, see "Making and editing movies" on page 433. For more information about using animations for Web sites, see "Publishing images to the Internet" on page 447.

Blend modes

Blend modes in Adobe Photoshop are called merge modes (or paint modes) in Corel PHOTO-PAINT. You can use the merge modes to combine a source color with a base color to produce a result color. The source color is the current paint color (the color you are applying to your image using a paint tool or effect). The base color is the color displayed on the original image (the color you are altering in some way). The result color is the color that is produced after the color merge.

Although most blend modes and merge modes are similar in the two applications, Adobe Photoshop and Corel PHOTO-PAINT also provide their own modes. For example, the Dissolve and Exclusion blend modes in Adobe Photoshop are not supported in Corel PHOTO-PAINT. Similarly, the Logical AND, Logical OR, and Logical XOR modes in Corel PHOTO-PAINT are not supported in Adobe Photoshop.

In Adobe Photoshop, you can create blends between the active layer and the underlying layers; you can also create partial blends between these layers by defining a range of color values for the pixels in the blend. Corel PHOTO-PAINT does not support active-layer/underlying layer blends or blend ranges; when Adobe Photoshop files containing blend ranges are imported into Corel PHOTO-PAINT, the ranges are ignored.

For more information about merge modes, see "Choosing a merge mode" on page 132.

Color channels

In both Adobe Photoshop and Corel PHOTO-PAINT, channels are used to store information about the color elements in the image. A color channel is a type of channel that represents one component of an image's color model. Individual channels include information about how much of each component is used in each image pixel to produce the colors of the image.

The number of color channels in an image depends on the color model associated with the image. For example, an RGB image has three separate color channels: red (R), green (G), and blue (B). The R, G, and B color channels store information about how much red, green, or blue is used in each pixel to produce the image's colors.

In both Adobe Photoshop and Corel PHOTO-PAINT, you can create new channels using the Channels Palette. In Adobe Photoshop, you can set the following attributes for a new channel: name, color, opacity, and whether the color indicates masked areas or selected areas. For a new channel in Corel PHOTO-PAINT, the Channels Palette lets you set the name, color, and opacity, as well as the invert overlay capability and the fill color. Channel settings are automatically reset to their default values when you import or export files between Adobe Photoshop and Corel PHOTO-PAINT.

For more information about color channels, see "Working with color channels" on page 357.

File formats

You can transfer files between Adobe Photoshop and Corel PHOTO-PAINT using file format filters. These filters are translators that let you open files in different applications.

If you want to save a Corel PHOTO-PAINT file in the Adobe Photoshop file format, you can export the file or use the Save As command. The Format pop-up menu in the Export and Save As dialog boxes lists the available file formats to which you can export or save the file. Corel PHOTO-PAINT has been designed to be interoperable with Adobe Photoshop.

For more information about file format filters, see "Opening files" on page 517.

Filter menu

The Filter menu in Adobe Photoshop is called the Effects menu in Corel PHOTO-PAINT. Both of these menus contain special effects that you can apply to images. In Corel PHOTO-PAINT, effects are organized according to the types of tasks you perform.

Effects filters execute a predefined series of commands to produce a specific effect. They automatically calculate the values and characteristics of every pixel in your image and then alter the pixels according to these new values. For example, if you apply the Motion Blur filter to an image, the filter analyzes all pixel values and "smears" the values in a specified direction, creating the illusion of motion.

There are two ways to preview special effects in Corel PHOTO-PAINT: on screen or in a dialog box. After you choose a special effect from the Effects menu, the effect's dialog box, which contains several toggle buttons, opens. With these buttons, you can choose to preview the effect in the Image Window, or you can choose to preview the effect within the dialog box, either in a single, large Result window or in smaller, side-by-side Original and Result windows.

To sharpen or fade effects in Corel PHOTO-PAINT, you can use the Repeat or Fade commands. The Repeat command lets you repeat the last effect filter that was applied to the current image, making the effect stronger. The Fade command lets you gradually remove the effect, making the effect more subtle.

For more information about effects, see "Applying special effects to images" on page 365.

Internet support

Corel PHOTO-PAINT includes sophisticated tools for producing bitmap images suitable for viewing on the Internet. You can assign Internet addresses to objects, or you can define clickable regions to create an image map. Image files can be saved in file formats supported by Web browsers.

For more information about Internet support, see "Publishing images to the Internet" on page 447.

Layer masks

Layer masks in Adobe Photoshop are called clip masks in Corel PHOTO-PAINT. A clip mask lets you vary the transparency of pixels in an object, without permanently affecting the object's pixels. Clip masks cover an object like invisible sheets but are not part of the object. This means that you can cancel the changes you make to the transparency of the pixels in an object by changing the clip mask, even after you save the image. You can create a clip mask to edit the transparency of an entire object or to edit the transparency of only part of an object.

In Corel PHOTO-PAINT, clip masks have their own alpha channels on the Channels Palette. For more information about clip masks, see "Editing an object's transparency" on page 232.

Layers

In Adobe Photoshop and Corel PHOTO-PAINT, images are composed of separate transparent sheets that are equal in size to the dimensions of the image. In Adobe Photoshop, these sheets are called layers; in Corel PHOTO-PAINT, they are called objects.

Each Corel PHOTO-PAINT object is a separate and distinct component of the image and is used to form a composite image. The Objects Palette in Corel PHOTO-PAINT displays thumbnail versions of each object. You can change an object's position in the stacking order, adjust its transparency, or choose a merge mode to change the object's appearance in relation to the image data that lies beneath it.

For more information about objects, see "Working with text and objects" on page 189.

Layer options

The Layer Options dialog box in Adobe Photoshop is called the Object Properties dialog box in Corel PHOTO-PAINT. You can use the Object Properties dialog box to adjust basic object settings (such as name, merge modes, and opacity) and to assign a URL to an object. If you want to use an

image as an image map on a Web page, you can choose the WWW URL tab to assign a URL and define the clickable region of the image.

In Adobe Photoshop, you can create partial blends between the active layer and the underlying layers by defining a range of color values for the pixels in the blend. Corel PHOTO-PAINT does not support these types of blends; when Adobe Photoshop files containing these blend ranges are imported into Corel PHOTO-PAINT, the ranges are ignored.

For more information about object properties, see "Creating and copying objects" on page 190.

Low-resolution editing

In Adobe Photoshop and Corel PHOTO-PAINT, you can edit low-resolution versions of large images. These smaller, low-resolution copies let you edit images without the delays that you can experience when editing large, high-resolution images.

When you open a low-resolution image in Corel PHOTO-PAINT, you can edit it in the same way that you edit any other image. As you edit the low-resolution image, Corel PHOTO-PAINT records the operations that you perform. You can then render these operations to the original, high-resolution image.

For more information about low-resolution editing, see "Opening a low-resolution version of a large image" on page 23.

Mask channels

Adobe Photoshop and Corel PHOTO-PAINT use mask channels (also called alpha channels). Mask channels are temporary storage areas for masks and are useful when you want to switch between multiple masks. Instead of having to recreate a mask each time, you can store your mask in a mask channel. You can save a mask channel to a file or load a previously saved channel onto the current image.

In both Adobe Photoshop and Corel PHOTO-PAINT, you can create new channels using the Channels Palette. In Adobe Photoshop, you can set the following attributes for a new channel: name, color, opacity, and whether the color indicates masked areas or selected areas. For a new channel in Corel PHOTO-PAINT, the Channels Palette lets you set the name, color, and opacity, as well as the invert overlay capability and the fill color. Channel settings are automatically reset to their default values when you import or export files between Adobe Photoshop and Corel PHOTO-PAINT.

For more information about mask channels, see "Managing multiple masks" on page 118.

Navigator Palette

Both the Adobe Photoshop Navigator Palette and the Corel PHOTO-PAINT Navigator pop-up window let you scroll to a particular area of the image. In Corel PHOTO-PAINT, the Navigator pop-up window appears in the bottom left corner of the Image Window when the Image Window is smaller than the image. You can click the Navigator pop-up window to change your field of view to another part of the image. The Navigator pop-up window provides a quicker method for moving around within the image than the scroll bars.

Object transformations

In both Adobe Photoshop and Corel PHOTO-PAINT, you can transform images by rotating, skewing, sizing, distorting, and adding perspective to objects. In Adobe Photoshop, these transformations are performed using the Layer menu; in Corel PHOTO-PAINT, they can be performed interactively on screen.

The transformation tools in Corel PHOTO-PAINT let you alter the physical position, size, and appearance of an object without changing its basic shape. To transform an object, you can click the object to select it and display its sizing handles. You can click the object again to display its rotation and skewing handles. Click a third and fourth time to display its distortion and perspective handles, respectively. You can drag the handles to apply the corresponding transformation.

In Corel PHOTO-PAINT, you can also transform objects by using the transformation modes on the Property Bar or on the Tool Settings Palette for the Object Picker tool. Transformations can be applied to one object, to multiple objects, or to objects that have been grouped.

For more information about object transformations, see "Transforming objects" on page 216.

Palettes

Like Adobe Photoshop, Corel PHOTO-PAINT makes its most popular features and commands available on screen using Palettes. Palettes are dialog boxes that contain the same controls (e.g., command buttons, options, and pop-up menus) as most dialog boxes. Unlike most other dialog boxes, however, you can keep Palettes open while working on an image to access the operations you use most frequently or to experiment with different effects.

You can also combine Corel PHOTO-PAINT Palettes by dragging the tab of one Palette onto another Palette. The two Palettes become grouped in a single window, with separate tabs for each Palette.

For more information about setting up Palettes, see "Using Palettes" on page 9.

Plug-in support

Corel PHOTO-PAINT supports the Adobe Plug-in standard. Plug-ins let you import images from scanners, digital cameras, and other devices. They provide additional features and effects for image editing in Corel PHOTO-PAINT. Plug-ins placed in the Corel Plug-ins folder can be accessed from the Import, Export, or Effects menus.

For more information about plug-in support, see "Opening files" on page 517.

Property Bar

The Corel PHOTO-PAINT Property Bar is a context-sensitive command bar that displays different buttons and options, depending on the selected tool or object. For example, when the Text tool is selected, the Property Bar contains only text-related commands.

In Corel PHOTO-PAINT, you can add, remove, and reorganize controls on the toolbars and the Property Bar using the Preferences dialog box. For example, you can move buttons between a toolbar and the Property Bar by dragging them from one bar to another. You can also remove a button from both a toolbar or the Property Bar by dragging a button to an open area.

For more information about setting up and using the Property Bar, see "Using the Property Bar" on page 8.

Selections

Both Adobe Photoshop and Corel PHOTO-PAINT let you select portions of an image for modification while protecting other areas from change. In Adobe Photoshop, this process is called making selections and is performed using the commands in the Select menu. In Corel PHOTO-PAINT, it is called masking and is performed using the commands in the Mask menu.

In Corel PHOTO-PAINT, a mask isolates the area that you want to protect from change when you apply color, filters, or other effects to an image. When you select an area on your image using a mask tool, the area that you select is editable and the rest of the image is protected by a mask. You can create regular and color-sensitive masks. You can also reverse the selected and protected areas on your image at any time by inverting the mask.

For more information about masks, see "Selecting image areas" on page 61.

Swatches

In both Adobe Photoshop and Corel PHOTO-PAINT, a swatch is a solid-colored patch that you can use to choose a color.

Adobe Photoshop offers two color swatches: foreground and background. Both are located in the toolbox and on the Color Palette. By double-clicking a swatch, you can choose the color you want to use.

Corel PHOTO-PAINT offers three color swatches: Paint, Paper, and Fill. All three color swatches are located on the Status Bar. You can change the paint, paper, or fill colors by choosing a color from the on-screen Color Palette and dragging it to the appropriate color swatch on the Status Bar. You can also change colors by double-clicking a color swatch.

The Swap Paint/Paper Colors button in Corel PHOTO-PAINT is located on the Status Bar. You can click this button to switch the colors of the Paint and Paper swatches. The Reset Colors button, also located on the Status Bar, restores all three swatches to their default colors.

Toolbars

In Corel PHOTO-PAINT, you can use toolbars to maximize the efficiency of your work area. A toolbar is a group of buttons that provide quick access to a series of related commands. You can use any combination of the preset toolbars, or you can create your own toolbar that contains the buttons and button arrangements you find most efficient.

Each button on a toolbar represents a command. Some are shortcuts to menu commands; others are commands that are available only as toolbar buttons. You can customize your work area by displaying, hiding, sizing, or docking the toolbars. Toolbars can be docked to any side of your Application Window. You can also arrange toolbars by snapping them to the edges of other toolbars or to the Property Bar.

For more information about toolbars, see "Customizing toolbars" on page 477.

Undoing a series of operations

In Corel PHOTO-PAINT, there are two ways to undo operations: you can undo the last operation performed, or you can undo a series of operations that you have previously performed in the session. As you edit images in Corel PHOTO-PAINT, your commands are recorded in an undo list. You can display this list at any time and undo commands from any point in the sequence. You can also redo a command from any point in the sequence.

If you want to partially redo or undo operations in Corel PHOTO-PAINT, you can use the Repeat and Fade commands. When you use the Repeat command, the action is reapplied to the image, often producing a stronger visual effect. When you use the Fade command, the action is gradually removed from the image, producing a more subtle visual effect.

For more information about undoing or redoing operations, see "Undoing and redoing changes" on page 36.

Workspaces

In Corel PHOTO-PAINT, you can customize a workspace. A workspace is a set of customized preferences that let you optimize your personal work area. Although most Corel PHOTO-PAINT commands have predefined default settings that anticipate your actions, you can ensure that the application works exactly the way you want by customizing these settings.

You can also maintain different workspaces for different tasks in Corel PHOTO-PAINT. For example, you can customize the physical location of dialog boxes on your screen. For more information about customizing workspaces, see "Exploring the work area" on page 4.

Comparing tools

Both Adobe Photoshop 4.0 and Corel PHOTO-PAINT 8 make their primary image-editing tools available in a toolbox, which is a collection of buttons found on the left side of the work area. In Corel PHOTO-PAINT, the Toolbox works with the Property Bar to place the most popular and important commands and tool settings at your fingertips.

Although the Adobe Photoshop and Corel PHOTO-PAINT toolboxes function in the same way, the specific toolbox items of each application differ. Some tools in Adobe Photoshop and Corel PHOTO-PAINT perform the same task but have a different name. Other tools have the same name but may perform the task in a different way. In addition, some tools are organized in a different way; for example, Adobe Photoshop makes its brush tools available in the toolbox, whereas Corel PHOTO-PAINT makes a wider variety of brush tools available on the Property Bar.

Corel PHOTO-PAINT also provides some tools in its toolbox that are not found in the toolbox of Adobe Photoshop. Previewing the toolbox differences between the two applications helps you make a quicker transition to working with Corel PHOTO-PAINT.

Examining the Toolbox

Although both Adobe Photoshop and Corel PHOTO-PAINT have toolboxes, some tools differ in name and function between the two applications. The following table lists each Adobe Photoshop toolbox item and describes the corresponding tool or operation in Corel PHOTO-PAINT.

Adobe Photoshop tool	Corel PHOTO-PAINT tool and description
	In Adobe Photoshop, the Rectangle Marquee tool lets you make rectangular selections on an image. In Corel PHOTO-PAINT, you can perform this operation using the Rectangle Mask tool.
	In Adobe Photoshop, the Elliptical Marquee tool lets you make elliptical selections on an image. In Corel PHOTO-PAINT, you can perform this operation using the Circle Mask tool.
	In Adobe Photoshop, the Single Row Marquee tool lets you make one-pixel-wide horizontal selections on an image. In Corel PHOTO-PAINT, you can perform this operation using the Rectangle Mask tool.
	In Adobe Photoshop, the Single Column Marquee tool lets you make one-pixel-wide vertical selections on an image. In Corel PHOTO-PAINT, you can perform this operation using the Rectangle Mask tool.
	In Adobe Photoshop, the Crop tool lets you trim images. In Corel PHOTO-PAINT, you can use the Deskew Crop tool to define a cropping area and straighten crooked images.
	In Adobe Photoshop, the Move tool lets you move selections, layers, and guides. In Corel PHOTO-PAINT, the Object Picker tool lets you select and transform objects, and the Mask Transform tool lets you select and transform masks.
	In Adobe Photoshop, the Lasso tool lets you make freehand selections. In Corel PHOTO-PAINT, you can use the Lasso Mask tool to create irregularly shaped selections that include surrounding pixels of similar colors.
	In Adobe Photoshop, the Polygon Lasso tool lets you make freehand and straight-edged selections. In Corel PHOTO-PAINT, you can perform this operation using the Freehand Mask tool.
	In Adobe Photoshop, the Magic Wand tool lets you create irregularly shaped selections that include all adjacent pixels that are similar in color to the pixel you select. In Corel PHOTO-PAINT, you can perform this operation using the Magic Wand Mask tool.
	In Adobe Photoshop, the Airbrush tool lets you paint soft-edged strokes on an image. In Corel PHOTO-PAINT, you can also perform this operation using the Airbrush tool, which becomes available on the Property Bar when you click the Paint tool. in the Toolbox. For more information about paint tools, see "Choosing paint tools" on page 542.

In Adobe Photoshop, the Paintbrush tool lets you paint brush strokes on an image. In Corel PHOTO-PAINT, you can perform this operation using the Art Brush tool, which becomes available on the Property Bar when you click the Paint tool in the Toolbox. For more information about paint tools, see "Choosing paint tools" on page 542.

In Adobe Photoshop, the Eraser tool lets you erase pixels and restore parts of a saved image. In Corel PHOTO-PAINT, you can use the Eraser tool to reveal the object or image background underneath the image area.

In Adobe Photoshop, the Pencil tool lets you draw hard-edged strokes on an image. In Corel PHOTO-PAINT, you can also perform this operation using the Pencil tool, which becomes available on the Property Bar when you click the Paint tool in the Toolbox. For more information about paint tools, see "Choosing paint tools" on page 542.

In Adobe Photoshop, the Rubber Stamp tool lets you create a copy of an image. In Corel PHOTO-PAINT, you can use various clone tools to duplicate a part of an image and apply it to another part of the image or to another image altogether. These tools become available on the Property Bar when you click the Clone tool in the Toolbox. For more information about clone tools, see "Choosing paint tools" on page 542.

In Adobe Photoshop, the Smudge tool lets you decrease the definition between colors or hard edges in an image by brushing over them. In Corel PHOTO-PAINT, you can also perform this operation using the Smudge tool, which becomes available on the Property Bar when you click the Effect tool in the Toolbox. For more information about the effect tools, see "Choosing editing tools" on page 544.

In Adobe Photoshop, the Blur tool lets you blur hard edges in an image. In Corel PHOTO-PAINT, you can choose from a variety of blur effects in the Effects menu.

In Adobe Photoshop, the Sharpen tool lets you sharpen soft edges in an image. In Corel PHOTO-PAINT, you can also perform this operation using the Sharpen tool, which becomes available on the Property Bar when you click the Effect tool in the Toolbox. For more information about effect tools, see "Choosing editing tools" on page 544. Additional sharpen effects in Corel PHOTO-PAINT are available in the Effects menu.

In Adobe Photoshop, the Dodge tool lets you lighten areas in an image. In Corel PHOTO-PAINT, you can perform this operation using the Dodge/Burn tool, which becomes available on the Property Bar when you click the Effect tool in the Toolbox. For more information about effect tools, see "Choosing editing tools" on page 544.

In Adobe Photoshop, the Burn tool lets you darken areas in an image. In Corel PHOTO-PAINT, you can perform this operation using the Dodge/Burn tool, which becomes available on the Property Bar when you click the Effect tool in the Toolbox. For more information about effect tools, see "Choosing editing tools" on page 544.

In Adobe Photoshop, the Sponge tool lets you change the color saturation of an area in an image. In Corel PHOTO-PAINT, you can also perform this operation using the Sponge tool, which becomes available on the Property Bar when you click the Effect tool in the Toolbox. For more information about effect tools, see "Choosing editing tools" on page 544.

In Adobe Photoshop, the Pen tool lets you draw smooth-edged paths on an image. In Corel PHOTO-PAINT, you can create and edit paths with the options on the Property Bar after you click the Path Node Edit tool in the Toolbox.

In Adobe Photoshop, the Direct Selection tool lets you select and move paths and parts of paths. In Corel PHOTO-PAINT, you can perform this operation with the options on the Property Bar after you click the Path Node Edit tool in the Toolbox.

In Adobe Photoshop, the Add Anchor Point tool lets you add anchor points to a path. In Corel PHOTO-PAINT, you can perform this operation with the options on the Property Bar after you click the Path Node Edit tool in the Toolbox.

In Adobe Photoshop, the Delete Anchor Point tool lets you delete anchor points from a path. In Corel PHOTO-PAINT, you can perform this operation with the options on the Property Bar after you click the Path Node Edit tool in the Toolbox.

In Adobe Photoshop, the Convert Anchor Point tool lets you convert straight line segments to curved segments, and vice versa. In Corel PHOTO-PAINT, you can perform this operation with the options on the Property Bar after you click the Path Node Edit tool.

T	In Adobe Photoshop, the Type tool lets you add text to your image and edit existing text. In Corel PHOTO-PAINT, you can perform this operation using the Text tool.
T (mask)	In Adobe Photoshop, the Type Mask tool lets you create selection borders in the shape of text. In Corel PHOTO-PAINT, you can perform this operation with the Render to Mask option on the Property Bar after you click the Text tool in the Toolbox.
\	In Adobe Photoshop, the Line tool lets you draw straight lines using the current paint color. In Corel PHOTO-PAINT, you can also perform this operation using the Line tool.
▣	In Adobe Photoshop, the Gradient tool lets you fill an area with a gradual transition between one or more colors. In Corel PHOTO-PAINT, you can perform this operation using the Interactive Fill tool.
🪣	In Adobe Photoshop, the Bucket tool lets you fill similarly colored areas with the foreground color. In Corel PHOTO-PAINT, you can use the Fill tool to fill areas on your image with color, texture, images, or designs.
⚲	In Adobe Photoshop, the Eyedropper tool lets you choose a paint color based on the color of any pixel in your image. In Corel PHOTO-PAINT, you can also perform this operation using the Eyedropper tool.
✋	In Adobe Photoshop, the Hand tool lets you drag areas of an image into view when the image is larger than the Image Window. In Corel PHOTO-PAINT, you can also perform this operation using the Hand tool.
🔍	In Adobe Photoshop, the Zoom tool lets you magnify and reduce the view of your image. In Corel PHOTO-PAINT, you can also perform this operation using the Zoom tool.

Choosing paint tools

Adobe Photoshop and Corel PHOTO-PAINT differ in their selection and organization of painting tools. Adobe Photoshop offers seven main painting tools: Airbrush, Paintbrush, Pencil, Rubber Stamp, Line, Gradient, and Bucket, all available in the toolbox. For some of these painting tools, you can use the Brushes palette to customize the brush settings.

Corel PHOTO-PAINT offers a wider variety of painting tools that you can access by clicking the Paint tool in the Toolbox. The resulting Property Bar contains a tool picker with fifteen different painting tools, including Art Brush, Airbrush, Spray Can, Marker, Chalk, Crayon, Charcoal, and various pen types.

Brush types and merge modes

For each Paint tool in Corel PHOTO-PAINT, the Property Bar includes many predefined brush types and merge modes. The brush types help you to tailor a brush for a specific task. For example, if you want a highly detailed and precise stroke for the Art Brush, you can use the Detail brush type. If you want a more creative stroke, you can try the Swirl brush type. The merge modes, also called paint modes, control the way the current paint color blends with the base color of the image. For more information about brush types and merge modes, see "Painting, filling, and editing images" on page 125.

Symmetrical painting

Corel PHOTO-PAINT lets you paint symmetrical designs on your images. There are two modes for symmetrical painting: radial and mirror. When you paint in radial mode, satellite points move toward the brush's center point as you paint. When you paint in mirror mode, an identical stroke is created on the horizontal and vertical plane of the image. For more information about symmetrical painting, see "Painting with symmetry" on page 160.

Customizing settings

Like Adobe Photoshop, you can also customize the settings for each paint tool in Corel PHOTO-PAINT. The Property Bar lets you customize the nib size, shape, edge behavior, and transparency. You can use the Tool Settings Palette to customize the settings for brush type, texture, dab attributes, stroke attributes, and orbits. For more information about brush settings, see "Creating custom brushes" on page 127.

Additional painting tools

Corel PHOTO-PAINT offers two additional painting tools in the Toolbox: the Clone tool and the Image Sprayer tool. The Clone tool lets you duplicate parts of an image onto a different part of the same image or onto a different image altogether. The Image Sprayer tool lets you paint by spraying images on to your existing image. For example, you can spray cloud images across a blue sky. Like the other Corel PHOTO-PAINT painting tools, the Property Bar for both the Clone tool and Image Sprayer tool contains predefined settings, as well as options for customizing these settings. For more information about the Clone tool or the Image Sprayer tool, see "Painting images" on page 147.

Choosing editing tools

Adobe Photoshop groups editing tools, such as Eraser, Smudge, Blur, Dodge, Sharpen, Burn, and Sponge, in the toolbox. Corel PHOTO-PAINT classifies these tools as Effect tools.

To access different Effect tools in Corel PHOTO-PAINT, you can click the Effect tool in the Toolbox. The resulting Property Bar includes a tool picker with twelve different effect tools, including Smear, Smudge, Hue, Tint, Sponge, and Dodge/Burn. Additional special effects, such as Sharpen and Blur, are located in the Effects menu.

Brush types and merge modes

For each Effect tool in Corel PHOTO-PAINT, the Property Bar includes many predefined brush types and merge modes. The brush types help you to tailor the Effect tool for a specific task. For example, if you want a wide stroke for the Smear tool, you can use the Thick Smear brush type. If you want to add the illusion of movement to your stroke, you can try the Motion Blur brush type. The merge modes, also called paint modes, control the way the current paint color blends with the base color of the image.

Customizing settings

Like Adobe Photoshop, you can also customize the settings for each effect tool in Corel PHOTO-PAINT. The Property Bar lets you customize the nib size, shape, rate of application, and transparency. You can also use the Tool Settings Palette to customize settings. For more information about customizing effect tool settings, see "Creating custom brushes" on page 127.

For more information about editing and effect tools, see "Painting, filling, and editing images" on page 125.

Examining unique Corel PHOTO-PAINT Toolbox items

The Corel PHOTO-PAINT Toolbox contains some tools that are not available in the Adobe Photoshop toolbox. The following table describes these tools.

Tool	Description
⊕	The Mask Transform tool lets you transform selections.
✂	The Scissors Mask tool lets you detect the edges of the objects in your image and place a mask marquee along those edges.
🖌	The Mask Brush tool lets you select an area on an image by painting over it.

	The Local Undo tool lets you restore images to the way they looked before your last brush stroke.
	The Color Replacer tool lets you replace your most recent paint strokes with the paper color.
	The Rectangle tool lets you draw hollow, filled, or rounded rectangles.
	The Ellipse tool lets you draw hollow or filled ellipses.
	The Polygon tool lets you draw hollow or filled polygons.
	The Object Transparency tool lets you fade the colors of an object gradually toward the image background color.
	The Object Transparency Brush tool lets you brush areas on an object to increase their transparency.
	The Transparent Color Selection tool lets you make pixels with a specific color value in an object fully transparent.
	The Paint tool lets you access different brush tools to paint an image using the paint color.
	The Effect tool lets you access different effect tools to perform local color and tonal corrections.
	The Image Sprayer tool lets you spray a series of bitmaps onto images.

Comparing print technologies

Both Adobe Photoshop 4.0 and Corel PHOTO-PAINT 8 provide print options that are designed for both desktop and commercial printing; however, specific printing capabilities differ between the two applications. Some printing features are accessed in different ways, whereas other features (e.g., previewing a print job) operate differently. Corel PHOTO-PAINT also offers some unique printing features that give you more flexibility when generating output for your graphic designs.

Accessing print options

You access print options in Adobe Photoshop and Corel PHOTO-PAINT in different ways. In Adobe Photoshop, the print options are split between two dialog boxes: the Print and Page Setup dialog boxes. In Corel

PHOTO-PAINT, all print options are contained in the Print dialog box, whereas the Page Setup dialog box contains only specific page settings.

The Print dialog box in Corel PHOTO-PAINT has a series of pages; the following list describes these pages and their contents:

- **General** — lets you specify the number of copies, the print range, and the printer setup options. If you have more than one image opened, this page includes a list box in which you can select the images you want to print.

- **Layout** — lets you specify the page position of the image, tiling, bleed limit, signature layout style, and N-up format.

- **Separations** — lets you print color separations. You can accept default settings, or you can customize the frequency, angle, and overprint settings for each color used.

- **Prepress** — lets you specify print options for file information, page numbers, crop marks, registration marks, and calibration bars. You can also choose the Invert or Mirror options for paper/film settings.

- **PostScript** — lets you specify PostScript settings, including levels of compatibility, bitmap options, and screen frequency. You can also enable a check box to output color bitmaps in RGB.

- **Miscellaneous** — lets you specify color profiles, proofing options, and print job information options.

Previewing your work

Both Adobe Photoshop and Corel PHOTO-PAINT offer features that let you preview your work. With these features, you can get an idea of how your image will look when printed. These previewing features, however, differ in functionality and scope between the two applications.

Adobe Photoshop offers a View Print Size feature that resizes the on-screen image to its printed size. Adobe Photoshop also provides a Page Layout feature that displays the image's position on the page.

In Corel PHOTO-PAINT, you can choose the Print Preview feature either from the File menu or by clicking the Print Preview button at the bottom of the Print dialog box. The Print Preview window shows you the image's position and size on the page, as well as the printers' marks (e.g., crop marks and color calibration bars). You can move from page to page in the Print Preview window, preview individual color separations, and view composite images.

A Toolbox at the side of the Print Preview window in Corel PHOTO-PAINT lets you view the image in several different modes and adjust the magnification of the page. You can also make changes to the image position with the toolbar at the top of the Print Preview window. For more

information about previewing your print job in Corel PHOTO-PAINT, see "Previewing, sizing, and positioning a print job" on page 492.

Examining unique printing features

Corel PHOTO-PAINT provides some additional printing features, such as a highly flexible approach to printing multiple pages on a single sheet. Although the LaserWriter 8.5.1 print driver supports this feature, Corel PHOTO-PAINT offers more options and increased flexibility. If each page of your document is smaller than the sheet of paper on which it is printed or if you shrink the pages of a document, you can use the signature layout styles or N-up formats. Signature layout styles let you determine the order and orientation of each page on the printed sheet. N-up formats let you arrange several signature layouts on a single printed sheet or print multiple copies of the same signature layout on a single printed sheet. For more information about signature layout styles and N-up formats, see "Printing multiple pages on a single printed sheet" on page 490.

Corel PHOTO-PAINT also provides the unique option of printing multiple images at once. When you have more than one image opened, a window on the General page of the Print dialog box lists all of those images. By clicking the check box beside the image(s) you want to include in the print job, you can print all of the selected images at once. You can also use this feature in conjunction with the N-up formats to choose which images you want to include on the same page.

The Prepress page in the Corel PHOTO-PAINT Print dialog box provides two additional unique features: different styles of registration marks and densitometer scales. Registration marks are cross hairs or other marks that are used to align the film produced from color separations; Corel PHOTO-PAINT provides five styles of registration marks from which to choose. A densitometer scale is a series of gray boxes ranging from light to dark. These boxes can be used to test the density of halftone images. You can position the densitometer scale anywhere on the page, and you can customize the levels of gray that appear in each of the seven squares on the densitometer scale.

You can also print Hexachrome color separations in Corel PHOTO-PAINT. Hexachrome color is a method of extending the range of the four traditional process inks (cyan, magenta, yellow, and black) by using two additional inks (orange and green). For more information about using Hexachrome color, see "Creating color separations" on page 510.

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