canvas™ 11

CANVAS USER'S GUIDE

acdsee™

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Glossary

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CHAPTER 1

INTRODUCTION

Welcome to Canvas, a completely integrated environment for illustration, page layout, imaging, presentations, and Web publishing.

Canvas lets you work with vector objects, images, text, and imported graphics without having to switch to other applications. Whether you are a beginner or an experienced designer, the tools and features in Canvas can make you more productive.

Canvas provides a complete solution for home, small business, school, and corporate users:

- An array of tools for illustration, layout, editing, proofing, and final output, so you can take projects from start to finish in Canvas.
- A dynamic and flexible interface, including a Toolbar you can configure with commands, tools, and styles as well as customizable keyboard shortcuts; a Docking bar to store palettes; a Properties bar for tool settings and object manipulation; a Dynamic Help window; and the Canvas Assistant.

About the documentation

✓ Tip
Throughout this book you'll find tips for working efficiently and exploring creative possibilities. Items labeled "Important" provide information to help you avoid problems.

Please take a few minutes to read the following information about the Canvas documentation.

The *Canvas User's Guide* describes the commands, tools, and features of Canvas. Certain terms and abbreviations are used in this manual to describe procedures.

In addition to the *Canvas User's Guide*, the *Quick Reference Guide* is also available in PDF format on the Canvas CD. You can find this file in the MANUALS folder.

Product icons

To indicate the items that are only available for the GIS +, an icon has been added for reference.

Icon	Meaning
	This feature is only available for Canvas with GIS+.

Keyboard keys

This manual uses standard names and abbreviations for keyboard keys; your keyboard might use different labels.

Key name	Description
Alt	The Alternate key, usually labeled “Alt”.
Ctrl	The key labeled “Ctrl”.
Shift	The key used to type uppercase characters
Enter	The key labeled “Enter”.

Choosing commands

When a procedure tells you to choose a command, the instruction is written:

Choose Edit > Paste

This tells you to open the Edit menu and choose the Paste command. You can use a keyboard shortcut if the command has one.

Some menu items open a submenu of related commands. When the documentation tells you to choose a submenu command, the instruction is written:

Choose Object > Arrange > Bring To Front

This tells you to open the Object menu, choose Arrange to open the submenu, and then choose the Bring To Front command.

Choosing commands in the context menu

You can choose commands from a menu that pops up wherever the pointer is in Canvas. The commands in the menu are based on what you are doing; therefore, the menu is called the *context* menu.

To choose a command from the context menu, press the secondary mouse button, usually the right button.

Using modifier keys

For some actions, you need to press a keyboard key while you click or drag the mouse; e.g., to select several objects, press the Shift key while you click each object. This can be written as *Shift-click*. If you press the Ctrl key, for example, while you drag the mouse, the action can be written as *Ctrl-drag*.

Some instructions say to "right-click" an object. This means to click the object using the secondary button, usually the right button, on the mouse.

Contacting ACD Systems and updating Canvas

The following functions are available by opening the Help menu in Canvas.

Viewing online Canvas forums and knowledgebase

The link to the online Canvas forums directs your browser to the ACD support forums for the Canvas product line. These forums are monitored by the technical support department and are used by a variety of users.

Use the online knowledgebase to find solutions to various situations. Technical support publishes articles regularly.

ACDInTouch

ACDInTouch is a data exchange service. When you connect, information is sent to you so that you can read up-to-date information directly in the ACDInTouch Viewer. This information is relevant to your product, such as upgrades, add-ons, and related software from ACD Systems that may also be of interest to you.

myACD

Use myACD to manage your ACD Systems software. With it, you can check the status of your software, enter a license code to update your trial versions, and download other products to try or buy.

- **To open the myACD Control Panel:** Choose Help > myACD.

✓ **Tip**
For complete access to all myACD features, you must be connected to the Internet.

The myACD Control Panel displays a list of currently installed software, and whether that software is a trial or full version. You can purchase software and even update your trials to a full version. You can also view a list of additional products that you can download and install on your hard drive.

To obtain a full version license code for trial software already installed on your hard drive

1 In the Installed Products list of the myACD Control Panel dialog box, select a product containing a trial version status.

2 Click the Buy button below the Installed Products list. You will be prompted with further instructions.

To update a trial version with a full version license code

1 In the Installed Products list of the myACD Control Panel, select a product that contains a trial version status.

2 Click Enter License Code.

3 In the License Code dialog box, type the license code provided to you by ACD Systems.

4 Click OK.

To download and install free software

1 In the Additional Products list of the myACD Control Panel dialog box, select a free product.

2 Click the Install button. You will be prompted with further instructions.

To download and install trial version software

1 In the Additional Products list of the myACD Control Panel dialog box, select a product.

2 Click the Try button located below the Additional Products list. You will be prompted with further instructions.

To buy, download, and install full version software

1 In the Additional Products list of the myACD Control Panel dialog box, select a product.

2 Click the Buy button located below the Additional Products list. You will be prompted with further instructions.

Customer Support & Contacting ACD Systems

Select Customer Support to be directed to the online customer support center where you can log in or create an account.

If you need contact information for ACD Systems or need to submit a service, select Contacting ACD Systems. There are also links to FAQs and the knowledgebase.

Check for Updates

✓ **Tip**
You must, however, be connected to the Internet and be using a properly registered copy of Canvas.

You can manually check for updates by choosing Help > Update Canvas. Your browser is directed to the ACD Software Updates page. If there is a later version of Canvas available, you can download the installer.

Verify Document

Select this command to check that your document does not contain errors while you are working. When chosen, the Document Verification Details dialog box opens. Any errors will be indicated in this dialog box. The Verify on save checkbox is selected by default.

Install Canvas PS Driver (Windows XP only)

If you have Windows XP, select this option to install the Canvas Print Driver. Once installed the Canvas Print Driver appears in the list of printers when printing a document.

For more information, see "Printing to Canvas" on page 13.30.

Getting help with Canvas

If you need help while using Canvas, there are various utilities for your use.

Using Electronic Manual

✓ **Tip**
For the latest information on Canvas, be sure to view any "Read Me" files included with the program.

Canvas includes an electronic version of the User's Guide that lets you refer to the documentation while you work. The Electronic Manual also contains supplementary information that is not included in the printed User's Guide.

To view Help in Canvas Press the F1 key to display the Electronic Manual or choose Help > Electronic Manual.

When you press F1, the Contents topic appears. You can also search for topics or use the Index.

Show Startup

Select this command to open the Canvas Startup dialog box. You can create a new document, open documents, or access recent documents. You also have links to tutorials, online forums, knowledgebase articles, among others.

- **To open the Startup dialog box:** Choose Window > Show Startup.

Canvas Assistant

Open by default, the Canvas Assistant dynamically displays information related to document setup, selected tools, and selected objects. Information is sorted according relevancy; i.e., specific, related, or general.

- **To open the Canvas Assistant:** Choose Window > Canvas Assistant.

- **To close the Canvas Assistant:** Click the close icon at the top of the palette.

GETTING STARTED

CHAPTER 2

TUTORIALS

This section introduces various Canvas features. A series of lessons present procedures and examples for you to follow. We recommend that you complete as many lessons as possible if you are a new Canvas user.

Canvas, an integrated program with powerful features for illustration, precision drawing, painting, and image editing, text layout, and Web publishing.

By working through the lessons, you'll gain a basic understanding of the program's capabilities while you learn how to use the Canvas interface. You can complete the lessons in order, or skip to the ones you feel are most relevant to you.

Before you begin

The tutorial requires that you understand common terms and procedures for your operating system. You should know how to do the following:

- launch applications
- open and save files
- perform basic actions with a mouse, like click and drag
- move, close, and resize windows
- use menu commands
- use the keyboard, including modifier keys

If you are not familiar with these operations, consult your operating system documentation or a basic computing reference book for instructions.

Canvas basics

Canvas integrates a wide range of features within a single interface. Unlike separate image-editing, page layout, and illustration programs, Canvas lets you use a core set of tools and procedures to work with all different types of objects — text, vector, or image.

This section introduces basic procedures, including working with documents, selecting objects, editing objects, and undoing actions. These procedures are used throughout the lessons in this guide.

Working with documents

Canvas can not only open Canvas files but also a great number of file formats, such as JPEG, TIFF, PDF, GIF, etc. Choose File > Open to see the compatible formats.

To open existing documents

1 Choose File > Open and the directory dialog box appears.

2 Browse through the directories to find your file.

3 Highlight or select your file.

4 Click the Open button.

To start a new Canvas document

1 Choose File > New and the New dialog box opens.

2 Select the type of document: Illustration, Publication, Animation, or Presentation.

3 Choose the Document Size and Document Units.

- **Canvas templates:** You can also select a template from the Use Template menu. Template choices change depending on type of document selected.

Selecting tools from the Smart Toolbox

✓ **Tip**
The Toolbox can be moved around the main window.

To use a tool, you select it from the Smart Toolbox™, which contains all the Canvas tools used for drawing, text, image-editing, and effects. The Toolbox displays 14 tools at a time, while the remaining tools are available from tool palettes that snap out from the Toolbox.

- **To display the Toolbox:** Choose Window > Toolbox > Show Toolbox.
- **To select a tool displayed in the Toolbox:** Click the tools icon.

To select tools from tool palettes

To select a tool that isn't displayed in the Toolbox, click the icon of the tool palette that contains the tool. Click the icon of the tool you want to select.

Selecting and moving objects



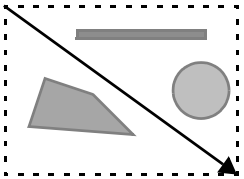
A Selection tool
B Direct Group Selection tool
C Lasso Selection tool
D Direct Edit Selection tool
E Direct Edit Lasso tool

To select, move, and edit items in Canvas, use one of the Selection tools in the Toolbox. The appearance of the pointer changes depending on which of the tools has been selected.

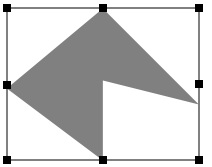
Selecting objects is one of the most common operations in Canvas. You select objects when you want to apply commands and attributes, copy, or edit the objects.

- **To select an object:** Click the object with one of the Selection tools.
- **To select more than one object:** Shift-click (press Shift while clicking) each object, or drag a selection box around the objects with the Selection tool.

When you select an object, a rectangle called a *bounding box* appears around the object. To move an object, drag it with the Selection tool. To move multiple objects, first select the objects you want to move, and then drag one of the objects.



Drag with the Selection tool to make a selection box



A bounding box with handles surrounding a selected object

Object types

Canvas has three major types of objects — vector, text, and paint objects.

Vector object An object defined by anchor points and a path. The Line, Rectangle, Oval, Arc and similar tools draw vector objects.

Text object An object that contains text.

Paint object An object that contains a raster image. The term is synonymous with image object.

Edit modes

You can also use the Selection tool to place objects in *edit mode*. Edit mode lets you modify objects in special ways.

Path edit mode Path edit mode is for editing the paths of vector objects. In path edit mode you can change the shape of a vector object by adding, deleting, and moving anchor points.

Text edit mode Text edit mode is for editing text. In text edit mode you can type text, select specific characters to edit, and place the insertion point in text. In this mode, the pointer is an I-beam. Drag the I-beam over text to select it. Click in a text object to place the insertion point (see "Page Layout & typography," page 7.1).

Paint edit mode Paint edit mode is for painting and editing images. In paint edit mode, you can edit the pixels of an image using the painting tools and Image menu commands (see "Introduction to image editing," page 5.1).

- **To place a vector object in edit mode:** Double-click the vector object with the Selection tool or click the object with the Direct Edit Selection tool.
- **To place a paint object in edit mode:** Double-click the paint image with the Selection tool.
- **To place a text object in edit mode:** Double-click the text object with the Selection tool or click the text object with the Text tool.

Zooming in and out

You can change the magnification of the viewing area to see specific objects in detail or view the layout of an entire page. This is called *zooming* your view of the document.

To change the area and view magnification, you can use menu commands, the Magnifying Glass tool, and the Zoom controls.

✓ **Tip**
Although objects seem to change size and position on screen when you zoom, the objects do not change size or position in the document.

To use menu commands to change views

In the Layout > Views submenu, choose a command to change views:

This command	Does this
Zoom In	Increases screen magnification
Zoom Out	Decreases screen magnification
Fit to Selection	Adjusts the magnification to the maximum level for the selected objects to be visible in the document window

This command	Does this
Fit to Objects	Adjusts the magnification to the maximum level for all objects on the current page, sheet, slide or frame to be visible in the document window
Fit to Window	Adjusts the magnification to make the entire layout area fit the current window size
Home View	Sets screen magnification to 100 percent, with the layout area in the upper-left corner of the window
New View	Lets you save custom view settings with a name that will appear in the menu
Zoom	Lets you enter a zoom percentage

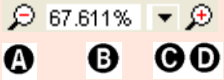
Magnifying Glass tool 

To use the Magnifying Glass tool

1 Select the Magnifying Glass tool in the Toolbox. Press Ctrl+Spacebar to temporarily select the tool.

2 Click or drag over an area to increase magnification. To decrease magnification, press the Shift key as you click or drag.

To use the Zoom controls



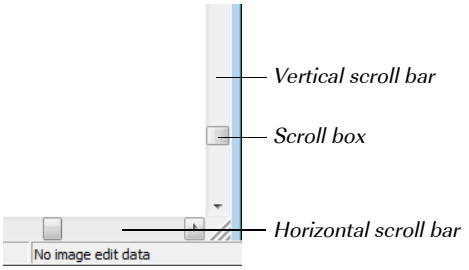
A Zoom out
B Magnification level field
C Zoom menu icon
D Zoom in

You can use the Zoom controls at the bottom left of the document window to adjust the view magnification. The Zoom controls display the current magnification and let you change magnification.

- **To zoom to the next preset magnification level:** Click the Zoom-in or Zoom-out button. The Zoom-in button increases magnification. The Zoom-out button decreases magnification.
- **To open the preset magnification menu:** Click on the menu icon and the zoom menu pops open. Select a magnification level.
- **To enter any magnification percentage:** Type the magnification percentage in the Magnification Level field of the Zoom controls.

Scrolling documents

You can use scroll bars or Hand tool to move to areas of a document that are not visible in the current view.



To use the scroll bars

Click a vertical scroll arrow to move the view up or down. Click a horizontal scroll arrow to scroll left or right. You can drag the scroll box or click the scroll bar.

The position of the scroll box within a scroll bar indicates the location of the current view relative to the entire document area.

To scroll with the Hand tool

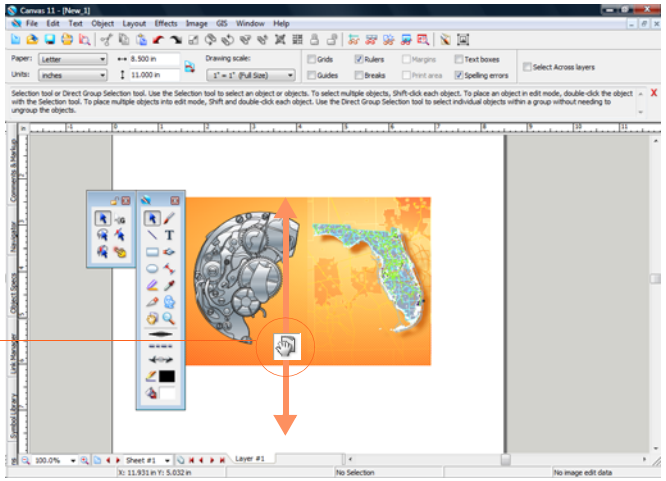
Hand tool 

1 Select the Hand tool in the Toolbox. Or, press and hold down the Spacebar to temporarily select the tool.

2 Drag in the document to move the document in the direction you drag.

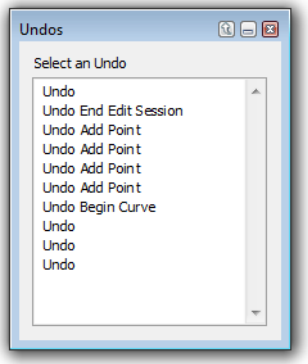
Drag with the Hand tool to slide a document in the document window





For more information on Canvas interface features, including the Docking bar, Properties bar, Toolbar, Status bar, page controls, and the Layout area, see “Overview of the Canvas interface,” page 9.2.

Undoing recent actions



Canvas encourages you to experiment with images because you can reverse actions by choosing Edit > Undo or Windows > Palettes > Undos. You can undo as many actions as your system can store in memory. The Undo command reverses actions in the opposite order from which you performed them.

Canvas can’t undo actions performed before the last time you saved a document. Also, zooming and scrolling can’t be reversed with Undo.

You can establish the number of levels of undos in the Configuration Center. Choose File > Configuration Center.

Saving documents

As you work on sample documents while following the lessons, you might want to save your work and keep the original files. To do this, choose File > Save As.

If you choose File > Save instead of Save As, Canvas replaces the original tutorial files with the new document. If this happens, you can re-install the original files from the Canvas Installation CD-ROM.

CHAPTER 3

DRAWING BASICS IN CANVAS

This lesson introduces you to basic drawing techniques. The following exercises are an excellent way to learn the Canvas interface. Doing so will familiarize you with drawing lines, rectangles, ovals, and arcs, known as vector objects in Canvas. These drawing techniques are used to draw most vector objects, including rounded rectangles, polygons, multigons, cubes, concentric circles, and spirals.

Throughout the following exercises, you can use any blank document. You'll experiment with each of the tools. As you draw more and more objects, if you need more space, you can open another document or select the objects you have already drawn and delete them.

Using drawing tools

✓ Tip
"Dragging" is defined as pressing and holding down the mouse button while you move the mouse, and then releasing the button.

When a drawing tool is selected, the pointer changes to a crosshair, indicating that you are ready to draw. You draw most vector objects by dragging in the document window where you want to draw the shape.

To create a vector object such as a rectangle, line, oval, or arc, you drag the drawing tool from one point to another point. When you finish, the object fits inside an invisible box, a *bounding box*. Remember, when an object is selected, the bounding box becomes visible.

✓ Tip
You can toggle on/off the Properties bar by choosing Window > Show/Hide Properties Bar.

Use the Properties bar, which is just below the menu bar to see the size of the object you are drawing.

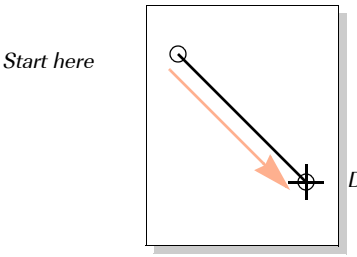
Drawing lines with the Line tool

The Line tool is used to draw straight lines at any angle. This tool allows you to choose where to start and end the line.

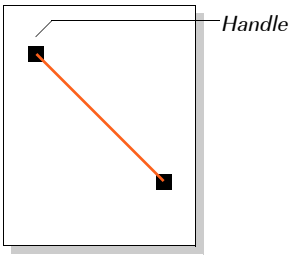
1 Select the Line tool.

2 Place the pointer where you want the first endpoint of the line and drag to the next point. The line automatically extends from the first point as you drag.

3 Release the mouse button when the line is as long as you want. Note that the line appears with a handle at each end point. These handles indicate that the line is selected.



To draw a line, drag from one endpoint to the other



A selected line has handles at its endpoints

To control the Line tool

✓ Tip
Make the Line tool snap to any 45° angle by pressing the Shift key while you drag.

You can draw straight horizontal, vertical, or diagonal lines. A modifier key may be used to limit the movement of the pointer when you drag with the Line tool.

- Press Shift and drag horizontally to create straight horizontal lines.
- Press Shift and drag vertically to create straight vertical lines.
- Press Shift and drag diagonally to create straight diagonal lines.

Drawing rectangles and squares

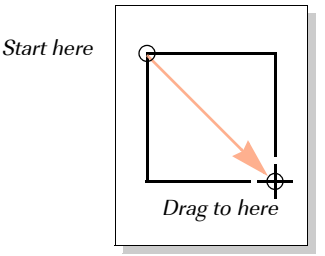
Use the Rectangle tool to draw rectangles and squares. To draw with this tool, drag from one corner to the other corner of the rectangle you want to create.

1 Select the Rectangle tool from the Toolbox.

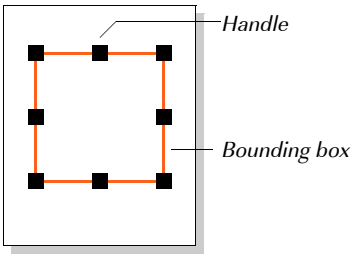
✓ Tip
The rectangle will have a handle at each corner and one at each side, which indicates that a rectangle is selected.

2 Place the pointer where you want one corner of the shape and drag the mouse diagonally to the opposite corner. The rectangle grows from the first corner as you drag.

3 Release the mouse button when the rectangle is the correct size.



Drag from one corner to the opposite corner



A finished rectangle has handles on its bounding box

- **To draw squares with the Rectangle tool:** Drag diagonally while pressing the Shift key.

Drawing ovals and circles

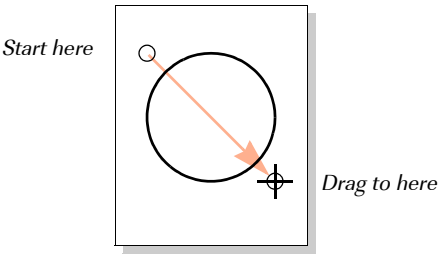


Use the Oval tool to draw ovals and circles. To draw with this tool, click and drag from one point to another point. This bounding box contains the oval or circle that you're drawing.

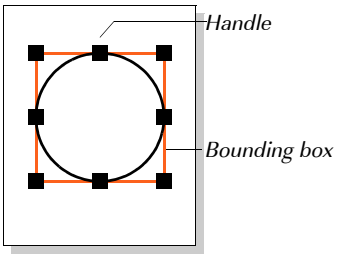
1 Select the Oval tool.

2 Place the pointer where you want to start the oval. Begin to drag to the opposite corner to form the oval shape. The oval grows diagonally from the first point as you drag.

3 Release the mouse button when the oval is the size that you need. The oval appears with a bounding box and handles at the corners and sides of the box to show that the oval is selected.



To draw an oval, drag from one corner to the opposite corner



A finished oval has handles on its bounding box

- **To draw a circle :** Press the Shift key as you drag the Oval tool diagonally. Doing so constrains the object and creates a circle.

✓ **Tip**
Press Ctrl and drag the pointer.

- **To draw an oval from its center:** Select the Circle Radius tool and place the pointer where you want the center of the oval. Notice that the oval grows from the center as you drag but the center doesn't move. Release the mouse button when the oval is the size you need.

Drawing arcs

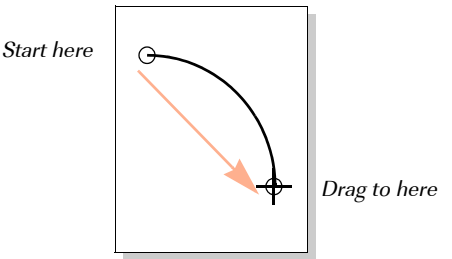
An arc is a segment of an ellipse or a circle. Use the Arc tool to draw arcs.



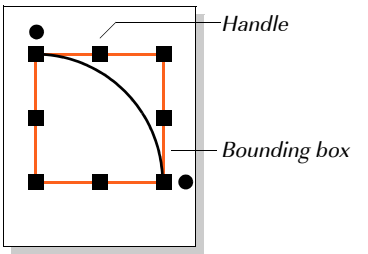
1 Select the Arc tool.

2 Place the pointer where you want one end of the arc. Begin to drag toward the other end of the arc. Notice that the arc grows from the first point as you drag.

3 Release the mouse button when the arc is the length that you want. The arc will now have a bounding box and handles at the corners and sides. This indicates that the arc is selected. Notice that the arc is always one quarter of a complete oval or circle. When an arc is selected, two small, round handles allow you to adjust the length of the arc. Drag a handle to shorten or lengthen the arc.



Drag from one end of the segment to the opposite end

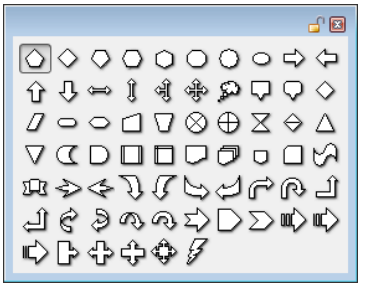


A finished arc has handles on its bounding box

Using the EasyShapes tool

Use the EasyShapes™ tool in the Markup palette to draw any one of a multitude of predefined shapes. To draw with this tool, drag from one point to another point. The resulting shape will have a bounding box around it.





To draw EasyShapes

1 Select the EasyShapes tool. The pop-up EasyShapes palette opens.

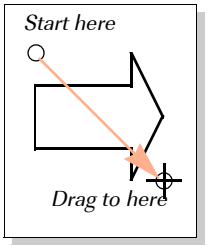
2 Select the arrow shape.

3 Place the pointer where you want to start the arrow shape. Drag to the opposite corner. Notice that the arrow grows from the first point as you drag.

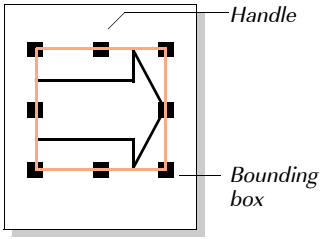
4 Release the mouse button when the arrow is the size that you want. The arrow will have a bounding box and handles at the corners and sides of the box when it is selected. Experiment with the arrow shape to create different sized arrows.

Note: You can also create an object shape by entering values in the X/Y and width/height fields in the Properties bar and then clicking the Create button. By default, the X/Y coordinates are set at 0,0.

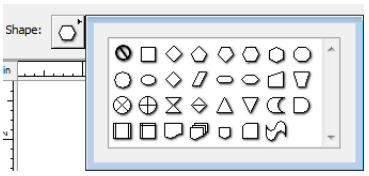
- **To constrain the proportions of the arrow:** Press the Shift key while dragging diagonally.



Drag from one corner to the opposite corner



A finished EasyShapes object has handles on its bounding box



To change EasyShapes

1 Select the object shape so the Shape icon appears in the Properties bar.

2 Click on the icon to open the Shape popup palette.

3 Select another object shape. The object shape changes immediately.

Drawing options

Modifier keys can assist you in drawing most objects. Remember that modifier keys may be combined (pressed at the same time).

Try drawing an oval, square, or line outward from the center:

- Press Ctrl+Shift at the same time as you drag the Oval, Rectangle, or Line or EasyShapes tool. This allows you to draw an object outward from the center and constrains its bounding box to a square.

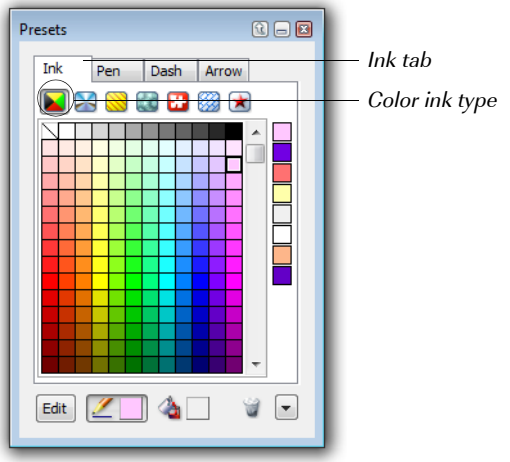
Inks

Inks may be either solid colors or multi-colored patterns that can be quickly applied to vector, text, and image objects.

Presets palette

✓ **Tip**
You can also open the Presets palette by choosing Window > Palettes > Presets.

The Presets palette contains the inks and other preset attributes that can be applied to an object. Open the Presets palette by pressing either the pen ink or fill ink icon in the Toolbox. The palette floats if it is dragged away from the Toolbox. To begin this example, click on the Ink tab and then the color ink type icon.



To apply inks

1 Using the techniques you learned earlier, draw a rectangle.

2 With the rectangle still selected, open the Presets palette.

3 When the Presets palette opens, select an ink type (color, gradient, hatch, pattern, texture, or symbol) and then click an ink cell to apply the ink you selected to the rectangle.

✓ **Tip**
You can also apply ink to an object that is not selected. Drag a tile onto the deselected object and release the mouse button.

To apply inks when the Presets palette is floating

1 Open the Presets palette and drag the palette away from the Toolbox to "float" it.

2 Select the rectangle.

3 Select an ink type and then click an ink cell to apply the ink to the rectangle.

4 Click a blank area of the document to deselect the rectangle.

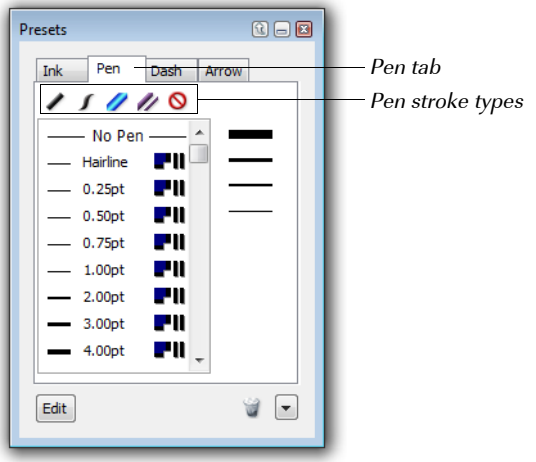
Strokes

Strokes are outline effects on vector objects; i.e., they affect what the border of the shape looks like. There are various types of stroke effects, all of which may be modified via the Presets palette.

Presets palette

✓ **Tip**
You can also open the Presets palette by choosing Window > Palettes > Presets.

The Presets palette is used to view and apply strokes to objects, select current strokes for new objects. Open the Presets palette by pressing the Stroke icon on the Toolbox.



Now that you have become familiar with inks and have learned how to apply them to Canvas objects, you can use a similar technique while working with strokes. A stroke can significantly enhance a Canvas design project.

A stroke can be applied using either of the two methods that are discussed in the next section.

To apply a stroke from the Toolbox

1 If the line that you created earlier is still available, select it. If not, simply draw a new one using the technique that was described in the previous section and select it.

2 With the line selected, open the Presets palette by clicking the Stroke icon in the Toolbox. Remember, the bounding box will appear around the object when it is selected.

3 With the object selected, scroll through the selection of pen stroke types that you can access via the Pens tab of the Presets palette.

4 Click a preset pen stroke to select it. Doing so will apply the stroke to the object.

To apply strokes when the Presets palette is floating

1 Open the Presets palette by clicking on the Stroke icon and drag it away to float the palette.

2 For this example, click on the Pen tab in the Presets palette.

3 Select the standard pen stroke type.

4 Use the scroll bars to view all of the available strokes and select one. Doing so applies the stroke to the selected object. Note that the thickness and endpoint settings of the stroke are visible in the palette.

5 Click a blank area of the document or hit the Esc key to deselect it.

✓ Tip
You can also drag and drop a stroke from the palette onto a line. It takes a little more precision to make sure you drop it right on the object.

You have now applied a stroke to an object. We will show you how to edit the stroke later in another section. Remember, you can dock the Presets palette by either dragging it to the Docking bar or by clicking on the Auto Dock button.

Setting current inks and strokes

In the previous exercises, you applied inks and strokes directly to objects. You can change the current ink and stroke when no objects are selected. Then, when you draw an object, Canvas applies the current inks and stroke to the new object.

To set the current pen or fill ink

1 Deselect all objects (in the Status bar at the bottom right of the Canvas screen, it should say, “No selection”).

2 Click the Pen ink or Fill ink icon and choose an ink type from the Presets palette. Notice that this changes the color of the icon.

3 Select the Oval tool and draw an oval. Canvas applies the current ink to the object.

Using snapping while drawing

Snapping constraints are a drawing aid that you can enable when moving and aligning objects as well as creating dimensions. These constraints are enabled in the Smart Mouse palette.

In Canvas, every object has points at which the cursor can snap for precise positioning or alignment; i.e., corners, end points, and center points. The Smart Mouse technology let you use these points as references while drawing. The Smart Mouse tool has 14 types of constraints for your use.

- **To open the Smart Mouse palette:** Choose Layout > Smart Mouse or Window > Palettes > Smart Mouse.

For more information about Smart Mouse and snap constraints, see “Using Smart Mouse for precise alignment,” page 19.10.

This section introduced you to some of the basic shapes that can be quickly created using the various drawing tools found in Canvas. As you can see, all of the lines ovals and rectangles can be drawn with precision and easily enhanced with color, texture, and other design effects. With a few clicks of the mouse you have used the EasyShapes tools to create custom designs. Feel free to go back and apply some of the strokes to any of these objects. Once you begin to experiment you will see that these Canvas tools can be easily used in any graphics project.

CHAPTER 4

DRAWING SIMPLE ILLUSTRATIONS

In this next lesson, you will learn how to create objects and drawings begining with only a blank Canvas document and your imagination. Follow through with these examples. We recomend that when you complete each section that you go back and experiment with some of your own ideas.

You will learn how to

- Use the basic Canvas drawing tools
- Use the alignment aids to help you draw
- Use some of the menu commands to edit objects

Creating illustration documents

✓ Tip
The first time you launch Canvas, Illustration is selected as the document type by default.

When creating drawings, especially if they will become technical or oversized drawings, you should begin with an Illustration document type. Any Canvas document can provide you with equally good results; however, an Illustration document is considered to be an excellent general purpose beginning for all types of illustration or graphic design project.

To create a new Illustration document

1 Choose File > New to open the New dialog box.

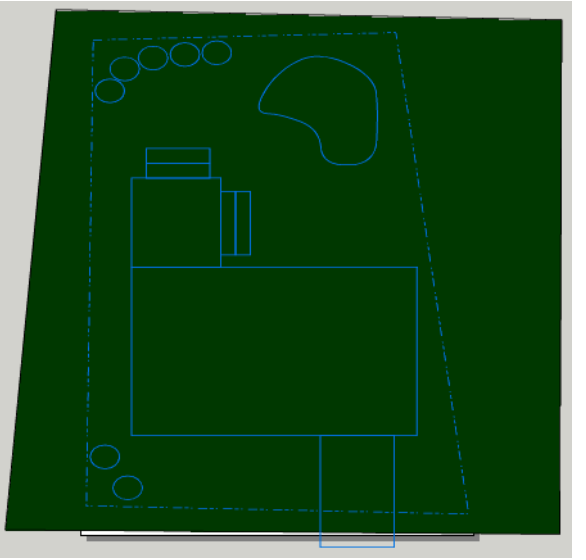
2 Select Illustration as the document type.

3 Click OK. Canvas creates a new, untitled Illustration document. Now you're ready to begin drawing.

Creating a site plan

In this tutorial, you'll use various illustration tools, attributes, as well as a library object to complete a 2D top plan view of a property line, house footprint, and some landscaping.

- **To begin the tutorial:** Open the file 2Dsiteplan.cvx located in the Tutorial folder.



To use snapping constraints

1 Choose Layout > Smart Mouse.

2 Enable Snap to object bounds so your cursor snaps to the paths when you draw. Also, turn on Show Snap Indicators in the Smart Mouse Settings.

3 Turn on Select Across Layers in the Properties bar.

To create the property line

1 Select the Polygon tool and begin tracing the dashed property line path.

2 Double-click the cursor at the starting point to close the polygon.

3 With the polygon selected, apply no fill ink and a dashed pen with the Toolbox.

To outline the house footprint

1 Select the Rectangle tool.

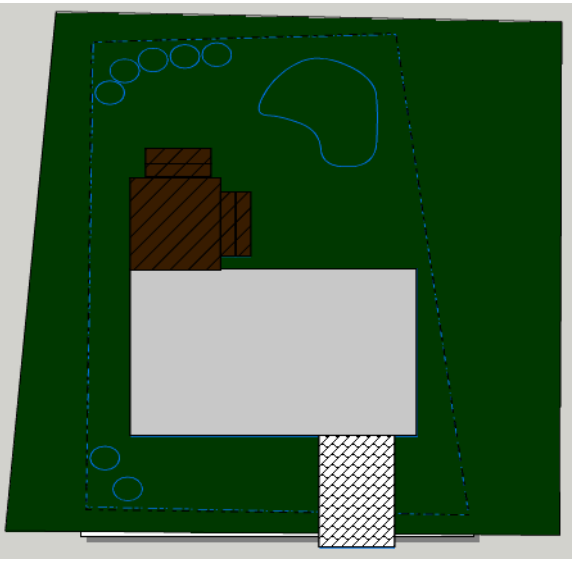
2 Begin tracing the rectangles that compose the house, driveway as well as the exterior patio and stairs.

3 Select the driveway rectangle and apply a pattern fill ink.

4 Choose Object > Arrange > Shuffle Down to send the driveway behind the property line.

5 Select the house rectangle and apply a gray fill ink.

6 Select the patio and stair rectangles and apply a hatch fill ink.



To create the backyard pond

1 Select the Smooth Polygon tool.

2 Begin tracing the pond in the backyard.

3 Double-click the cursor at the starting point to close the polygon.

4 Apply a blue fill ink.

To add landscaping elements

1 Choose Window > Palettes > Symbol Library.

2 Open the palette menu and choose Load Library Set.

3 Navigate to the Tutorial folder and select landscaping.mcr.



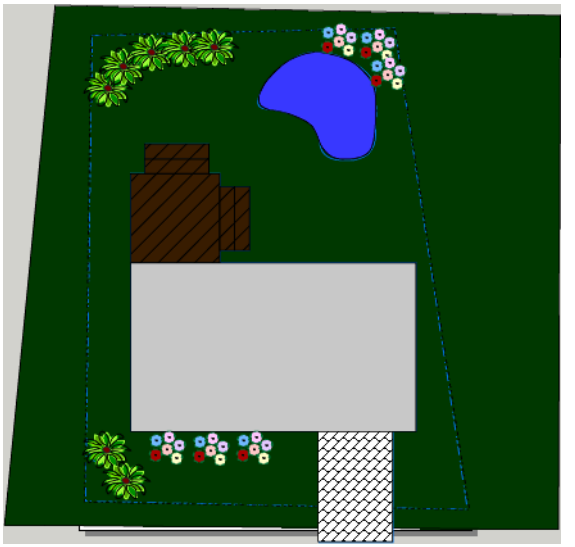
4 Select the tree library object in the palette. Notice how the cursor changes.

5 Drag the object into the drawing and place it over an oval along the property line in the front and back. The tree library object already has fill and pen inks.

6 Repeat this until each oval is covered by a tree object.

7 Then select the flowers library object and place 3 bunches of flowers in the top right corner beside the pond.

8 Place more bunches of flowers along the front of the house.



Now you have a completed top plan view of a site plan, including some landscaping.

Canvas in the office

A flowchart is a document that contains symbols, lines, and other objects that visually communicate the "flow" or process whereby a problem is solved or a need is fullfilled. The flowchart can rapidly illustrate, to all involved in a complex project or procedure, how to smoothly identify and handle issues, delegate responsibility and prioritize limited assets.

Canvas contains all of the tools that you will need to quickly create, edit, and distribute a flowchart to everyone in your workgroup. Remember, as with any Canvas document, a flowchart can be printed as a "hard-copy," for use in a manual or other document or it can be electronically disseminated as a PDF or HTML document. After you create a flowchart, you can learn how to do this by reading the section "Designing for the Web," page 35.1. The ability for you to distribute mission-critial information quickly to co-workers will significantly reduce workflow issues.

Creating flowcharts

In this tutorial, you'll create a flowchart that explains how to obtain money from an automated teller machine. Apply these techniques to organization charts, seating diagrams, and other similar drawings.

To create a process flowchart

1 Choose File > New.

2 Select Illustration for the Type of Document and Legal for the Paper.

3 Click OK.

4 Open the Rectangle tools palette and lock it since you will need to use it again.



5 Select the EasyShapes tool. From the pop-up palette, select the Oval shape and drag the tool at the top of the page to create an oval shape.

6 Select the oval object and type "Go to bank or location that has automated teller machine" and then press Esc. The oval object should still be selected.

7 Choose Text > Justification > Center and Text > Justification > Vertical Center to properly align the text.



8 Select the Rectangle tool and create a rectangle just below the oval shape.

9 Select the rectangle and type "Insert card into machine" and then press Esc.

10 Select the rectangle and choose Edit > Duplicate.

11 Place the duplicate rectangle just below and type “Enter account information and PIN” in the rectangle.

12 Select the EasyShapes tool again. From the pop-up palette, select the diamond shape and create a diamond just below the second rectangle.

13 With the diamond shape still selected, type “PIN correct?.” Press Esc. The diamond object should still be selected.

14 Choose Text > Justification > Center and Text > Justification > Vertical Center to properly align the text.

15 Create two rectangles below the diamond.

16 In the first rectangle, type “Make withdrawal request”. Align the text vertically and horizontally center.

17 In the second rectangle, type “Collect funds from machine”. Again, align the text vertically and horizontally center.

18 Create an oval at the bottom and type “Remove card from machine”. Once more, align the text vertically and horizontally center.

Next you need to connect the flowchart elements. To do this, you can simply draw a line using the techniques described in a previous section; however, Canvas contains a more elegant solution — we named it for what it does — Smart Lines. These tools are in the Line tools palette.



19 Select the Basic Smart Line tool and create lines between the objects to indicate the flow from top to bottom.

20 Select each line and add a down pointing arrowhead from the Presets palette.



21 Select the Kinked Smart Line tool and create a line that extends from the right of the diamond object to the previous rectangle.

22 Type “No” along that line to indicate that the pin entered was incorrect.

23 Select the line below the diamond shape and type “Yes” to indicate that the pin entered was correct and the process can proceed.

24 Open the file flowchart.cvx to compare your flowchart.

Now that you have completed this basic flowchart, we suggest that you take a minute and experiment with some of the techniques – adding color, strokes, and other effects – that you became familiar with in previous sections.

Maintaining consistency in illustrations

If you need to recreate the same graphic over and over within a document or over a series of documents, use Canvas' Symbol Library to store your dynamic library objects.

Dynamic objects are special types of graphics in Canvas that help you create illustrations quickly, uniformly, and precisely. Dynamic objects are especially useful for technical drawings, diagrams, and other frequently used illustrations. An electrical engineer can create dynamic objects for gates, resistors, and other circuit components. Project managers can build organizational charts with dynamic objects for shadowed text boxes. Dynamic library objects can be created from vector, text, or image objects. You can even use a mixture of object types.

You can create, delete, and modify individual dynamic objects, and also save them as dynamic object sets. Sets may be stored for use in special projects and loaded as you need them.

- **To open the Symbol Library:** Choose Window > Palettes > Symbol Library.

Using dynamic objects in interior design

The goal of this tutorial is to open an existing file, load a library object set, and add predesigned dynamic objects to a drawing.

1 Choose File > Open and navigate to the Tutorial folder.

2 Select the file insertingsymbols.cvx and click Open. This drawing consists of a layout of a residential washroom.

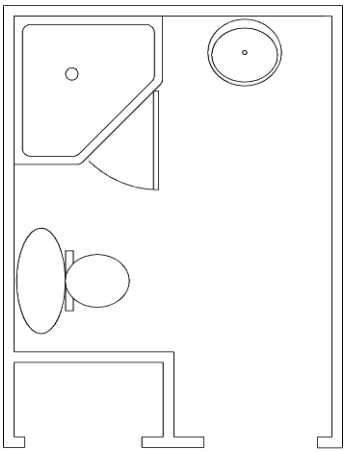
3 Choose Window > Palettes > Symbol Library palette.

4 Open the palette menu and navigate to the Tutorial folder.



5 Select the file washroom.mcr. This set consists of two objects that are to be added to the drawing.

6 Notice that there are two spots on the drawing indicated with an X.



7 Select the sink object in the palette. The cursor changes to the Place pointer.

8 Place the sink on the spot in the upper right of the drawing.

9 Select the lavatory object in the palette and place the object in the left spot marked with an X.

10 Select the group of objects that compose the shower in the upper left corner and choose Object > Group.

11 Drag the group to the Presets tab of the Symbol Library palette.

12 Give "shower" as a name for the dynamic object.

13 Delete the shower from the drawing.

14 Select the “shower” object in the palette and enable Create Dynamic Library Item at the bottom of the palette.

15 Place the dynamic object once more in the drawing. Notice how the object is labelled Library in the Status bar.

16 Select the Rounded Rectangle tool and create a rounded rectangle that is almost as wide as the shower and just a bit longer.

17 With the rounded rectangle selected, choose Effects > Offset Path to create a another rounded rectangle within the first.

18 Enter a negative value with one copy. The resulting objects should look like a tub with a thin edge around it.

19 Select the Oval tool and create a small circle to represent the drain in the tub.

20 Select the 3 objects that compose the tub and choose Object > Group.

21 Drag the tub group to the Symbol Library palette and name it “shower” when prompted. A warning dialog box appears indicating that there’s already a library object with that name. Click OK to replace to the current library object.

22 Notice how the shower in the drawing is updated with the tub group. The updated library object will change throughout the entire document.

You can see how Dynamic objects make it easy to assemble drawings from pre-drawn components. But the real power of a Dynamic

object is the fact that each placed Dynamic object is “linked” to the palette.

Dimensioning objects

When you add dimensions to a drawing, you indicate the true measurements of objects or distances. Canvas Dimensioning tools can measure horizontal, vertical, oblique and perpendicular distances; measure diameter, radius, angle, area, and perimeter; and mark the centers of arcs and ovals.

The dimensioning tools are grouped in a single palette (see “Tool palettes,” page 9.6). The Linear, Chain, and Baseline tools allow you to create horizontal, vertical, or oblique dimensions, depending on the position of the cursor upon creation.

To add dimensions to a drawing

1 Choose File > Open and navigate to the Tutorial folder.

2 Select the file bathtub.cvx and click Open.

The drawing on the left already shows the dimensions to be added to the drawing on the right.



3 Select the Linear Dimensioning tool. Use this tool to measure the length of the bathtub.

4 Click to create the starting point towards the top and then define the end point towards the bottom. Once the end point is created, move the away from the object to form the dimension object.



5 Select the Area Dimension tool.

6 Click inside the bathtub to measure the area of the object.



7 Select the Diameter Dimensioning tool. Use this tool measure the diameter of the inner circle that represents the drain of the bathtub.

8 Click the cursor on the circle and move the cursor away to create the dimension object.



9 Select the Radius Dimensioning tool. Use this tool to measure the radius of the outer circle of the bathtub drain.

10 Click the cursor on the circle and move the cursor away to create the dimension object.



11 Select the Angle Dimensioning tool. Use this tool to measure the inner angle of the bathtub corners.

12 Click the cursor on the first line when prompted.

13 Click the second line to anchor the dimension.

14 Move the cursor so the dimension object measures the inner angle of the corner.

Dimensions are an essential part of precision drawing. Practice creating different shapes and then using the various Dimensioning tools to indicate their measurements. Also, use the settings in the Properties bar to change units, scale, witness lines, secondary units, etc.

CHAPTER 5

INTRODUCTION TO IMAGE EDITING

Canvas has all the features of a dedicated image-editing program. You can create image compositions, retouch photos, color correct scanned images, or paint your own images. In this lesson, you'll learn

- basic image terminology
- how to remove the background from an image
- how to apply filters and adjustments
- how to apply transparency effects
- how to retouch an image

Basic image terminology

Paint objects, also called image, bitmap, or raster objects, are composed of small squares called pixels.

Every paint object has a specific "resolution," defined as the number of pixels per inch (ppi). In general, an image with a high resolution has more detail, but will also have a large file size. Likewise, a low-resolution image contains less data, so it has lower quality but also a smaller file size.

As you get more experienced with images, you'll learn what resolution is best suited to your purposes.

Choosing a resolution

When deciding on a resolution for paint objects, it is important to know the medium in which your final project will be displayed.

- For Web work or for displaying images only on screen, 72 ppi is the standard.
- To achieve good results for printing, 150 to 300 ppi is standard (depending on halftone screen frequency). File sizes at high resolution can be quite large. You might find that lower resolution is adequate for laser or inkjet output.
- Very high resolution (above 300 ppi) is needed only for images such as fine line art that will be output to film for commercial printing.

Defining file types

One of the most confusing things about working with paint objects is the great variety of file types. The most common image file types are GIF, JPEG, TIFF, PICT, and BMP, as well as EPS (which can contain both paint and vector objects).

- **GIF and JPEG:** Compressed formats that are used heavily on the Internet. The compression levels allow these images to achieve small file sizes and as a result they download quickly over the Internet. However, file size compression comes at the expense of image and color integrity.

- **TIFF, PICT, BMP and EPS:** These files have a lower level or no amount of compression. Information for every pixel is recorded, and this can result in large files. Because of the higher resolution and detail needed for printing, these formats are often used for projects that will eventually be printed commercially.

There are a number of ways in Canvas to place an image file in your document. In addition to the File > Place command, there is also the Image > Import command.

Finally, you can directly scan into Canvas using any TWAIN compatible scanner, or a scanner with a Photoshop™ compatible acquire module.

Removing the background from an image

If you're editing an image and need to remove the background entirely, or just a portion, there are two methods that you can use along with Canvas' pixel selection tools.

Note: Before continuing with these lessons, you may want to refer to the section "Painting & Image Editing" to learn about the Painting tools, filters, adjustments, image modes, etc.

No fill ink

In this first method, no ink is selected for the fill ink.

1 Choose File > Place and navigate to the Tutorial folder.

2 Select background1.jpg.

3 Select no ink for the fill ink in the Toolbox.

4 Double-click the image to enter edit mode.

5 Select the Wand tool and click the background of the image.

6 Press Delete to remove the background.

7 Move the image around the drawing area to see its transparency.

Visibility mask

If an image has a visibility mask, you can an area of an image to create transparency regardless of the fill ink.

1 Choose File > Place and navigate to the Tutorial folder.

2 Select background2.jpg.

3 Select the image and choose Image > Add Visibility Mask.

4 Double-click the image to enter edit mode.

5 Select the Wand tool and click the sky portion of the image.

6 Press Delete to remove the sky.

7 Again, move the image around the drawing area to see its transparency.

Aging a photo

In this lesson, you'll see how to use Canvas image adjustments and filters to give a vintage appearance to a photo.



1 Choose File > Place and navigate to the Tutorial folder.

2 Select aging.jpg.

The first step in aging a photo is by decreasing the saturation and lightness.

3 Select the image and choose Image > Adjustment > Hue/Saturation. You can also open the Adjust menu in the Properties bar and select Hue/Saturation.

4 Lower the saturation to -100 by moving the slider to the left. The image should appear desaturated (grayscale).

5 Lower the lighting to approximately -10.

6 Press OK.



7 Now choose Image > Filter > Noise > Add Noise or open the Filter menu in the Properties bar and select Noise > Add Noise. Noise is added to give an image a grainy appearance.

8 Move the slider to the right (approximately 10) and enable Gaussian and Monochromatic.

9 Then choose File > Adjustment > Color Balance. Normally the Red and Yellow levels need to be increased for the Midtones.



Note that you could also use SpriteEffects to apply these filters and adjustments to an image without permanently changing the image (see "Spriteffects," page 33.1).

Creating a vignette

In this lesson, you'll learn how to use the Elliptical Transparency tool to make a vignette from a photograph. A vignette is a non-rectangular image, usually with a soft edge.



1 Choose File > Place and navigate to the Tutorial folder.

2 Select vignette.jpg.

3 Select the Elliptical Transparency tool. If the image isn't already selected, you'll see the Select Object prompt.

4 Drag the crosshair from the top left corner of the image to the bottom right corner. Vector mask editing handles appear on the image.

5 Drag the handles to adjust the position and size of the vector mask.

6 Add a node (a small circle) by right-clicking on the horizontal vector which joins the inner box (the area of 100% opacity) with the object's bounding box. An opacity slider appears, which can be adjusted from 100 to 0% opacity depending on the desired result.

When you finish adjusting the mask, press Esc to end edit mode. At any time, you can adjust the mask by clicking the Elliptical Transparency tool on the image. The vector mask editing handles appear.

Note: Vignettes can also be created by using the Transparency palette (see "Using the Transparency palette," page 34.1).

Benefits of transparency masks

With transparency masking in Canvas, the original images are not permanently changed. The original pixels of an image can be easily restored if you change your mind. You can remove the mask from the image.

To restore the original image

1 Select the image.

2 Choose Object > SpriteLayers > Detach Mask. The mask detaches itself from the image and is on top of the image.

3 The original image is now restored. Use the Save As command to save your work, or close the document without saving the changes.

Retouching an image



Canvas has a number of advanced photo-editing features that allow you to manipulate images. In the next exercise, you'll use the Rubber Stamp tool to retouch an image of a landscape.

1 Choose File > Place and navigate to the Tutorial folder.

2 Select sky.jpg.



In this image, you're going to add more clouds to the sky with the Rubber Stamp tool. This tool takes an area of pixels starting at a reference point you select, and replicates the pixels around that point in another location you select. The Rubber Stamp tool ensures color matching and replicates subtle textures and gradients that exist in an image. This is referred to as *cloning*.

To clone pixels with the Rubber Stamp tool

1 With the Selection tool, double-click the paint object to place it in edit mode.

2 Select the Rubber Stamp tool.

3 Select a small soft-edge brush from the pop-up Brushes palette in the Properties bar.

4 Alt+click an area in the clouds to set the reference point for cloning.



Original landscape *Setting the reference point*

5 Drag the Rubber Stamp tool to clone the area around the reference point. Continue dragging until you have copied enough of the area.

6 Press Esc to end edit mode.

7 Use the Zoom controls to set magnification to 100%.



Final image with cloned clouds

Note: The Rubber Stamp tool can remove unwanted scratches, stains, or other imperfections found in a photograph. This tool can also be used to duplicate objects from within a paint object (see "Copying areas with the Rubber Stamp tool," page 22.9).

CHAPTER 6

INTRODUCTION TO SPRITEEFFECTS

SpriteEffects technology was introduced to allow for the easy creation and placement of fully-editable transparency effects to text, images, and vector objects within Canvas. Remember all SpriteEffects can be edited and reapplied at will at any time during the design process.

Using SpriteEffects

SpriteEffects breaks down the barrier between traditional object-oriented editing and image-based effects.

SpriteEffects also allows you to create *lenses*, which are powerful containers for effects. You can use lenses to create magnifying glasses and viewing frames in documents.

There are two ways to use SpriteEffects:

- Apply effects directly to objects.
- Apply effects to lens objects.

Applying SpriteEffects



For this lesson, open the "SpriteFX" file.

To apply effects using the SpriteEffects menu

1 Select the cloud located above and to the right of the bicyclist.

2 Apply a Gaussian Blur effect by choosing Object > SpriteEffects > Add Effect > Blur > Gaussian Blur. The Gaussian Blur dialog box will open.

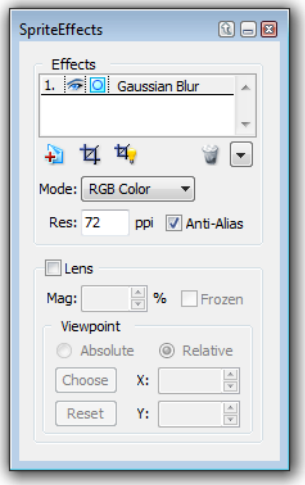
3 Select a Radius of 4 by either dragging the slider to the right until you've reached "4" or by entering the number directly into the box. The blur effect has been applied to the cloud.



Before *After*

To apply SpriteEffects using the palette

You'll apply the same effect to the other cloud using the SpriteEffects palette.



1 Open the SpriteEffects palette by choosing Object > SpriteEffects > Show Palette (The SpriteEffects palette may be opened by choosing Window > Palettes as well)

2 Select the cloud above and to the left of the bicyclist.

3 Click the New Filter Effect button.

4 Choose Blur > Gaussian Blur from the drop-down menu and click OK.

5 Note the Radius has defaulted to 4. Enter a different value if you wish. Click OK to accept.

Note: You can also access the SpriteEffects menu and palette in the Properties bar.

To apply multiple SpriteEffects

In this example, you'll apply several affects using the SpriteEffects palette.

1 Select the ground shape under the bicyclist

2 Click the New Filter Effect button

3 Choose Blur > Gaussian Blur and click OK.

4 Select a radius of 5. Click OK to accept.

5 Click the New Filter Effect button

6 Choose Noise > Add Noise and click OK

7 Check the preview checkbox.

8 Using the slider, set the amount of noise to 30. Select the "Gaussian" radio button, and check "Monochromatic". Click OK to accept these settings.

Modifying SpriteEffects

You may edit each effect or change the order in which the SpriteEffects are listed in the SpriteEffects palette.

The SpriteEffects palette also allows you to

- Change the settings of each effect
- Change the size of the effect area
- Add or remove an effect that has been assigned to an object
- Show or hide any effect that has been assigned to an object

Follow along in the next lesson and experience the powerful capabilities of SpriteEffects for yourself.

To change the order of SpriteEffects

1 Select the ground shape under the bicyclist to which you applied multiple SpriteEffects in the previous lesson.

2 In the SpriteEffects palette, select and drag the Gaussian Blur effect below the Add Noise effect. Doing so alters the object so that Canvas applies the Add Noise effect prior to the Gaussian Blur effect.

3 Select and drag the Add Noise effect so that it appears after the Gaussian Blur effect to restore your original settings.

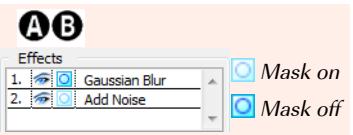
To change the settings of SpriteEffects

1 Double-click the Add Noise effect to open the Add Noise settings.

2 Change the Noise Amount to 50 and deselect the “Monochromatic” checkbox.

3 Click OK.

To use selection masks with SpriteEffects



Effects list

A Show effect

B Mask

An icon to the left of each effect indicates the state of the selection mask for this effect. Click the mask icon to toggle the mask on and off .

- When the selection mask is on, the effect is limited to the vector graphic.
- When the selection mask is off, the effect spreads throughout the entire bounding box area.

To show and hide SpriteEffects

1 Click the show effect icon to the left of the Gaussian Blur effect. The icon disappears, hiding the SpriteEffects.

2 Click the blank space where the icon was, causing it to reappear and showing the SpriteEffects once more.

Lens effects



Vector object used as a frozen lens

Another way to use SpriteEffects is to create a *lens* object from a vector or text object. Doing this will apply an effect to a lens. The effects appear on objects that are viewed through the lens. Lenses can also magnify objects and view objects in other locations. If you move the *viewpoint* of a lens, whatever is behind the viewpoint appears in the lens. If you move the lens, the viewpoint can remain fixed or move with the lens.

To create a lens

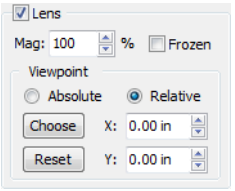
You can create a lens from any object (except another lens). If you want to preserve an object, make a copy and convert the copy to a lens. Fill inks are completely removed when vector or text objects are converted to lenses.

1 Open the "Lens" file.

2 If the Toolbox is not already displayed, choose Window > Palettes > Show Toolbox

3 Select the Oval tool and draw a circle on the right side of the spiral staircase.

4 Choose Object > Convert to Lens. The object becomes a lens and remains selected.



The stroke on a lens is not affected by the effects applied to the lens. The default lens effect is normal (100%) magnification.

Other ways to create lenses Convert a selected object to a lens by selecting the Lens option in the SpriteEffects palette or clicking the Make Lens button in the Properties bar.

To set the lens magnification

1 Open the SpriteEffects palette if not already open.

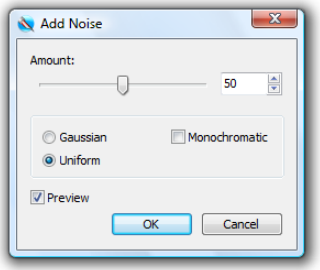
2 In the SpriteEffects palette, change the lens magnification to 150% or higher.

To change the viewpoint setting

1 Drag the lens around the document, seeing how the view of the lens changes as it moves.

2 Select the Absolute radio button in the Lens area.

3 Drag the lens around the document once more. The image within the lens has now fixed on the original position of the lens.



To add other SpriteEffects to lenses

1 From the SpriteEffects palette, click the New Filter Effect button

2 Choose Noise > Add Noise, and click OK.

3 Select a Noise Amount of 50. Make sure “Uniform” is selected, Monochromatic is deselected. Click OK.

CHAPTER 7

PAGE LAYOUT & TYPOGRAPHY

Canvas contains all the text editing features that you will need to create a professional-level page layout project. Auto Correct, an interactive spell checker, and complete control of document and paragraph formatting are all easily accessed via the text settings in the Properties bar or Type palette. Your Canvas document can be enhanced with custom multiple column sections, master pages, and shared layers. Also illustrations or images that are placed inside a Canvas document may be set to repel text so that it smoothly flows around placed objects which create a visually appealing page design.

Creating a brochure

This tutorial is designed to demonstrate how to create a brochure using page layout and typography features. You will work with an Illustration document.

In this tutorial, you will learn about attributes, library object sets, creating footers, placing a graphic, column sections and guides, and exporting the document to PDF. You will also use some of the concepts learned in the other tutorials.

Choose File > Open and navigate to the Canvas Tutorial folder. Select brochure.cvx and click Open.

At the bottom of the page is a partially completed illustration. You will use the Presets palette and Symbol Library palette to make the illustration appear like the completed illustration to the left. You will also add a second page and other graphical elements.

Setting up the document

Before you begin this part of the tutorial, you need to become familiar with the setup of this document. The brochure currently has one page; however you will add another.

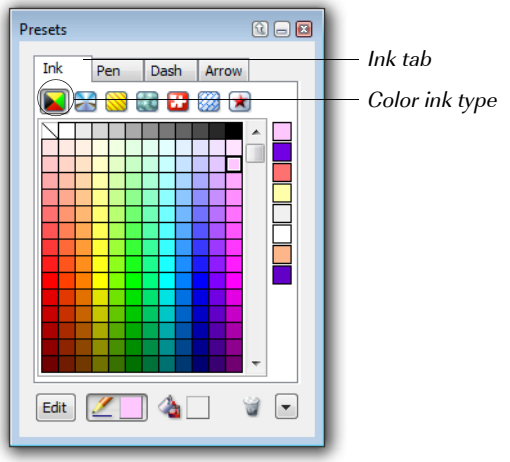
With nothing selected in the document, check the document setup in the Properties bar.

- The Units pop-up menu shows Feet & Inches.
- The publication size is US Letter.

- The page orientation is set to portrait.
- The drawing scale is set to ¼”=1’.

Applying attributes

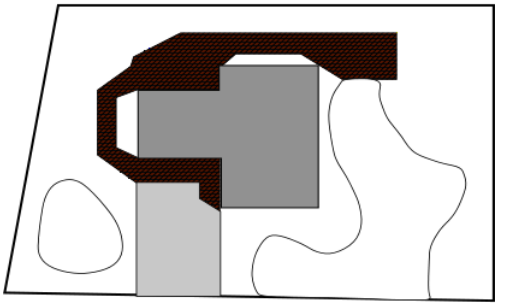
Open the Presets palette by pressing the fill ink icon in the Toolbox. You can also choose Window > Palettes > Presets to access this palette. Click on the Ink tab and then the color ink type icon.



To apply color inks to the site plan

1 Select the polygon that represents the house and apply a gray fill ink.

2 Then select the polygon that represents the driveway and apply a lighter gray fill ink.

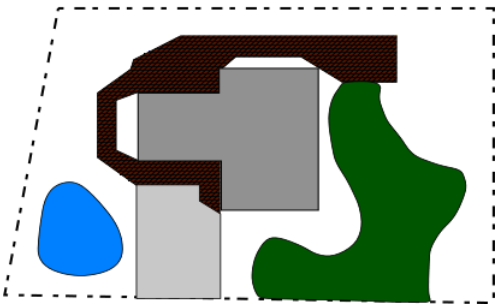


3 Select the polygon in the lower left that represents a pond and apply a blue fill ink.

4 Select the polygon on the right and apply a green fill ink so it appears to be grass.

5 Finally select the outer polygon that represents the property line.

6 Click the dash icon in the Toolbox and select a dash-dot style for the line.



Working with the Symbol Library palette

In a previous tutorial, you learned how to use the Symbol Library palette to add dynamic objects to a drawing. In this step, you will load a library object set of plant objects and place them in the drawing.

To load a library object set

1 Choose Window > Palettes > Symbol Library.

2 Open the palette menu and select Load Library Object Set.

3 Navigate to the Tutorial folder.

4 Select brochure.mcr and click Open.

To place plant symbols

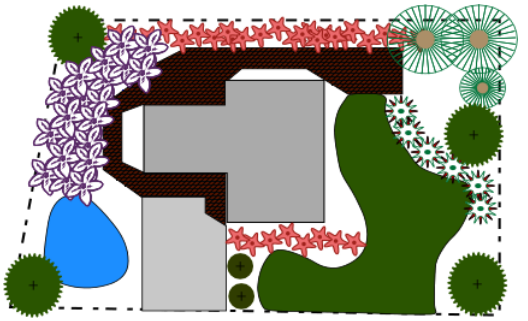
Using the completed drawing as a guide, begin placing plants.

1 Click a plant object in the palette.

2 Move the cursor into the drawing area. Notice how the Selection tool becomes the place cursor.

3 Click the cursor to place the plants.

Note: The plant objects are grouped vector objects that can be ungrouped and then modified.



Creating a headline

At the top of the first page, you will create a headline for the brochure.

1 Select the Text Object tool and click at the intersection of the top left guides.

2 Drag down about 1 inch and then over to the right vertical guide and then click to complete the text object.

3 Double-click the text object to enter text edit mode.

4 Type “Smith Landscaping”.

5 Press Enter and then type “Nature by Design” for the second headline.

6 Select first line and enter 50 for the font size in the Properties bar.

7 Click the Align Left button.

8 Select the second line of text and enter 36 for the font size in the Properties bar.

9 Click the Align Right button.

Note: You can use any font type and adjust the font size if the font exceeds the lines.

10 Select the Section tool and click about ¼” on the inside of the left vertical guide below the second headline.

11 Drag the cursor downward and then toward the right vertical.

12 Click the crosshair to complete the columns. In the Column Guides dialog box, click two columns.

13 Click the Text tool in the left column and choose File > Place.

14 Navigate to the Tutorial folder and select the Text.txt file.

15 Click Place and watch the text flow across the columns.

Adding drop caps

Drop caps can help add style to a document. Canvas' drop cap settings are located on the Indent tab of the Type palette.

1 Double-click the Text tool to open the Type palette. Click the Indent tab.

2 Select the left column of text and enable 3 Lines and 1 Character for the drop cap.



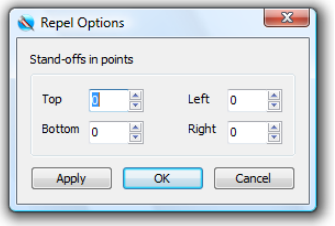
Repelling text

Text can be set to "run" around objects with the Repel feature. Define the amount of space between an object and the text it repels.

An object with a repel setting repels all text; you can move the object and it will repel text wherever you place the object in the layout.

You can apply repel settings to objects before any text has been placed in a document. You can even apply a repel setting to a text object to make it repel other text.

1 Open the Symbol Library palette and load brochure.mcr if necessary.

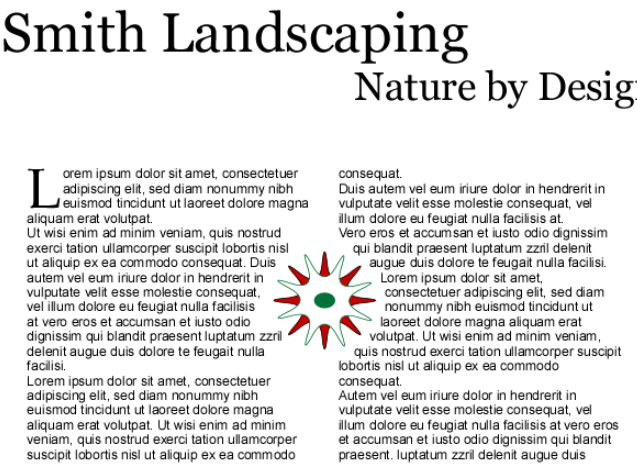


2 Click one of the singular plant objects.

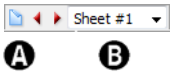
3 Click the place cursor around the middle of the two text columns.

4 Select the plant object and choose Text > Wrap > Repel Options.

5 Set the repelling distance to 3 points all the way around and click OK.



Adding another page



A New page icon
B Page menu

The page controls can be used to add pages or navigate through a document much like the Document Layout palette.

To add pages

1 Click on the New page icon and the Insert dialog box opens.

2 Enter 1 for the number of pages and choose to insert the new page after the current page. Sheet #2 appears automatcially.

Working with footers

In Canvas, headers and footers are special text objects that may contain page numbers, total page count, as well as current date and time. In this brochure, you will add a footer to Sheet #2.

To add a footer to a sheet

1 Choose Text > Insert > Footer. Canvas inserts a footer object at the bottom of the sheet. The insertion point appears in the footer. You may have to increase the zoom to view the insertion point.

2 In the footer, type the word "1234 ABC Street, Miami, FL, 33126 305-555-5678." Remember that the text will be entered using the default font and size.

3 Press Esc to end edit mode.

4 Using the text settings in the Properties bar, change the font to Arial and increase the size to 18, if necessary.

5 With the Selection tool, resize the text object so that it sits on top of the bottom horizontal guide and between both vertical guides.

6 Click the Center Align (Horizontally) button in the Properties bar.

7 With the Text tool, select the space between the zip code and the phone number.

8 Choose Text > Insert > Em Space. The Insert submenu contains various text items that you can add to text, such as bullets and common symbols.

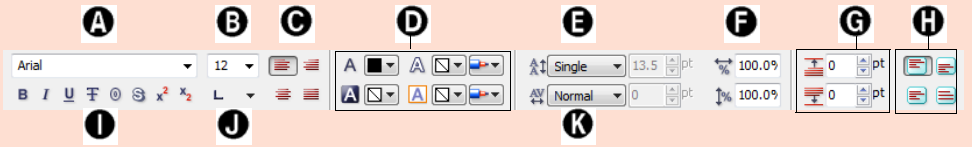
9 Press Esc to select the text object.

10 Using the text ink options in the Properties bar, select green for the background ink and white for the text fill.

11 Select black for the text outline ink and give the text a 0.25 pt stroke.

✓ Tip
If the Properties bar is not displayed, the text settings will not be visible. Make sure the Properties bar is displayed by choosing Window > Show Properties Bar.

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Text formatting options

A Font. Select one from the menu. The font applies to selected text objects, highlighted text, or the next text you type.

B Size. Select a size or enter one and press Enter. The size applies to selected text objects, highlighted text, or the next text you type.

C Horizontal alignment. Select left, center, right, or justify.

D Text attributes. Use the pop-up palettes to apply a text fill ink, text pen ink, background ink, and text frame ink. For the text stroke and frame stroke, you can also assign a pen width.

E Leading. Select an option or enter a value and press Enter.

F Scaling. Specify percentages (horizontal & vertical) by which you want to scale the current type size.

G Space. Insert spacing before or after a paragraph by entering values in the fields.

H Vertical alignment. Select top, bottom, center, or justify.

I Text styles. Click buttons to assign standard text styles.

J Tab. Select left, right, center, decimal, or comma from the menu and then click in the ruler to set the tab.

K Kerning. Select an option from the menu or enter a value and press Enter.

Placing graphics

The Place command is used to insert images from other documents into your current working document. You will add some images to the second page.

✓ **Tip**
If it does not appear in the list, make sure that "All Documents" or "All Files" is selected in the Files of Type menu respectively.

1 Choose File > Place to open the Place dialog box.

2 In the Tutorial folder, locate the image named flowers1. jpg.

3 Select the image and click Place. The Place pointer appears. The Place pointer sets the upper-left corner of the placed file.

4 Position the Place pointer in the top left corner. Canvas will automatically place the graphic.

5 Select the image and change its resolution to 300 ppi in the Properties bar. The image should resize considerably. If necessary, move it back towards the upper left corner of the sheet.

6 Repeat the same for images flowers2.jpg and flowers3.jpg. One image can be placed at the lower left corner and the other in the middle of the right.

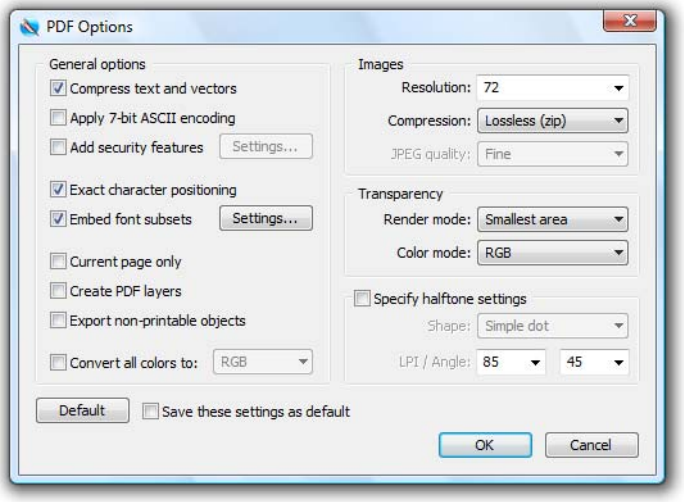
7 For a visual element, add a plant object from the Symbol Library palette to a white space between the images.



Next, you can learn about exporting to PDF; however, you should save your document first as a Canvas document so you can always edit the content. Then you can save as or export to another format.

Exporting to PDF

After you have completed the brochure, it is time to export it to PDF. Choose File > Save As to open the Save As dialog box. Select PDF - Acrobat files from the Save as type menu.



In the PDF Options dialog box, enable Exact character positioning and Embed font subsets. In the Images section, set the Resolution to 300 and Compression to Lossless. Click OK to export the brochure to PDF. You can even use this brochure for print purposes.

Congratulations! You have now completed the Page Layout & Typography section of the tutorial.

DOCUMENTS & SETUP

CHAPTER 8

DOCUMENT BASICS

Canvas documents are the containers for your work. You can create and save vector drawings, text, raster images and effects in Illustration, Publication, Presentation and Animation documents.

This chapter describes the basics of working with Canvas documents, including how to open, save, view, and print them.

Opening Canvas documents

Use the Open command to open Canvas documents. The general procedure is the same for opening Canvas documents and any other type of file that Canvas supports.

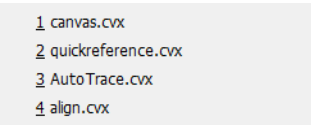
To open a file

1 Choose File > Open. The Open dialog box appears.

2 Select a file format to display one type of file in the current folder.

3 Select the file to open. Canvas displays a preview if the selected document contains a preview.

4 Click Open.



Documents opened recently are listed in the File menu.

- **To open a document you worked with recently:** Choose the document name from the list of recently opened documents in the File menu.
- **To start Canvas and open a document simultaneously:** Double-click a Canvas document icon in a folder or directory on your system. The program starts and the document opens.

Options for opening Canvas files

When you choose Open, a directory dialog box lets you select a file in the scroll list and see a preview.

You can select "Show All Files" to list all the files in a folder. This is different than Selecting "All" in the File Format pop-up menu, which lists all files that Canvas can open.

If you need additional help working with files, folders, and directories, refer to your Windows documentation.

You can open more than one document at a time in Canvas. When you open a document, Canvas loads the document into your system's memory. You need to have enough memory available to hold the document's contents. Documents that contain many complex objects or large high-resolution images require more memory than simple documents.

When you work with a document, changes you make to the document are not saved until you use the Save or Save As commands.

Substituting fonts when opening documents

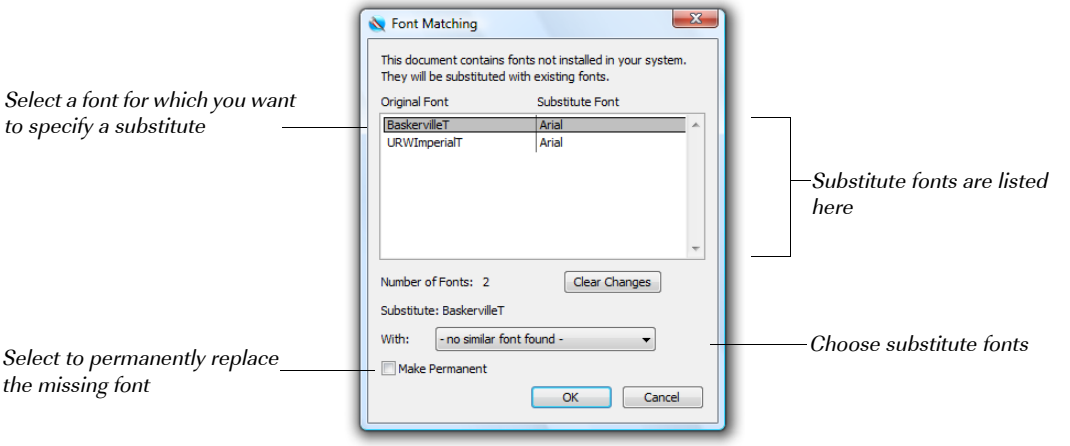
If a document you open uses fonts that aren't available on your system, Canvas displays a dialog box before opening the document. Use the dialog box to review which fonts are required by the document and to select substitute fonts, or you can let Canvas select substitutes.

1 Select a font listed under Original Font, or Shift-click to select multiple fonts. This column lists fonts that are specified in the document but are not available.

2 Choose a substitute font in the "With" pop-up menu. The name of the font appears in the list under Substitute Font. Canvas displays the font name in its corresponding typeface so you can preview the font substitution.

3 Select the checkbox to permanently replace the missing fonts with the fonts you choose in this dialog box.

4 After you select substitutes for the missing fonts, click OK to open the document. To cancel the changes, click Clear Changes to let Canvas choose a substitute and open the document.



Placing documents

Use the Place command to incorporate a document stored on disk into an open Canvas document. With the Place command, you can insert a Canvas document, an image, or a non-Canvas illustration document; e.g., you can place a document containing your company logo within a document in which you are preparing a sales brochure.

The Place command lets you visually set the location and dimensions of the incorporated document.

When placing Canvas documents, you can control which layers, pages, or slides to place, and whether to place them on the current layer, page, or slide, or on new ones, depending on the document type (Illustration, Publication, Animation, or Presentation).

The Place command is are available when a Canvas document is open.

To place a file in an open Canvas document

1 Choose File > Place. The Place dialog box appears.

2 Select the file that you want to place and then click Place. If the file has more than one page or layer, the Place Options dialog box appears. Configure the options in the dialog box, and then click OK (see "Options for placing files," page 8.4).

Place cursor 

3 Position the Place cursor in the open document where you want the top-left corner of the placed file to be.

4 Click to place the file at its original size; Canvas inserts the upper-left corner of the file at the point you click.

- **To define the dimensions of the file you're placing:** Drag to create a bounding box. Canvas inserts the file and scales it to fit the bounding box.

Options for placing files

When you place a file, the Place Options dialog box lets you specify how the placed file should be added to the current document.

When you place one Canvas document type (Illustration, Publication, Animation, or Presentation) into another document type, Canvas converts the placed pages, sheets, or slides to the format of the current document.

Document pages (and sheets or slides) can be added to the current document, along with their layers.

In the Place Options dialog box, select the following options, and then click OK to place the document.

Place on Current Layer Places the file's objects on the current layer of the current page. No pages or layers are created in the current document.

Show Place Cursor Select this option if you want to set the position or size of placed items on the current page. After you click OK in the Place Options dialog box, a place pointer appears. Click to set the position of the upper-left corner of the placed items, or drag to enclose an area in which you want the placed items to fit.

Add Layers to Current Page Places the document's layers as new layers on the current page in the current document.

Add New Pages Places the document's pages and layers as new pages and layers in the current document.

Select Click to choose specific pages or layers to place. A dialog box lists the available items. Shift-click two items to select a range. Ctrl-click to select multiple items and toggle selected items. Click OK to close the dialog box.

Saving Canvas documents

The Save and Save As commands store a document on disk.

- The Save command updates a document file on disk and overwrites the previously saved version.
- The Save As command lets you create a new file on disk from an open document, save documents as templates, and use other graphics and text file formats.

When you use these commands, the default format for storing documents is the native Canvas format.

To save a new Canvas document

1 Choose File > Save As. The Save As dialog box opens.

2 Select a location to store the document and type a file name.

3 Click Save to store the document on disk.

- **To save changes to a document as you work:** Choose File > Save to update the document file on disk.
- **To save a document with a new name or in a new location:** Choose File > Save As. Enter a new name or select a new location in the directory dialog box, and then click Save.

✓ Tip
To avoid losing your work in the event of a power failure or system failure, use the Save command frequently as you work to store changes on disk. Also use the AutoSave feature located in the General settings in the Configuration Center (see "General settings," page 12.2).

Saving selections and layers

Use the Save As command and options in the Save directory dialog box to save selections or layers, and create previews.

Save Entire Document The default setting tells Canvas to save a complete document.

Save Selection Choose this option after you select the objects in the document that you want to save as a new document. If you don't select anything, this option is not available.

Save Layers Select this option to save one or more layers in a new document. Then, click Layers to specify which layers to save. This option isn't available if the document has only one layer.

Use Compression Check this box to reduce the size of files saved on disk.

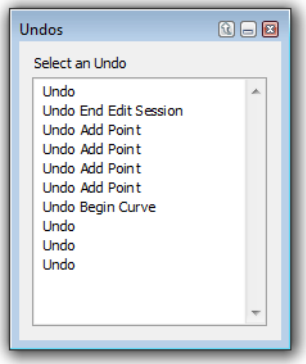
Preview Select the this option to save a low resolution preview of the document. In applications that support previews, you can see a thumbnail image of the document before opening the file.

Applying password protection to Canvas documents

In the Save As dialog box, enable the Encrypt option if you want to control who can open a Canvas document. When you apply encryption to a Canvas document, anyone who wants to open it must have the defined password.

Note: The encrypt option only appears when you save the document in the native Canvas format. The PDF export has its own encryption method (see "Exporting as PDF," page 35.29).

Undoing, redoing, and repeating actions



You can easily correct mistakes, restore your work to an earlier state, and repeat commands using the Undo, Redo, and Again commands. The minimum and maximum number of times you can undo changes can be changed within the Configuration Center (see "Functionality Options," page 12.6).

Canvas uses memory to store operations so they can be undone. The amount of memory depends on the operation; e.g., undoing a filter applied to a 2 MB image requires significantly more memory than reversing a change in type size.

Canvas allocates memory to ensure that you can undo the specified minimum number of actions. Canvas tries to set aside enough memory so you can undo the specified maximum number of actions. It uses this memory if it's needed for other operations. Therefore, you should be able to undo the specified minimum number of actions, but you might not be able to undo the specified maximum number of actions. The memory allocation ensures that you'll have the most memory available in Canvas.

- **To cancel an action:** Choose Edit > Undo or press Ctrl+Z. You can also open the Undos palette by choosing Window > Palettes > Undos. In the palette, select an action that you want to undo.

Not all actions can be canceled with the Undo command Actions that cannot be canceled include scrolling; closing or reverting to an earlier version of a document; selecting and deselecting objects; deleting settings in palettes; and saving documents.

✓ Tip
If you undo an action, it will state "Redo" in the palette. Select the Redo item if you mistakenly undid an action.

- **To restore actions you canceled using Undo:** Choose Edit > Redo or select the Redo item in the Undos palette. You can choose Edit > Redo multiple times to reinstate canceled actions in reverse order.
- **To repeat a command or other action:** Choose Edit > Again. When an action can be repeated, the Again command includes the name of the action; e.g., after you rotate an object, the Again command appears as "Rotate Again."

Not all actions can be repeated The Again command isn't available if the previous action can't be repeated.

Reverting to the saved version of a document

The Revert command lets you discard changes made to a document since it was last saved. This is the same as closing the document without saving changes, and then opening the original from disk.

Be certain that you want to discard all changes to a document before choosing the Revert command, because you cannot use the Undo command to restore your work after using the Revert command.

Keep in mind that you can use the Save As command to save a document with a new name. If you are not certain that you want to discard changes to a document, use Save As to store a new version on disk, then open the original document and compare the two.

- **To revert to a document's saved version:** Choose File > Revert. Before performing the command, Canvas asks you to confirm that you want to discard all changes.

Working with document windows

Each document you open appears in its own window. You can work with Canvas document windows the same as other windows. You can resize a window, expand it to fill the screen, and minimize or roll it up. Canvas provides commands to organize and select document windows when more than one is open.

Selecting among open documents

When you open several documents at once, only one is active. The Window menu displays the names of open Canvas documents. The name of the active document has a check mark.

- **To change the active window:** Choose the document's name in the list at the bottom of the Window menu. You can also click a document's window to make the document active.

When you open more than one document, information in the Properties bar and Status bar, such as the pointer's location, applies to the active document. The same is true of floating palettes; palette settings apply to the active document and they change when you switch documents.

Arranging windows

When you open more than one document window, you can stack or distribute them on screen so they are easier to work with.

When Canvas arranges document windows, it resizes them if necessary so they fit within the main program window or screen area.

- **To arrange windows in rows:** Choose Window > Tile Down.
- **To arrange windows in columns:** Choose Window > Tile Across.
- **To stack all windows:** Choose Window > Stack.
- **To arrange icons of minimized windows:** Choose Window > Arrange Icons.

Viewing and editing document properties

With the Properties command, you can view the properties of documents. You can view standard data and add your own meta data to a document.

To view or edit properties

1 Choose File > Properties to open the Document Properties dialog box. This dialog box contains the following tabs: General, Statistics, Summary, and Custom.

2 Click a tab to display its options. Use the procedures later in this section to edit the options, where applicable, then click OK to implement the settings.

Note: The document must be saved for some of its properties to be displayed.

Choosing a property

To view or customize a property, select a tab in the dialog box.

General Describes general information about a saved document, such as type, location, size, attributes, when it was created, and when it was last modified.

Statistics Displays when the document was created and when it was last modified. It also shows the last time the document was printed, the name of the person it was last saved by, the number of revisions, and the total editing time.

The Statistics box contains information about the document and the objects contained in it.

Note: The creation time can be different on the General and Statistics tabs. The Statistics tabs displays the date and time the document was created as a new document. The General tab displays the time it was first saved.

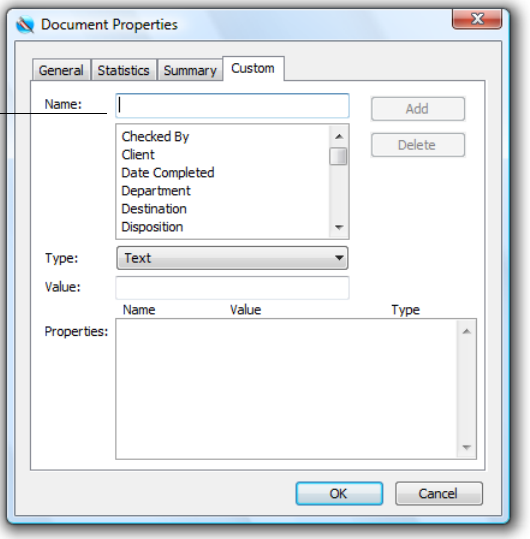
Summary Lets you customize information about the document. You can enter a title, subject, author, manager, and company.

In the Category and Keyword boxes, you can type data to categorize the document.

The Comments box lets you type comments about the document.

Custom Lets you add custom data to the document. You can choose names and data types for these entries, as described next.

Pre-defined data names



To enter custom data

1 Choose a name from the list for the data entry, or to create a new data name, type a name in the Name text box.

2 Choose a data type from the Type menu. You can choose Text, Date, Number, or Yes or No. Then, depending on the type, enter a value in the Value box.

- For Text, type any text value.
- For Date, type a date from 1/1/1601 through 12/31/9999.
- For Number, type a numeric value.
- For Yes or No, click Yes or No.

3 Click Add to add the data entry to the Properties box.

- **To modify a data entry:** Click the entry in the Properties box, then change the type or value. You cannot change the name of the entry. Click Modify to apply the change.
- **To delete a data entry:** Select the entry in the Properties box and then click Delete.

Printing documents

Canvas works with all standard desktop printing devices, including PostScript and non-PostScript printers. You can print Canvas documents using black-and-white or color devices.

This section focuses on printing to desktop printers. For information on installing, setting up, and selecting a printer to use, refer to your operating system documentation.

How Canvas prints documents

A few key factors affect how Canvas prints a document. Canvas decides which objects to print based on the following:

Document boundary Canvas does not print objects that are outside the layout area (the rectangle that represents the document on screen). Objects that are partly inside and partly outside the layout area will be cropped in the printout.

Visible layers Objects on layers that are not visible are not printed.

Printable layers If a layer's print option (in the Document Layout palette) is off, nothing on the layer is printed.

✓ **Tip**
Canvas can read the page orientation from the printer properties. Select the correct page orientation in the Page Setup dialog box. Deselect any objects and then select From Printer in the Paper menu in the Properties bar.

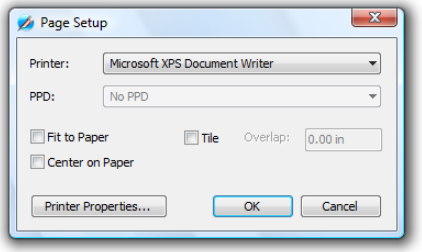
Printable objects If an object is made non-printable (in the Document Layout palette or the Trap tab in Object Specs), the object will not print.

Printable area If you have defined a print area by choosing File > Print Area > Set Print Area, then only the area within the print area is printed. If you work with complex illustrations, you can elect to print only a portion rather than the entire design. You can toggle the printable area by selecting its checkbox in the Properties bar.

- **To remove the print area:** Choose File > Print Area > Clear Print Area.

Using Page Setup

To access the Page Setup dialog box, choose File > Page Setup. The page setup affects the document's layout area in Canvas and the way a document is printed. It's best to set these options when you create a document so you can see page breaks correctly on-screen.



Page Setup dialog box

Center On Paper Centers a document on the printed page. If you're printing selected objects only, Canvas shifts the selected items to the center of the printed media. This option can be useful when you have selected objects that you want to print in the center of the page, but they are not centered in the document itself.

Fit To Paper Scales a document to fit within the page's printable area. Keep in mind that objects that are outside the layout area, will not be printed.

Tile Prints a large document by dividing it among "tiles" of printer pages. Type an Overlap value in the text box so part of the document repeats at the edge of adjoining tiles; the overlap makes it easier to assemble the complete document after printing.

Previewing and printing

Print preview reflects the current print settings and the page setup (see "Using Page Setup," page 8.11). These settings include the type of output (composite or color separations), pages to print, tiling, centering, printing blank pages, and printing in color.

In the preview, you can see which objects, layers, and pages will be printed. You can make sure the layout fits in the printable area of the paper. If you choose the Tile option in the Page Setup tab or dialog box, the preview shows the tiles as separate pages.

✓ **Tip**
You can also access the Print Preview function from the Print dialog box. Press Print Preview button.

To print preview a document

1 Choose File > Print Preview to check print settings and the composition of a document before printing.

2 Click Print to send it to the current printer when you finish previewing a document and the settings are correct.

3 Click the zoom buttons to increase or decrease the magnification of the preview. Click the arrow buttons to cycle through the pages. If you are previewing separations, click the plate buttons to cycle through the plates that will be printed for each page.

4 Click Close to return to the document without printing.

Print Preview options

The Print Preview dialog box contains the following options and controls.

Options tab On the Options tab, you can choose a printer, print range, and number of copies. This tab contains output options related to image and text handling. You can also activate print features like registration and crop marks, which are located in the Additional information area of the tab.

Separations tab If you plan on sending color work to a service bureau or printing shop, color separations will be necessary. Select the Print separations checkbox to activate the various options.

Messages tab Any printing related warning or error is indicated on this tab; e.g., if the document contains a spot color, the spot color is indicated.

Page setup tab This tab contains the same options as the Page Setup dialog box (see "Using Page Setup," page 8.11), except you have a Thumbnails option.

- **To print multiple scaled pages:** In the Thumbnails pop-up menu, you can select an option to print multiple document pages on each printer page.

Choose 1/Page to print a document at actual size, with one document page on each printer page. If the document is larger than the printer paper, the document will not be scaled; select the Tile option to print the document on multiple sheets of paper.

- **To scale and print multiple document pages on each printer page:** Choose an option to set the number of document pages to print. The document pages will be scaled as necessary to fit the printer pages. The amount of scaling depends on the size of the document pages and the size of the printer pages.

Show rasterized area Select this checkbox to see the objects that will be rendered when sent to the printer. This option depends on the selection in the Transparency rendering menu (see "Transparency Rendering," page 8.15).

Show overprint/choke/spread These checkboxes are related to the trapping technique that you can apply to objects via the Object Specs palette (Trap tab). If you have applied any technique, select the appropriate checkbox.

Normal display Select this radio button to switch to normal display if using wireframe display.

Wireframe display Select this radio button to switch to wireframe mode.

To print a document

1 Choose File > Print. The Print dialog box appears.

2 Enter the number of copies and the pages to print, and then select other print options. Click OK.

Printing options

This section describes the primary options you can use for printing documents on desktop printers.

Collate Copies Prints all pages of the document in order based on the number of copies requested, rather than printing all copies of page 1, all copies of page 2, and so on.

Skip Blank Pages Does not output document pages (or separation plates) that are completely blank.

Reverse Order Prints from the last page to the first, keeping pages in the correct order if the printer stacks pages face-up in the output tray.

Print Facing Pages If the document is formatted for spreads, Canvas prints facing pages on a single page. This option is available for printing Publications only.

Selection Only Prints the currently selected object.

Odd Pages Prints only the odd-numbered pages.

Even Pages Prints only the even-numbered pages.

✓ **Tip**
Some documents can be larger than the paper in your printer. To print the entire document, select the Tile option in the Page Setup dialog box. Canvas will "tile" (divide) the document into a series of pages matching the paper size of your printer.

Color Mode

Choose an option from the Color Mode menu to control color accuracy when using a color printer. In general, when you print to a color printer, it's best to choose a color specification that matches the colors in the document you're printing; e.g., choose CMYK if your document contains CMYK colors only.

RGB Outputs colors using RGB color specifications. A non-color printer will convert the color values to print as shades of gray.

Black & White Prints all colors as black or white.

Colors As Grays Canvas converts color values to shades of gray for printing on any printer, including color printers.

CIE L*a*b Uses color calibration to try to match printed colors to their appearance on screen. Keep in mind that many on-screen hues cannot be reproduced on paper with printing inks. For example, colors that look bright and saturated on screen, such as hot pink, cyan, and brilliant orange, will appear muted in printed materials.

CMYK Outputs colors using CMYK color specifications. A non-color printer will convert the color values to print as shades of gray.

Image compression

In the Image Compression menu, choose a format for output of image data to a PostScript device or file. The format you choose affects the amount of data transmitted and the size of a PostScript file. This setting can affect compatibility with networks and PostScript printers.

ASCII Outputs image data as plain text. This is the most compatible format, but it transmits (or saves in files) the largest amount of data.

✓ **Tip**
Rendered transparency effects are also transmitted as image data when printing to PostScript printers.

Binary Outputs images as binary data, which might not be compatible with all printers and networks. Binary data is half the size of ASCII data.

Level 2 ASCII Outputs images in an ASCII format that is compatible with PostScript Level 2 devices. This produces files that are approximately 20% smaller than regular ASCII PostScript files.

RLE Outputs images using Run Length Encoding compression. This format is compatible with PostScript Level 2 devices. This form of compression is most efficient when documents contain images that have large areas of flat color.

JPEG Outputs images using JPEG compression. This format is compatible with PostScript Level 2 devices. JPEG compression requires more system memory and more processing time at the printer than other compression methods. However, this format achieves the fastest printing results with continuous-tone (photographic) images and documents containing transparency effects.

✓ **Tip**
By default, Canvas uses JPEG compression for printing images. This can reduce the amount of data sent to the printer. If a network print spooler reports errors with a JPEG data stream, select Images: ASCII or Level 2 ASCII and try printing again. The Images setting affects printing of images and rendered effects only.

Printing proxies

Print Proxied Images at Full Resolution Prints the high-resolution images that are linked to the proxies in the document. Canvas outputs the images from the linked files on your computer. If you do not select this option, Canvas prints proxy images rather than the high-resolution images. This is faster and could be adequate when you are proofing other parts of a document.

Transparency Rendering

Choose an option in the Transparency Rendering menu to specify how transparency and SpriteEffects will be rendered (converted to pixels for printing).

Smallest Area Renders the area inside the bounding box of all transparent objects. This generates the least amount of additional data to print transparency effects. Do not choose this option if you are printing in color on non-PostScript printers and the document has vector and transparent objects that share the same color, because these printers will not match the colors precisely. In some cases, non-standard PostScript printers might produce a slight pixel shift between a transparent and non-transparent area of a vector object. If this happens, select Complete Area.

Complete Area Renders the area within the bounding boxes of all transparent objects, as well as objects that are overlapped by transparent objects (or intervening objects). This is the best setting to use

when you print to a non-PostScript printer, such as a Windows GDI printer, to avoid color-matching problems

Entire Document Renders all objects in the document as one or more images that are sent to the printer. This is equivalent to processing the document in an internal RIP (raster image processor) in Canvas. This option produces the greatest amount of image data. However, this option can be useful if you experience problems producing accurate output of transparency or other effects when you use a particular printer or printer driver.

Don't Render Transparent Objects Does not render any transparency effects in the document. If you select this option, transparency (SpriteLayer) and image (SpriteEffects) effects will not be printed; transparent objects will be printed as opaque objects.

✓ **Tip**
Select Don't Render Transparent Objects if you need to quickly print a proof of a complex document. This allows you to check the positioning of objects without seeing the final transparency effects.

The one exception to this rule involves vector objects that have a transparency Scope setting of Fill only when printing to a PostScript printer, because PostScript can print transparent fill inks in vector objects without rendering. For information on the Scope setting, see "To set an object's transparency scope," page 34.5.

Printing text with effects

Text Always In Front Because of the way that Canvas renders SpriteLayer effects, text that is not in front of all other objects can be output as rendered images rather than text. If you want to avoid rendering of text for printing, select this option. Canvas will print the text objects in front of all other objects.

If you have text that has special effects or is behind transparent objects, you should not select this option, so the text will be rendered and printed as it appears in the document.

Closing documents


Close button

When you close a document, Canvas removes the document window from the screen. Closing a document doesn't save it (Canvas will warn you if you try to close a document that has changed).

- **To close a Canvas document:** Choose File > Close. You can also click the Close button in the document's title bar to close the document.

CHAPTER 9

RUNNING CANVAS

This chapter explains how to start and end a Canvas work session. It also provides an overview of the Canvas interface and describes the following basic procedures:

- Selecting tools from the Smart Toolbox™
- Using and arranging palettes
- Using the Properties bar
- Using information displayed in the Status bar
- Undoing, redoing, and repeating actions

Starting and exiting Canvas

To start Canvas, do one of the following:

- Double-click the Canvas program icon if you've made a shortcut.
- Double-click a Canvas document to start Canvas and open the document.
- Double-click a Canvas template file to start Canvas and create a new document based on the template.

Choose Canvas from the Start > Programs menu.

- **To view start-up screen information:** When Canvas is running, choose Help > About Canvas. Do this when you want to check your serial number, version number, and other program information.

Checking optional software at start up

Canvas displays a message if it encounters a problem, such as missing system software components, as it starts. If a message appears, click OK to continue loading Canvas.

Canvas depends on some system software components for importing and exporting certain types of files, managing colors, and working with some graphics formats. The Canvas installer places some software called "Dynamic Link Libraries" on your system, if needed. If Canvas can't find the required component later, it's possible the file was moved or disabled.

If you encounter a problem when starting Canvas, refer to the "Read Me" file, which includes the most up-to-date information on required software.

Startup dialog box and new documents

Whenever you launch Canvas, choose File > New, or click the New document icon, the Startup dialog box appears. You can create a new document, open documents, or access recent documents. You also have links to tutorials, online forums, knowledgebase articles, among others.

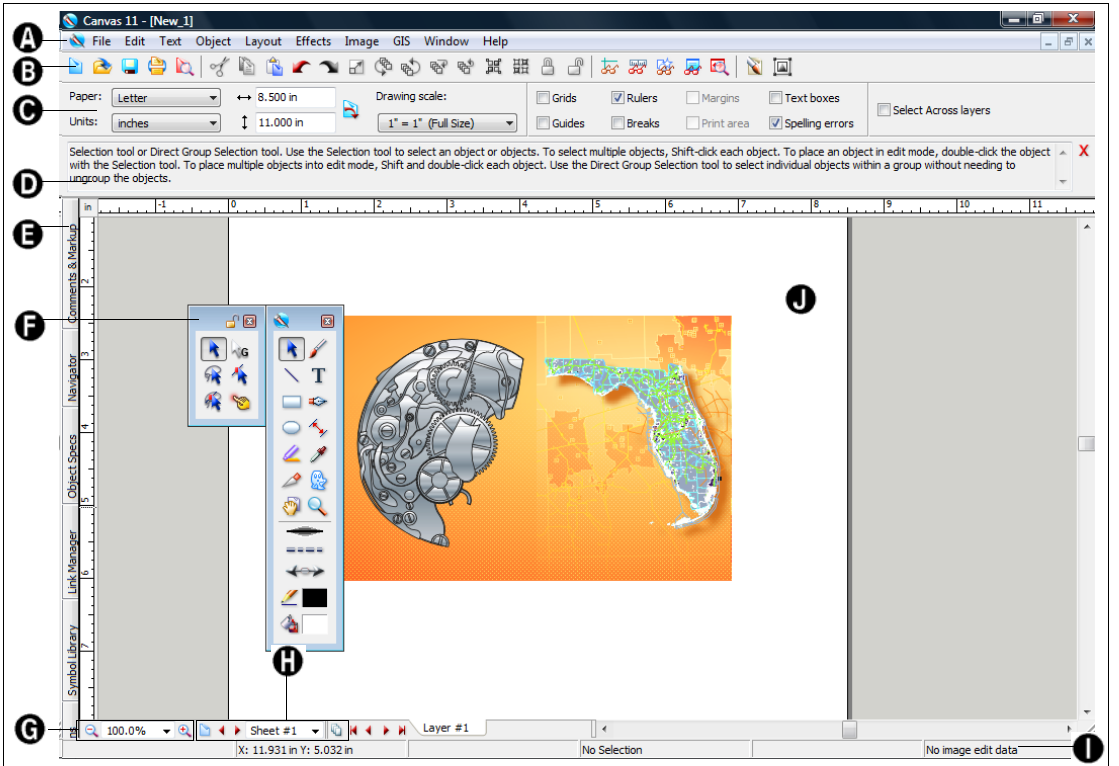
- **To disable the Startup dialog box:** Select the *Do not show me this screen again* checkbox. When the Startup dialog box is disabled, the New Document dialog box opens when you launch the application, choose File > New, or click the New document icon.
- **To enable the Startup dialog box:** Choose Help > Startup dialog.

Quitting Canvas

Choose File > Exit. If you try to quit without saving a document that has changed, Canvas asks if you want to save it first.

Overview of the Canvas interface

Canvas has four types of documents: Illustration, Publication, Animation, and Presentation. These documents share some common elements, while some specialized controls apply to particular documents types.



Canvas window

Major parts of the Canvas interface are shown here. Depending on the Canvas customization as well as OS, the interface may vary.

You can hide the Toolbar, Properties bar, and Docking bar. You can also dock various palettes and customize the Toolbar.

Each document window has Zoom controls, Document controls, and scroll bars. All documents share the Smart Toolbox, Properties bar, and Status bar.

In Windows, you can switch between Canvas documents via the Window menu.

A Menu bar

B Toolbar

C Properties bar. This area functions as a control center for the complete range of Canvas text, painting, or vector tools as well as document setup. You can toggle this bar on or off (see "Using the Properties bar" on page 9.9).

D Dynamic help. Open this window to display information for selected tools and objects (see "Dynamic Help" on page 9.15).

E Docking bar. This bar can be shifted to the left, right, or above the layout area.

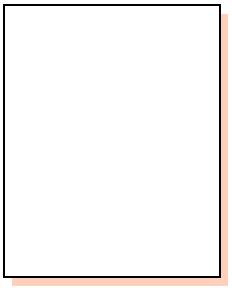
F Smart Toolbox™. Tool palettes snap out to the right. If you use a specific tool palette regularly, lock the palette so it remains open while you use other tools (see "Viewing the Smart Toolbox" on page 9.5).

G Zoom controls. Use these controls to zoom in and out of a document (see "Using the Zoom controls" on page 9.19).

H Document controls. Add pages and move from one page or layer to another (see "Page & layer controls" on page 11.7).

I Status bar

J Layout area. This rectangle is the main working area for creating illustrations, page layouts, presentations, and animations (see "Layout area" on page 9.4).



Layout area

Layout area

The rectangle centered in the Canvas document window is the Layout area. The white space around the Layout area is known as the pasteboard and is additional working space where you can place objects before using them in an illustration. Objects on the pasteboard are saved with the document, but they are not printed.

The Layout area represents different things in the different Canvas document types.

Illustrations It is one page, called a "sheet," with layers.

Publications It is one single-sided page or two facing pages with layers.

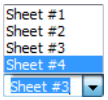
Presentations It is one "slide" with layers.

Animations It is one frame of an animation. If you select "onion-skinning", you can see objects on adjacent frames (see "All about onion skinning" on page 35.21).

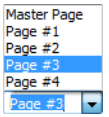
You can change the color of the Layout area to represent the color of tinted paper. Set the Layout area color by choosing Layout > Document Setup and then selecting a color from the Paper color popup palette.

Document navigation controls

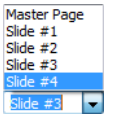
A pop-up menu appears below the document window. Open this menu to move through a document.



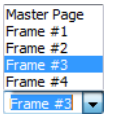
Sheet menu



Page menu

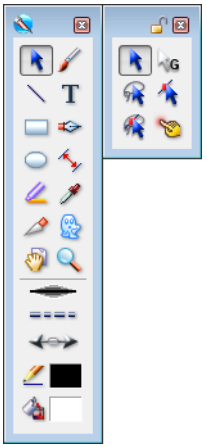


Slide menu



Frame menu

Viewing the Smart Toolbox



In a multi-tasking environment, it can become time-consuming to have to constantly re-open a tool palette so you can grab the correct tool.

Select any tool in the Smart Toolbox and its palette, as well as related tools, automatically opens and snaps to the right of the Toolbox. The tool palette remains in that position until another tool is selected.

- **To display the Toolbox:** If the Toolbox is hidden or closed, Choose Window > Palettes > Show Toolbox to display it.

- **To dock the Toolbox:** Disable the Smart Toolbox option and then click the docking button or drag the Toolbox by its title bar to the Docking bar.

Note: By default, the Smart Toolbox is active when you launch Canvas for the first time. You cannot dock the individual tool palettes when this option is enabled.

To disable the Smart Toolbox option

1 Choose File > Configuration Center.

2 Open the General settings and select Functionality options.

3 Deselect the Smart Toolbox checkbox.

Note: When the Smart Toolbox is disabled, you can dock the individual tool palettes.

If the Smart Toolbox is disabled, you click or press an icon to open a tool palette and then click again on the icon for the tool you want to select.

If you'll often use a specific tool, or related tools found on the same palette, you can also lock the palette so it stays "snapped" to the Toolbox.

- **To lock a tool palette:** Click on the lock icon. When you select another tool, its palette snaps to the right of the locked palette.

When palettes are locked, you can relocate them to another part of the layout area. To do so, place the pointer on the palette title bar and Shift-drag the palette from the Toolbox.

Also, if you Ctrl-drag the palette, you can move a group of locked palettes or a single locked palette away from the Toolbox.

✓ Tip
To temporarily retain a drawing tool, Shift-click the tool in the Toolbox. This function applies not only to basic vector tools but also to complex drawing tools, and path tools.

- **To unlock a locked palette:** Click the lock icon.

Using the tools

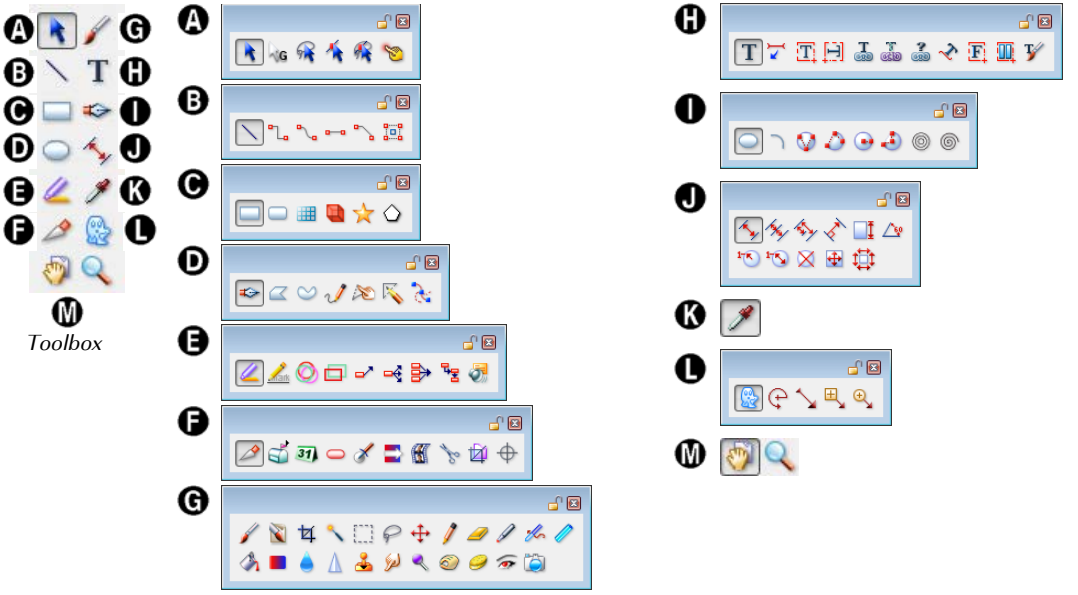
In the Smart Toolbox, tools are represented by icons in two columns. The tools that aren't displayed are available on tool palettes that snap to the Toolbox when opened.

- **To select a tool displayed in the Toolbox or tool palette:** Click the tool. The selected tool is shaded, like a recessed button.

Tool palettes

This diagram identifies the default tool palettes in the Toolbox. The available tool palettes may change depending on your selection in the Personality Manager (see "Personality Manager" on page 12.3). Click on a tool icon and its respective palette opens (see "Viewing the Smart Toolbox," page 9.5).

A Selection tools
B Line tools
C Rectangle tools
D Oval tools
E Markup tools
F Miscellaneous tools
G Painting tools
H Text tools
I Path tools
J Dimensioning tools
K Color Dropper tool
L Transparency tools
M View tools



To access tool palettes and tools via the Toolbox command

If you are looking for a particular tool and are unsure where it is located in the Toolbox, choose Window > Toolbox to see the various tool groups.

- **To open a tool palette:** Click on the arrow icon and select Show Group. The tool palette automatically opens and snaps to the right of the Toolbox.
- **To access an individual tool:** Click on the arrow icon and select the particular tool from the menu. The tool will be selected in the Toolbox.

Using AutoSnap palettes

Canvas organizes tools, special effects, object attributes, and other functions in palettes. Palettes can remain open on screen, and they can be docked on the Docking bar. They can also attach together due to Canvas' "snapping" technology for floating palettes, or rather AutoSnap™ palettes.

If you have two or more palettes open, you can position them so they attach together. Once attached, you can then move them around as a group.

- **To tear off a group of palettes:** Click on a palette's title bar and hold down the Ctrl key while dragging the palette away. Any palettes to the right of the selected palette move simultaneously.
- **To tear off a single palette :** Click on a palette's title bar and hold down the Shift key while dragging the palette away. Only the selected palette moves.

To disable the AutoSnap palettes option

1 Choose File > Configuration Center.

2 Open the General settings and select Functionality options.

3 Deselect the AutoSnap palettes checkbox.

Some palettes have an Apply button that you must press if you want to implement the current settings. A palette stays open until you click its close box or use a command to close it.

- **To roll up a palette so only its title bar is visible:** Click on the minus button on the palette title bar.

- **To dock a palette:** Click on the arrow button or drag the palette to the docking bar (see "Using the Docking bar," page 9.13 and "Using AutoSnap palettes," page 9.7).
- **To arrange palettes:** Choose Window > Palettes > Clean Up Palettes. Canvas moves all open palettes except the ToolBox and floating tool palettes to the upper-right corner of the document.
- **To close all palettes:** Choose Window > Palettes > Put Away Palettes. Canvas closes all open palettes, including the Smart Toolbox and floating tool palettes.

Palettes submenu

All Canvas palettes are listed in the Window > Palettes menu. To display a palette, choose the name of the palette in the submenu. If a palette is behind other palettes, it comes to the front. If a palette is docked, the palette comes off the Docking bar and opens.

Some palettes are also associated with commands in other menus; e.g., the Layout > Document Layout command opens the Document Layout palette. The Image > Show Channels/Hide Channels commands open and close the Channels palette.

Tip
Tool palettes are listed in the Windows > Toolbox submenu (see "To access tool palettes and tools via the Toolbox command," page 9.7).

Palette icons in the Toolbox



Pen strokes icon
Dash styles icon
Arrow styles icon
Pen Ink icon
Fill Ink icon

The Strokes icon, Dash styles icon, Arrow styles icon, Pen Ink icon, and Fill Ink icon provide access to the Presets palette. You can use these icons to select preset colors, dashes, arrows, and pen widths. To open the Presets palette, click on one of these icons to open the palette and then drag it away from the Toolbox.

Note: When editing an image, the Pen Ink icon is replaced by the Brushes icon.

Procedures for selecting inks and strokes are covered in the chapters "Inks: colors & patterns" on page 14.1, and "Strokes: outline effects" on page 15.1. Information on selecting and using brushes is in the chapter "Painting & image-editing" on page 22.1.

Using the Toolbar

The Toolbar contains buttons you click to choose commands and tools. The Toolbar appears below the menu bar.

Toolbar



A standard set of commands appears on the Toolbar when you first run Canvas. You can use the Customize command to change the buttons on the Toolbar. Add buttons to the Toolbar for commands, tools, and custom colors and styles (see "Customizing the keyboard and Toolbar," page 12.25).

- **To display the Toolbar:** Choose Window > Show Toolbar.
- **To hide the Toolbar:** Choose Window > Hide Toolbar.
- **To select an item on the Toolbar:** Click its button.



You can identify Toolbar items by displaying tooltips. Point to an icon and a tooltip appears with the name of the command or tool.

- **To display tooltips if they don't appear:** Choose File > Configuration Center. Within the General settings, open the Functionality options manager and and select Show information tooltips.

Using the Properties bar

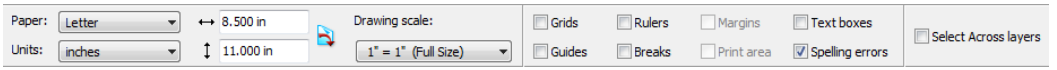
Use the Properties bar to quickly modify the document setup, create some vector objects, modify tool settings, apply a filter or effect to an object, cache objects, or apply text formatting.

✓ Tip
If you hide the Properties bar, you won't be able to display the Dynamic Help window.

- **To show the Properties bar:** Choose Window > Show Properties Bar.
- **To hide the Properties bar:** Choose Window > Hide Properties Bar.

Viewing & modifying document setup

You can view the document setup when no item is selected. The Properties bar gives you quick access to document controls, such as page size, ruler measurements, drawing size, and scale. In addition, you can toggle on/off the grids, guides, ruler, page breaks, margins, and printable area.



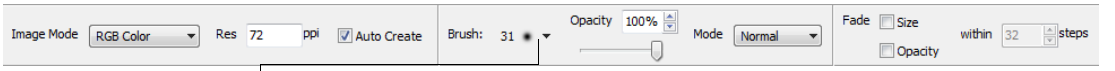
Changing tool settings

When you select a tool, its settings automatically appear in the Properties bar. Use the menus, checkboxes, and scroll boxes to

change the tool settings. To modify paintbrush settings or define a new brush, see “Selecting brushes and painting options” on page 22.13).



Properties bar with Vector tool selected



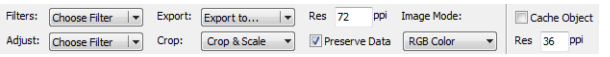
Properties bar with Painting tool selected

You can open the Brush Options dialog box by clicking on the Brush icon.

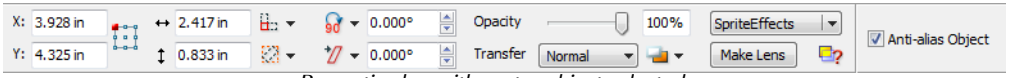
Modifying object properties

When an object is selected, the Properties bar automatically displays the object’s reference point, height, width, rotation, and skew settings. You can also change the object’s opacity and transfer mode.

In addition, when drawing a vector object, the Properties bar indicates the object’s reference point and shows a live readout of the width and height.



Properties bar with paint object selected



Properties bar with vector object selected

Reference point



To locate the reference point

The reference point is displayed in the Properties bar. It is a point on the selected object (or its bounding box) that position data are based on. The reference point is also the fixed point used in an object’s transformation; e.g., with a rectangle selected, click the upper-left corner point. The X/Y boxes show the coordinates of the rectangle’s upper-left corner. To move an object, type new coordinates for the reference point. The next two boxes display the object’s width and height. Enter new values to resize the object and press Enter.

✓ Tip
To copy an object and paste it in the same position on a different page, you can do so by copying the object and then pressing Shift and choosing Edit > Paste.

- **To change an object's position:** Enter values in the X/Y fields (reference point) and press Enter.

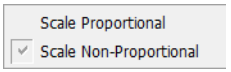
Note: With an oval or other shape selected, the corner points in the box correspond to the corners of the object's bounding box.

Start and End The first two boxes show the X/Y coordinates of a line's start point. This is only available when a line is selected. The second two boxes show the line's end point.

Length and Angle The first box indicates the length of the line. The second box refers to the angle or slope of the line. Enter new values to modify the length or angle of the selected line and press Enter. The Start/End values change accordingly.

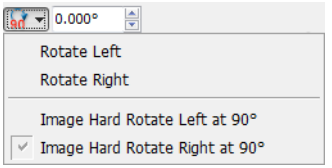
- **To select an object's X/Y reference point:** Select a reference point in the bounding box icon beside the X/Y fields.

- **To change an object's dimensions:** Enter values in the width and height fields and press Enter.



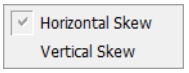
- **To scale an object:** Click on the scale icon in the Properties bar and select either Scale Proportional or Scale Non-Proportional. If you select Scale Proportional and enter a value in the width field, the height will change accordingly, or vice-versa. The opposite occurs if you select the Scale Non-Proportional option.

- **To open the SpriteEffects palette:** Click on the SpriteEffects icon. You can still access this palette by choosing Object > SpriteEffects > Show Palette (see "Using the SpriteEffects palette" on page 33.3).



- **To apply SpriteEffects:** Open the SpriteEffects menu and select the effect. You can still apply an effect via the SpriteEffects palette or by choosing Object > SpriteEffects > Add Effect (see "Using SpriteEffects" on page 33.1).

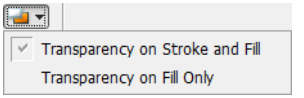
- **To rotate an object:** Open the Rotate menu by clicking on the Rotate button. Select a rotate option. Then, enter a degree value in the Rotate field and press Enter. If rotating an image, you can use the Image Hard Rotate options.



- **To skew an object:** Open the Skew menu by clicking on the Skew button. Select a skew option. Then, enter a degree value in the Skew field and press Enter.

✓ Tip
For text objects, you can change the opacity and transfer mode by using the Transparency palette (Window > Palettes > Transparency).

- **To change an object's opacity:** Move the opacity slider to the right or left depending on the desired transparency. For vector objects, you can also choose to apply the effect on the stroke and fill or only the fill by clicking on the Transparency button.



- **To change an object's transfer mode:** Open the Transfer menu and select the desired mode.

✓ Tip
You can even group vector, image, and text objects and then cache the grouped object.

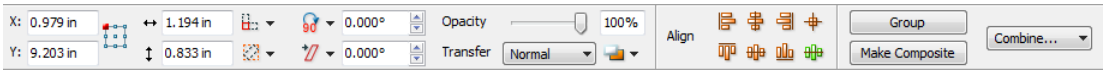
- **To cache vector objects:** Group the selected vector objects. Click the Cache Object checkbox. Then, enter a value in the PPI field. This feature is useful when working with complex illustrations. The Cache Object option only appears if the vector objects are grouped.

- **To cache paint objects:** Select the paint object and then click the Cache Object checkbox. Enter a value in the PPI field.

Note: When a cached paint object is placed into paint edit mode, it returns to the original resolution.

- **To cache text objects:** Group the selected text objects. Click the Cache Object checkbox. Then, enter a value in the PPI field.

- **To align objects:** Select the objects so that the Align options appear on the Properties bar. More than one object must be selected.



Modifying images

If a paint object is selected, the following image options appear in the Properties bar in addition to the general options (see also "To cache paint objects" on page 9.12).

✓ **Tip**
The last five used filters appear at the top of the menu on the Properties bar. If you don't click on the arrow icon to open the menu, the last filter used will be applied.

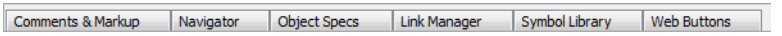
- **To apply image filters:** Click on the arrow icon of the Filters menu. Select a filter from the list.
- **To apply adjustment commands:** Click on the arrow icon of the Adjust menu. Select a command from the list.
- **To crop or scale a paint object:** Click on the Crop & Scale button to view the default sizes. Choose the Custom option to define a special crop size (see "Changing image size" on page 23.3).
- **To export your images:** Click on the Export button and select an export filter. This menu contains the same options as the Image > Export command.
- **To change an image's resolution:** Enter a value in the Resolution field. Select the Preserve data checkbox to prevent resampling when the resolution is changed.
- **To change the image mode:** Click on the arrow icon of the Image Mode menu. Select a mode from the list.

Formatting text

When using various tools to create or select text objects, the text formatting options appear in the Properties bar. Format your text using the Properties bar options in addition to the Type palette (Text > Type) and Text menu settings (see "Formatting text with the Properties bar" on page 29.5).

Using the Docking bar

You can use the Docking bar to customize the Canvas interface. By default, the Docking bar is displayed near the top of the screen below the Properties bar when you launch Canvas for the first time.



- **To display the Docking bar:** Choose Window > Docking Bar > Show Docking Bar. When you display the Docking bar, the palettes that were docked the last time it was displayed will remain locked.
- **To hide the Docking bar:** Choose Window > Docking Bar > Hide Docking Bar.

You can move the Docking bar from the top to the right and left sides of your workspace.

- **To move the Docking bar:** Click and hold the pointer on the Docking bar (not on a palette tab). Drag the Docking bar from its present position to either the top, left, or right.

The settings for the Docking bar are stored in the CVAppData.Set file.

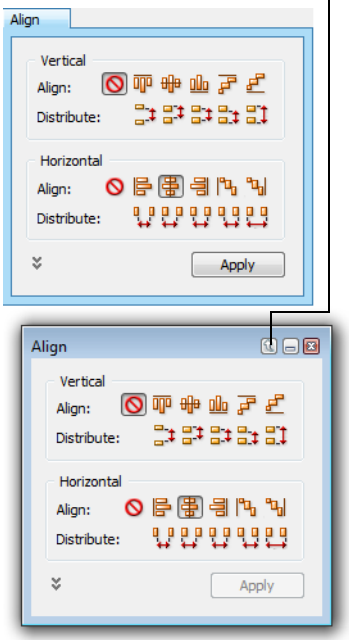
Docking palettes

When you dock a palette, a tab with the palette's name appears on the Docking bar. The tabs of docked palettes give you quick access to tools or features. Docked palettes also leave more screen space.

You can dock most Canvas palettes, including tool palettes (see "Tool palettes," page 9.6). You can dock other palettes from the Toolbox, including the Inks, Strokes, Transparency, and Brushes palettes. You can also dock command or effects palettes such as Align, Blend, Envelope, Object Specs, and Type. Dialog boxes that require you to click OK or Cancel before continuing can't be docked.

You can dock as many palettes as you want on the Docking bar, depending on the size of your screen (see "To adjust the size of tabs on the docking bar," page 9.15).

Docking button



- **To dock a palette:** Drag a palette to the Docking bar and drop it when a tab outline appears or click the Docking button located in the upper right corner of the palette.
- **To dock a tool palette from the Toolbox:** First drag the palette away from the Toolbox so its title bar appears. Then, drag the tool palette onto the Docking bar.
- **To change the position of a docked palette:** Drag the palette's tab to another position on the Docking bar.
- **To remove a docked palette:** Drag its tab away from the Docking bar.
- **To dock all open palettes:** Choose Window > Docking Bar > Dock All Palettes.
- **To dock palettes when closed:** Choose Window > Docking Bar > Dock Palettes When Closed.
- **To arrange docked palettes:** Choose Window > Docking Bar > Clean Up to arrange the tabs of docked palettes evenly on the Docking bar.

✓ Tip
To access the Docking bar commands, you can also right-click an empty area of the Docking bar.

- **To arrange tabs by name:** Choose Window > Docking Bar > Clean Up By Name to arrange the tabs of docked palettes in alphabetical order.
- **To adjust the size of tabs on the docking bar:** Choose Window > Docking Bar > Set Tab Length. A dialog box appears.
    - To display the full name of docked palettes, select Auto.
    - To set a specific tab size, select "No. of Characters" and enter the number of characters to display. A smaller number results in smaller tabs.
    - Click OK.

Using docked palettes

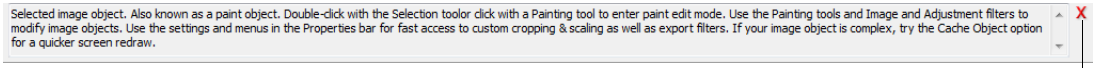
To make a selection from a docked palette, click the palette's tab on the Docking bar. The palette pops open and you can click a tool or other item in the palette to select it. When you click in the document or the ToolBox, the palette closes again. To close the palette without selecting anything, click anywhere outside the palette.

You can use docked palettes as if they are floating, with one exception: you cannot drag objects into docked palettes.

✓ Tip
Palettes that are docked when you quit Canvas will be docked the next time you launch Canvas.

Dynamic Help

In addition to the electronic manual, which you access from the Help menu, Canvas also includes a Dynamic Help window that is located just below the Properties bar. Dynamic Help will display information and tips for selected tools and objects, even while performing tasks in edit mode.



Click icon to close the Dynamic Help window

Note: By default, the Dynamic Help window is open when you first launch Canvas.

- **To display the Dynamic Help window:** Choose Window > Show Dynamic Help.

You can also click on the Question Mark icon that appears when the Dynamic Help window is closed.

✓ Tip
The Properties bar must also be displayed if you want to open the Dynamic Help window.

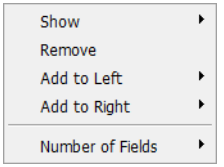
- **To close the Dynamic Help window:** Choose Window > Hide Dynamic Help.

You can also click on the X icon just above the right side of the open Dynamic Help window.

Using the Status bar

The Status bar is at the bottom of the Canvas window. The Status bar provides information about commands, tools, objects, and program operations.





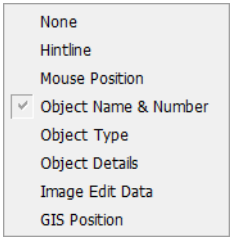
- **To set the number of information fields:** Point to the Status Bar, open the context menu, and choose from the Number of Fields submenu.
- **To add fields:** Point to the Status Bar, open the context menu, and choose a function in the Add to Right or Add to Left submenu.
- **To remove a field:** Point to the field, open the context menu, and choose Remove.

New fields that you add to the Status Bar are blank until you assign a function to each field. If you reduce the number of fields, Canvas removes fields from the right end of the status bar.

- **To adjust the width of a field:** Drag its border right or left.

During certain actions, such as saving a document, Canvas displays a progress bar in the Status bar.

Assigning functions to fields



To assign a function to a field in the Status bar, point to the field, open the context menu, and choose a function in the Show submenu.

Hintline The Hintline area displays tool names, tips, and status messages. When you move the pointer over a tool icon or other item, the Message area shows the tool's name and function. You can use this feature to take a tour of the Canvas tools and interface.

Mouse position When you move the pointer, draw, resize, or rotate objects, Canvas displays the coordinates of the pointer.

Object Name & Number Displays the current page number and layer number. Symbols indicate layer options, including non-printing, locked, and color override. When an object is selected, the field displays the object's number in the sequence of objects on the layer.

Object Details Displays various details about selected objects, such as the position of points on the bounding box of a rectangle (as measured from the rulers' zero point) and the number of points in a path object. For other objects, the field displays data such as the diameter of ovals and the angle of arcs.

Object Type Displays information about selections. When one object is selected, the field displays the type of object selected. When multiple objects are selected, the field shows the number of objects selected. When you select an object group, the field displays "Group of *n* objects," with *n* as the number of objects.

Viewing documents

This section describes how you can adjust your view of a document. Viewing options in Canvas let you

- control when Canvas redraws objects
- scroll to any area with the Hand tool or scroll bars
- increase or decrease the view magnification
- restore any view magnification and location
- display wireframe and process-color views

Controlling when Canvas refreshes the display

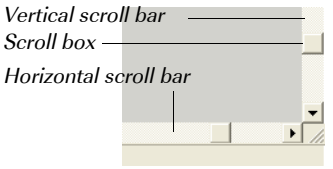
Canvas refreshes the display, which redraws all visible objects, when you scroll or change magnification. When you work with complex images, you can interrupt the redraw to save time, then refresh the display when you're ready.

- **To interrupt display redraw:** Press Esc during normal redraw.
- **To refresh the display:** Choose Layout > Display > Refresh.

You can refresh the display after interrupting screen redraw, or when you want to refresh the display.

Scrolling documents

You can use scroll bars or the Hand tool to move to areas of a document that aren't displayed in the document window.



Using scroll bars

Document scroll bars represent the full document area. The position of the scroll box within a scroll bar indicates the current view area.

To scroll using scroll bars, do one of the following:

- Click one of the arrows to move in the arrow direction.
- Drag the scroll box toward the part of the document you want to see. For example, drag up to see more of the top.
- Click the scroll bar to scroll one screen length toward the side of the scroll box that you clicked. For example, click to the right of the scroll box to move one screen to the right.

Using the Hand tool



Using the Hand tool to scroll a document is like sliding a piece of paper on a desktop.

✓ Tip
To temporarily switch to the Hand tool while using another tool, press the Spacebar and drag with the Hand pointer.

To scroll with the Hand tool

1 Select the Hand tool. The pointer becomes a hand.

2 Drag to make the document follow the pointer; e.g., to move a document up so you can see the bottom, drag toward the top of the screen.

Changing the view magnification

✓ Tip
Zooming changes the view on screen, but doesn't change the actual size of anything in the document.

You can change your view of a document by changing the view magnification. Zoom in to enlarge objects or zoom out to see a larger area.

You can zoom with the Magnifying Glass tool, the Zoom controls, and Zoom commands. You can use magnification levels from 0.0001 to 102400 percent. Normal magnification is 100 percent.

- **To use a command to zoom:** Choose Layout > Views > Zoom In or Zoom Out. Zoom In increases magnification to the next higher preset level; Zoom Out decreases magnification to the next lower preset level.

- **To enter a zoom percentage:** Choose Layout > Views > Zoom, or press Ctrl and the slash key (/). Enter a zoom percentage from 0.0001 to 102400 in the dialog box and press Enter or click OK.

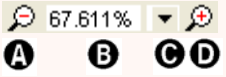
Using zoom shortcuts

You can use keyboard shortcuts to zoom in and out.

To zoom in with any tool selected, press Ctrl+Spacebar and click or drag a box around an area; to zoom out, press Ctrl+Shift+Spacebar and click or drag a box around an area.

To zoom in directly, press Ctrl+Alt+Plus (+). To zoom out, press Ctrl+Alt+Minus (-).

Using the Zoom controls



A Zoom out
B Magnification level field
C Zoom menu icon
D Zoom in

You can use the Zoom controls at the bottom left of the document window to adjust the view magnification. The Zoom controls display the current magnification and let you change magnification.

- **To zoom to the next preset magnification level:** Click the Zoom-in or Zoom-out button. The Zoom-in button increases magnification. The Zoom-out button decreases magnification.

- **To open the preset magnification menu:** Click on the menu icon and the zoom menu pops open. Select a magnification level.

- **To enter any magnification percentage:** Type the magnification percentage in the Magnification Level field of the Zoom controls.

Using the magnifying glass

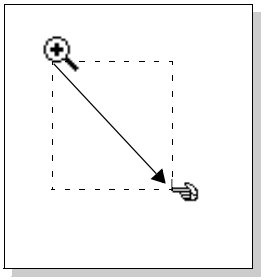
Use the Magnifying Glass tool to zoom in and out from an area that you select in the document.

1 Select the Magnifying Glass tool. The pointer becomes a magnifying glass with a + sign.

2 Click the center of the area you want to magnify. Canvas zooms to the next preset magnification level and centers the view at the point you clicked.

3 To reduce rather than magnify, Shift-click the area you want to center on screen at reduced magnification.

- **To magnify an area to fill the screen:** With the Magnifying Glass tool, drag a box around the area you want to magnify.



Using Views commands

You can use Views commands to quickly change your view of the current document. Choose the following commands in the Layout > Views submenu.

Home view Displays the upper-left corner of the document at normal (100 percent) magnification.

Fit to Window Reduces or increases magnification to the maximum magnification level for the layout area to fill the document window.

Fit to Selection Reduces or increases magnification to the maximum magnification level for the selected objects to be visible in the document window.

Fit to Objects Reduces or increases magnification to the maximum magnification level for all objects on the current page, sheet, slide, or frame to be visible in the document window.

Using custom views

You can create custom views to save the current magnification level and position in the document.

- **To create a custom view:** Choose Layout > Views > New View. The New View dialog box opens. Enter a name for the view and click OK. The new view will appear beneath Home View in the Layout > Views submenu.

A checkmark appears next to the view name when a custom view is selected. Canvas assigns shortcut keys (which appear in the menu) so you can quickly select the custom views you have created.

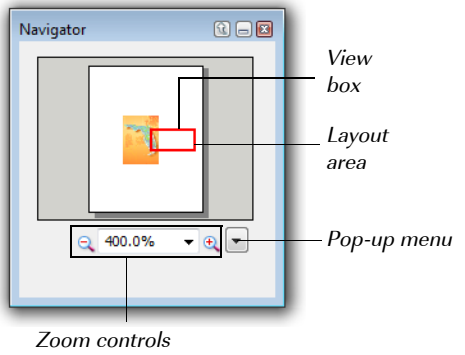
- **To delete a custom view:** Choose Layout > Views > Delete View. If only one custom view exists, Canvas deletes it.

If more than one custom view appears in the Views submenu, the Delete Views dialog box opens. Select a view and click OK. Canvas removes the selected view from the Views submenu.

Using the Navigator palette

The Navigator palette provides an overview of a document. You can use this floating palette to scroll the document and zoom in and out.

- **To display the Navigator palette:** Choose Window > Palettes > Navigator.



Zooming and scrolling

The Navigator palette shows a reduced-size view of the entire layout area. A red rectangle, the *View box*, represents the current view position in the document. The box is small when you zoom in to view details and becomes large (relative to the layout area) as you zoom out.

✓ **Tip**
To quickly change the view area, click within the Navigator palette. The view box moves to where you click and the layout area shifts as well.

- **Scrolling:** In the Navigator palette, move the view box to change your view of the layout area. Drag the view box to the part of the layout area you want to see; e.g.;to see the top of a page, drag the view box to the top of the layout area.

- **Zooming:** You can use the zoom controls to change the magnification level. Type a number in the text box to change the magnification level. Type a higher number to zoom in or a lower number to zoom out. Normal magnification is 100%.

Click the Zoom-in button on the right to double the magnification level. Click the Zoom-out button on the left to reduce magnification by half.

The Zoom controls are at the bottom of the document window (see "Using the Zoom controls," page 9.19).

View options

You can choose view options from the Navigator palette menu. This menu contains the same commands as the Layout > Views submenu. You can choose Home View, Zoom In, and Zoom Out, custom views that you have saved, and commands that make all objects or the entire layout area visible in the window.

Using expressions for numeric values

You can type basic mathematical expressions to specify numeric values in Canvas dialog boxes and palettes. You can use addition, subtraction, division, and multiplication operators in simple expressions; e.g., you can type a fractional value, such as 2/3, in place of a decimal value.

To type an expression

To enter operators in expressions, type a plus sign (+) for addition; a minus sign (-) for subtraction; a slash (/) for division; and an asterisk (*) for multiplication.

You can type parentheses to nest values and operators in expressions. Do not type an equal sign in an expression.

Canvas calculates the result of a mathematical expression when you press Tab or Enter, or click an Apply button, or move to another value in a dialog box.

To modify a value

To use an existing value in an expression, click after the number to place an insertion point. Then, type the remainder of the expression; e.g., to make the width of an object 3 times larger, click after the existing value and type * 3, and then press Enter. To make the value one-third as large, type / 3.

By entering expressions after existing values in the Transform palette, you can move objects incrementally; e.g., to move an object 3/4 inch to the right, type + 3/4 after the X value.

Specifying measurement units

In most dialog boxes, you can type abbreviations to specify measurement units. You can use this feature to override a document's measurement units or the specific measurement units used in these dialog boxes.

For example, when inches is a document's unit of measurement, you can type 1 cm to specify 1 centimeter. Canvas converts 1 cm and displays it as .3937 inches.

The following are the abbreviations you can type to specify a unit of measurement.

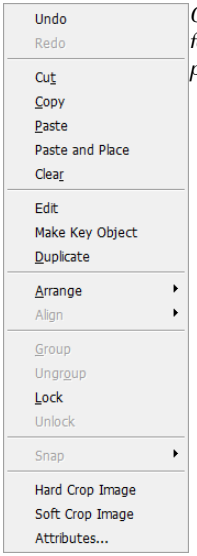
Abbreviation	Unit of measure
in	inches
ft f	feet
y	yards
mi	miles
p	picas
pt	points
mm	millimeters
m	meters
km	kilometers
cm c	centimeters

To use an abbreviation for a measurement unit

In a text box that accepts numerical values, type a value followed by the abbreviation for the measurement unit. Canvas converts the numerical value to the measurement units you are using in the document when you press Tab or Enter, or click an Apply button, or click in another edit box.

You can even type a mathematical expression using more than one measurement unit; e.g., you can type 1p+1cm.

Using context-sensitive menus



Context menu for a selected paint object

Canvas has context menus that you can pop up in the drawing area, giving you quick access to common commands. The menus are context-sensitive; the available commands depend on the current operation.

Choose common editing commands, such as Cut, Copy and Paste, when an object is selected. Other commands are available when an object is in edit mode; e.g., image-editing commands appear in the context menu when you edit a paint object. Path-editing commands appear when a vector object is in edit mode.

When no objects are selected, you can choose view commands such as Zoom In, Zoom Out, Show Rulers, and Show Guides. If the Clipboard contains objects or text, you can choose Paste. You can choose Undo after performing an action that can be undone.

Using context menus

To apply a command to an object, select the object first. To use other commands, you do not need to select an object before displaying the context menu.

Click the right mouse button. A context menu appears. Click a command in the menu to choose it.

When you are editing an object, you can point to a specific item to display commands for editing that item; e.g., if you point to an anchor point on a path, you can choose commands to modify the anchor point in the context menu.

For information on specific commands that appear in the context menu, refer to the command name in the Index.

CHAPTER 10

DOCUMENT SETUP

When you create a new Canvas document, you select a document type. Then you specify the document size and other options.

This chapter explains how to create new documents and how to set up document rulers, drawing scales, guides, and alignment grids.

Creating new documents

When you want to create a new document, use the New command and tell Canvas to create an Illustration, Publication, Presentation, or Animation document. Whenever you launch Canvas, choose File > New, or click the New document icon, the Startup dialog box appears. You can create a new document, open documents, or access recent documents. You also have links to tutorials, online forums, knowledgebase articles, among others.

- **To disable the Startup dialog box:** Select the *Do not show me this screen again* checkbox. When the Startup dialog box is disabled, the New Document dialog box opens when you launch the application, choose File > New, or click the New document icon (see "New Document dialog box" on page 10.2).
- **To enable the Startup dialog box:** Choose Help > Startup dialog.

If you start Canvas by double-clicking a document icon, Canvas opens the document without creating a new document.

You can create new documents any time, even with other documents open. The number of documents you can have open at the same time is limited only by the amount of memory available on your system.

To create a new document via Startup dialog box

1 Select the document type in the Startup dialog box.

2 Modify the document by using the options in the Properties bar or in the Document Setup manager (see "Document Setup options" on page 10.5).

To create a new document via the New Document dialog box

This option is available if you have disabled the Startup dialog box.

1 Choose File > New or click the New document icon.

2 Select the document type in the New Document dialog box.

3 Select options for the new document (see "New Document dialog box" on page 10.2)

4 Click OK to create the document.

New Document dialog box

In the New dialog box, choose a document type, select a template, specify document size, and choose measurement units.

The items that you define in this dialog box can be modified via the Properties bar or Document Setup manager (Layout > Document Setup).

A Type of document. Depending on your choice, the dialog box may offer more or fewer options; i.e., Publication offers Margin settings, rather than a Drawing scale, as well as a layout menu.

Facing pages. For a Publication document, select this option to specify a document with facing (two-sided) pages. A facing-pages document has a master page with left and right pages.

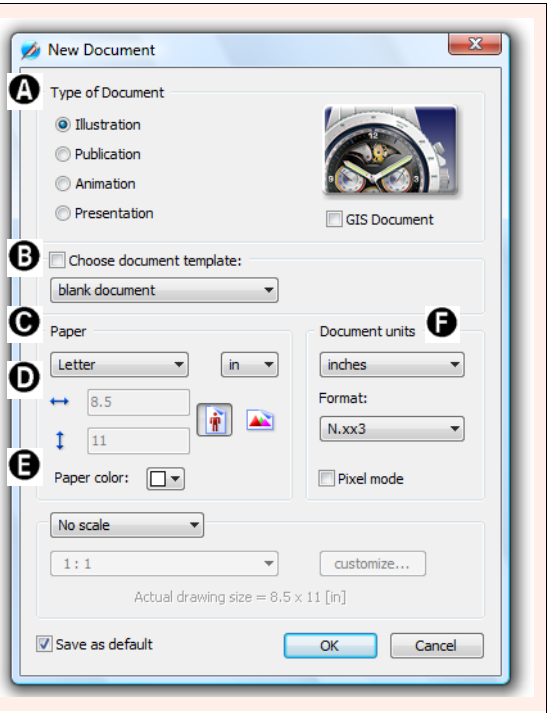
GIS Document. Select this checkbox to work with a GIS document. Once you click OK, the GIS manager opens in which you configure the GIS settings. This option is only for Illustration documents.

B Use a template instead of choosing a document type and defining page size and orientation. Select templates for illustrations, publications, or presentations (see "Using document templates" on page 10.4).

C Paper. Define the document size and paper unit. The maximum document size is 2000 miles x 2000 miles. Select preset sizes, or set the document size to the printer paper, or enter a custom size. To set up a custom size, choose Custom and enter the width and the height. Select the paper unit from the menu.

D Page orientation. To change the orientation of the document, click the button. This swaps the width and height values.

E Drawing scale. Select one of the preset scale options or create a custom scale (see "Setting up rulers," page 10.7).



F Document units. Choose the measurement units for the rulers (see "Setting up rulers" on page 10.7).

Pixel mode. This setting allows you to view graphics at 72 ppi before they are rendered.

Save as default. Select this checkbox if you consistently work with the same document type and layout.

Choosing a document type

When you create a new document, you can select an Illustration, Publication, Presentation, or Animation document.

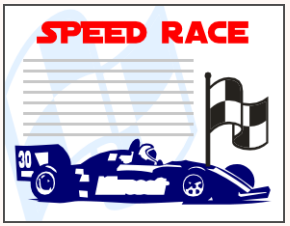


Illustration documents

Illustration documents are general-purpose documents for all types of illustrations and graphics. You can specify a custom document size, and the document can have multiple pages (called "sheets"), with multiple layers on each sheet.

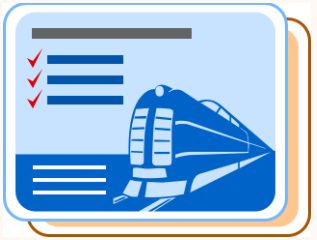
Use the Page menu at the bottom of the window to move another sheet.



Publication documents

Publication documents are designed for publications printed with two-sided (facing) pages, although you can also create a Publication that has pages with single sides. You can use master pages to hold items that you want to appear throughout the publication. You can also use multiple layers on each page.

When the active document is a Publication, you can use the Page menu to move among the document's pages.

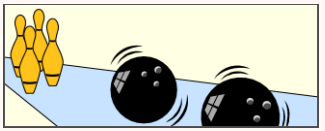


Presentation and Animation documents

Presentation documents are designed for on-screen "slide show" presentations. Animation documents are designed for creating animation files.

In Presentation documents, you can use multiple layers and a master slide to hold background elements. You can use more than a dozen transition effects, including wipe and dissolve, during slide show playback.

When the active document is a Presentation, you can use the Page menu to easily move among the slides.



An Animation document is designed for creating and editing web (GIF) animation files. An animation is composed of multiple *frames*, which are equivalent to the image frames of film-based animations.

You can use "onion-skinning" in an Animation document. When you select onion-skinning, frames adjacent to the current frame appear in the background. This is helpful for setting up object movement in an animation.

Using document templates

Templates are special Canvas documents that you can use as the basis for new documents. When you select a template in the New dialog box, Canvas creates a new document containing the graphics and text in the template and uses the template's settings for layers, slides, pages, rulers, grids, guides, views, and default object attributes.

How is a template different than a regular Canvas document? When you choose a template in the New dialog box, Canvas creates a new document based on the template, but doesn't actually open the template file. When you make changes to the new document and save it to disk, the changes don't affect the template.

Canvas treats a template in a similar way when you open one by double-clicking its icon or using the Open command. In either case, rather than open the actual template document, Canvas makes a new document based on the template's document type and contents.

Templates, like regular Canvas documents, are various types: Illustration, Presentation, Publication, and Animation. In the New dialog box, the templates listed in the Use Template pop-up menu match the document type selected in the Type of Document area (see "New Document dialog box" on page 10.2).

Setting up documents

After you create a document, you can use the Document Setup manager in the Configuration Center to change the document type, measurement units, size, orientation, and other options (Layout > Document Setup).

The Document Setup manager present similar options for each type of document, with some specific options for a particular document type; e.g., in a Publication document, you can set facing pages and page margins. In a Presentation document, you can specify screen size.

To set up a document

1 Choose Layout > Document Setup.

2 The Document Setup manager opens. Select the options you want and click OK.

Document Setup options

The following options are available in all document types, except as noted.

Document Units

Choose an option in the Document Units pop-up menu. The unit you select will be used in the rulers.

Document Size

You can set the document size to match the paper in your printer, or set up a document based on a standard or custom size. The controls for document size are labeled according to the type of document (Illustration, Publication, and so on).

To use a standard size, choose an option from the pop-up menu. You can choose standard sizes based on the document type.

From Printer To base the dimensions of the layout area on your printer's page size, choose From Printer. The layout area will match the settings in the Page Setup dialog box. For more information, see "Matching documents to printer pages" on page 10.6.

Custom To specify custom dimensions, choose Custom. Type the width in the first box and the height in the second box.

From Screen In Presentations and Animations, you can base the size of the layout area on the monitor's size. To do this, choose From Screen.

Orientation

To change the orientation of the document, click the button in the Orientation area. This swaps the width and height values of the document.

Margins

To set margin size for two-sided Publications, enter the Inside, Outside, Top, and Bottom margins in the text boxes in the Margins area. For single-sided Publications, enter Right, Left, Top, and Bottom margins. The margin is measured from the edge of the paper. Margins are not available in other document types.

On screen, the document's margins appear as a dashed line. The page boundary appears as a solid line around the edge of the layout area. Make sure the margins are not outside the page boundary (see "Matching documents to printer pages" on page 10.6).

✓ Tip

For illustrations larger than the current paper size, toggle the Breaks option in the Properties bar to see or hide page breaks. A line around the layout area indicates page boundaries.

Page Layout

To specify multiple pages per sheet in a Publication, choose Tent Card or Greeting Card in the Sheet Layout pop-up menu.

Facing Pages

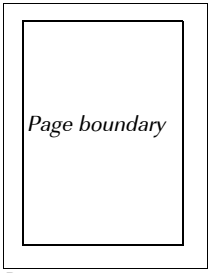
To create double-sided pages, select Facing Pages. When Facing Pages is on, the document has a left and a right master page that you can apply to its left-hand and right-hand pages. This option is available in Publication documents only. Note that once you select Facing Pages for a Publication, it cannot be undone or changed to another document type.

Paper Color Lets you apply a solid color to the document layout area. The paper color is for display purposes only and does not print. To apply a paper color, select a color from the pop-up palette.

Note: When objects are partially transparent, the paper color is visible through the objects. However, while the paper color is not visible through solid objects, in the real world, the colors of objects will be affected by the color of the paper they are printed on; e.g., a yellow circle printed on blue paper will appear green. This is not shown on screen in Canvas when you use the Paper Color option.

Canvas includes the paper color when it renders transparent objects, so the paper color affects the rendered image the same as it does on screen in Canvas.

Matching documents to printer pages



Paper

Selecting “From Printer” in the Document Setup dialog box tells Canvas to use the page information from the Page Setup dialog box. Canvas sets the orientation and dimensions In the Document Setup dialog box to match the selected page size.

When From Printer is selected and you change the page settings, Canvas changes the dimensions of the document to match. You can choose File > Page Setup to change the paper size, or its orientation; Canvas will update the dimensions of the document and you do not have to choose Layout > Document Setup.

✓ Tip
If working with a large document, you can define a printable area (see "Printable area" on page 8.11). You can then toggle the Printable area option in the Properties bar.

When the document type is Illustration, and you select From Printer, the document size is equal to the *printable area* or page boundary of the paper selected in the Page Setup dialog box. For all other document types, the document size is equal to the *paper size*, rather than the page boundary.

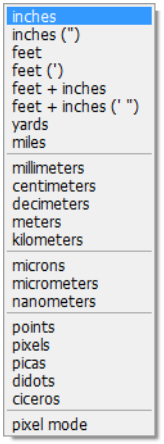
On most printers, the page boundary is smaller than the paper size. Illustration documents are sized to the page boundary, so illustrations will fit on the paper without being scaled. You should note that the page boundary on many printers is not centered exactly on the paper.

✓ Tip
To see or hide the page boundary, you can toggle the Breaks option in the Properties bar. Canvas indicates the page boundary by a solid line around the border of the page.

Canvas takes scaling into account when it sets the document dimensions and you specify a scaling factor in the Page Setup dialog box; e.g., if you specify 50% scaling, the document size will be twice the page size (or twice the page boundary size in an Illustration).

When From Printer is selected, Canvas checks the Page Setup information each time you open the document. If necessary, it adjusts the document's dimensions to match the page information.

Setting up rulers



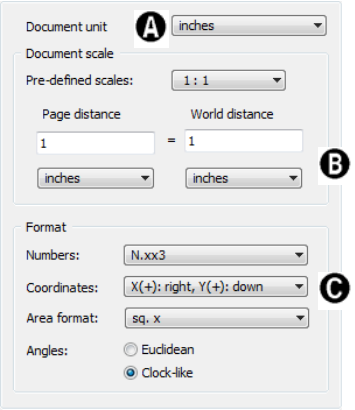
You can set up rulers for a document using various units of measure and display the rulers at the top and left of the document window. Rulers help you track the pointer's movement and let you create alignment guides in the layout area.

When you create a new document, you can also set the document's drawing scale. Canvas bases the rulers and all object measurements on the drawing scale. Canvas uses scale measurements in the Object Specs palette, Properties bar, and in Dimension objects.

- **To display and hide rulers:** Toggle the Rulers checkbox in the Properties bar. The rulers must be displayed if you want to create alignment guides in the layout area.

To set up rulers

The rulers can be defined in the New Document dialog box or by choosing Layout > Rulers to open the Rulers manager.



1 Choose Layout > Rulers. The Configuration Center opens with the Rulers manager displayed (see "Setting preferences," page 12.1).

2 Select a unit of measurement from the menu (**A**). This unit is displayed in the rulers, Object Specs palette, as well as Properties bar.

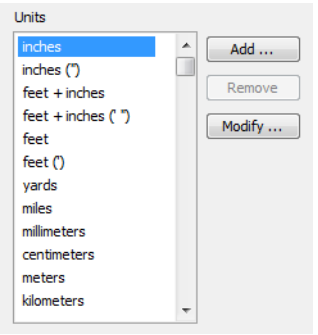
3 Define the drawing scale in the Document scale section (**B**), if necessary. You can use the Pre-defined scales or establish a custom scale; e.g., if you set the drawing scale to 1 inch = 1 foot, and draw a line 1 inch long on screen, Canvas displays the line's length as 1 foot (see "Defining a drawing scale," page 12.20).

4 Choose the formats (**C**) for the numbers, angles, and coordinates. For the number format, you can choose from no decimals to six decimals, or even use exponentials or fractions.

5 After you configure all ruler settings, click OK.

Adding and modifying units of measurement

You can further customize the rulers by adding units of measurements or modifying the definitions of existing ones.



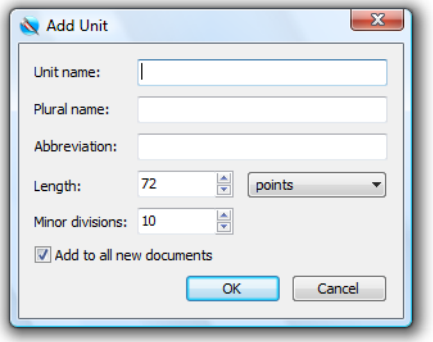
Note: The Add unit feature is a document-based function; i.e., any units that you add pertain to that particular document and will not be available when you open another document.

To access these functions, choose File > Configuration Center to open the Configuration Center. Under the Measurements manager, click on Define unit.

- **To delete a unit of measurement:** Select the unit in the menu and click the Remove button.

To add a unit of measurement

1 Click the Add button. The Add unit dialog box opens.



2 Enter the Unit name, Plural name, as well as Abbreviation.

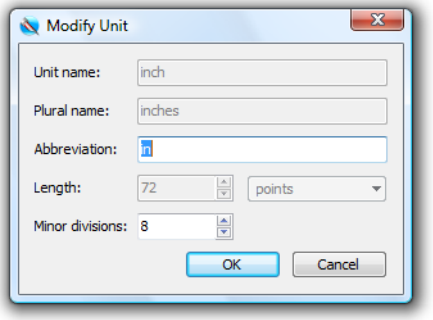
3 Set up the new unit's drawing scale by using the Length and Minor divisions controls.

4 Click OK to add the unit to the menu.

To modify a unit of measurement

Note: You cannot change the unit name or plural name.

1 Click the Modify button. The Modify unit dialog box opens.



2 Change the unit's Abbreviation, if needed.

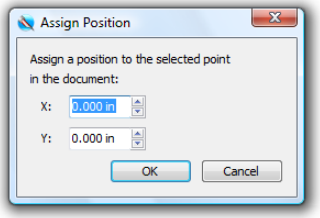
3 Set up the unit's new drawing scale by using the Size and Subdivisions controls.

4 Click OK to close the dialog box.

Assigning X/Y position to points

If you are trying to recreate a portion of an illustration, you may need to move the zero points or assign an X/Y position to a specific point in the drawing area.

To assign a position



1 Place the cursor over the intersection of the rulers in the upper left corner. The cursor changes to a double-sided arrowhead.

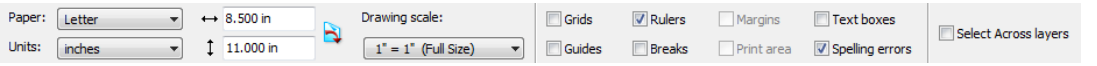
2 Click and drag the cursor to the location in the Canvas work area where you want to assign the X/Y position. The Assign Position dialog box appears.

3 Enter the X/Y coordinates in the fields or use the scrollboxes.

4 Press OK. The Rulers shift to reflect the assigned position.

To change rulers

You can change the current document unit and drawing scale by using the Units and Drawing Scale menus in the Properties bar. To view these items, deselect all objects.



To use 'tear-off' rulers

When rulers are displayed, you can move a copy of a ruler into the layout area to measure specific areas of an illustration. When you tear off a ruler and move it, Canvas takes a snapshot of the ruler and pastes it into the document as a paint object. A tear-off ruler isn't active like the rulers displayed at the window edges.

- **To place a tear-off ruler in a document:** Point to the ruler you want to tear off, press Alt and drag a copy of the ruler into the document.

Document Scale methods

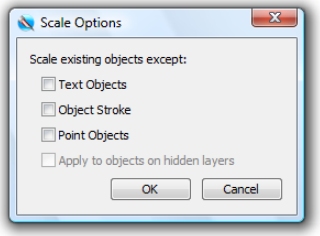
Canvas features scaling options that will certainly be useful to those who work with large documents, such as shapefiles. When selecting certain options, the Scale Options dialog box appears. When select-

ing the Set Document Scale command, the Define Document Scale dialog box opens.

- **To view these scaling methods:** Choose Layout > Document Scale.

Note: When you use either method in a geo-referenced document, the GIS referencing is adjusted.

Scale Options



This dialog box appears when you choose Crop And Fit To Sheet, Fit All Objects To Sheet, or Fit Selection To Sheet. If you do not wish to scale a certain object, select its respective checkbox.

You also have the option of applying this command to objects on hidden layers.

Note: If you leave a checkbox deselected, the corresponding object(s) are scaled once you click OK.

What is a point object?

A point object represents a geometric shape that consists of a single point. You can select vector objects in your document and switch their status to point object.

If you were creating a floor plan and had created small vector objects that represent items such as tables, chairs, lamps, etc., you would probably not want them to change size if you decide to change the scale. Therefore, you could select them and assign them the point object status.

Switching to point object status

1. Select all objects to be changed.
2. Choose Object > Options > Treat as point object to assign the point object status. When you select an object that has point object status, Point Object is indicated in the Status bar.

To remove the point object status

1. Select all point objects to be changed.
2. Choose Object > Options > Treat as regular object. The object returns to its previous status; i.e., vector object.

✓ Tip
The document scale and origin are adjusted so that object position and dimensions are preserved. In a GIS document, the geo-referencing information is also preserved.

Crop And Fit To Sheet

When applied, a hard crop is performed and the resulting object(s) is scaled proportionally. This command can be used on both image and vector objects.

- **To crop and fit to sheet:** Drag the crosshair diagonally across the objects to form a cropping rectangle. Place the cursor within the cropping rectangle and click to complete the crop.

Note: You can move or resize the cropping rectangle, if necessary.

Fit All Objects To Sheet

When applied all objects within the document will be scaled proportionally. The objects are contained within the bounds of the top and bottom of the document.

Note: If the document contains 5000+ objects, a warning dialog box appears. All previous operations, including Fit All Objects To Sheet, cannot be undone.

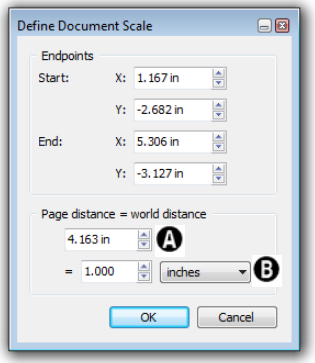
Fit Selection To Sheet

When applied, the selected object(s) will be scaled proportionally. The objects are contained within the bounds of the top and bottom of the document.

Set Document Scale

You can use this command to customize a document's drawing scale, which is useful if you are working with objects that have known measurements.

To use the Set Document Scale command



1 Choose Layout > Document Scale > Set Document Scale. The Define Document Scale dialog box opens. The cursor changes to a crosshair.

2 Click the crosshair once to establish the scaling start point.

3 Click a final time to set the scaling end point. The resulting distance is indicated in the Page distance field. The Define Document Scale dialog box opens. The first value (A) is the distance that you measured. The unit of measurement corresponds to the ruler's unit of measurement.

4 Enter the custom scale in the bottom field (B) and select the unit of measurement from the menu.

5 Click OK.

Scale bar

The Scale Bar command draws a labeled scale bar. Scale bars are included in a variety of illustrations and images.

Note: The labels on the scale bar are created using the default text settings. Although you can change the text appearance afterwards, you should establish the text settings before making the scale bar.

- **To open the Create Scale Bar dialog box:** Choose Object > Create Scale Bar.

Create Scale Bar dialog box

The current document scale is indicated at the top of the dialog box.

Units Select a primary unit from the menu. The primary unit is displayed above the scale bar.

Secondary Units If necessary, select a secondary unit. The secondary unit is displayed below the scale bar.

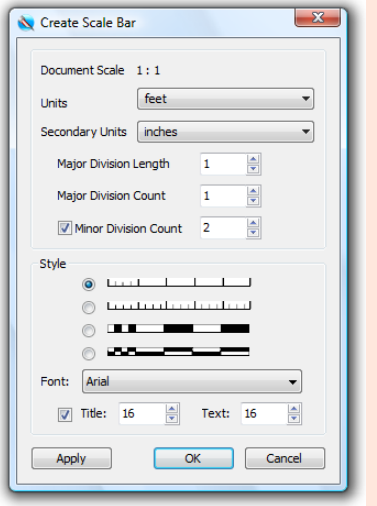
Major Division Length Enter the desired length for the scale bar.

Major Division Count Enter the number of major divisions for the primary unit.

Minor Division Count Select the checkbox and enter the number of secondary divisions for the primary unit.

Style Select a option for the scale bar's appearance.

Font Select a font for the scale bar. Select Title to indicate the current document scale above the scale bar. If Title is enabled, you can control the point size. Use the Text control to change the point size for the scale bar labels.

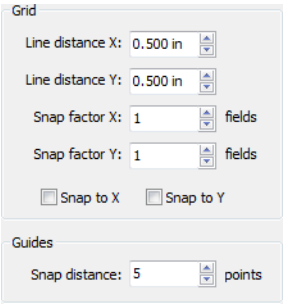


Using the alignment grid

You can display a grid of vertical and horizontal lines to aid in positioning objects in a document. You can also turn on the snap-to-grid feature to make Canvas snap objects into alignment with the grid when you drag near a grid line.

When snap-to-grid is active, the pointer movements snap to the grid according to the settings in the Grids manager.

- **To display grids:** Select the Grids checkbox in the Properties bar. You can also choose Layout > Display > Show Grids.
- **To turn off grids:** Deselect the Grids checkbox. You can also choose Layout > Display > Hide Grids.
- **To turn on snap-to-grid:** Choose Layout > Snap To > Grid. Choose the command again to turn off snap-to-grid.
- **To temporarily override the grid constraint:** Press Tab as you create, resize, or move objects.



To set up the alignment grid

Use these settings to create an alignment grid (see "Grids and guides" on page 12.19).

1 Choose Layout > Grids. The Grids manager appears.

2 Enter a value in the Line Distance X: Units text box.

3 Enter a value in the Line Distance Y: Units text box.

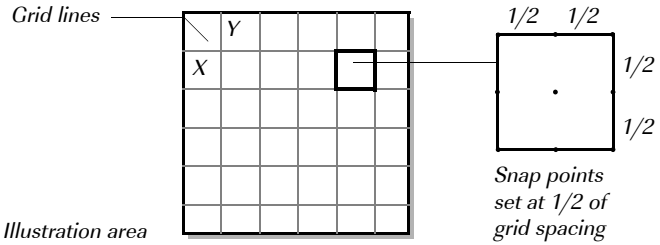
4 Enter a value in the Snap Factor X: Fields text box.

5 Enter a value in the Snap Factor Y: Fields text box.

You can enter decimal or fractional values; Canvas converts fractional values to decimal values; e.g., if the Line Distance is 1 inch, a Snap Factor of 1/2 Fields sets snap points every 1/2 inch.

6 Select Snap to X and Snap to Y to make objects snap to the snap points on both sets of grid lines.

7 Click OK to implement the grid settings.



Using alignment guides

You can create alignment guides and alignment objects. Other objects can "snap" to alignment guides and objects.

Alignment guides are horizontal and vertical lines you drag into a document from the rulers. When you create alignment guides, Canvas places the guides on a guide layer.

You can also create guide objects from any vector objects. Guide objects are placed on a guide layer; e.g., if you draw a rectangle on a guide layer, objects can snap to the sides of the rectangle.

Alignment guides and objects normally do not print, because the guide layers are set to be non-printing.

- **To show or hide guides:** Toggle the Guides checkbox in the Properties bar. Deselect any objects to view the checkbox. You can also choose Layout > Display > Show Guides or Layout > Display > Hide Guides.
- **To activate snapping to guides:** Choose Layout > Snap To > Guides. When the snap-to feature is active, objects you move will snap to alignment guides and objects on guide layers.

To set up alignment guides

1 Display the rulers by selecting the Rulers checkbox in the Properties bar.

2 Point to either ruler and drag a guide into the document area.

- **To remove a guide:** Drag the guide back to its ruler.
- **To move objects touching an alignment guide:** Press Ctrl as you drag an alignment guide. This method does not apply to alignment objects on a guide layer.

To set up alignment objects

1 Select one or more vector objects.

2 Choose Object > Arrange > Send to Guide Layer. Canvas moves the selected objects to the guide layer on the current page.

✓ **Tip**
If you move an alignment object off a guide layer, its original attributes reappear.

The ink and stroke attributes of guide objects are overridden by default on guide layers. Guide objects appear with a blue pen ink, a 1-point stroke, and no fill ink.

You can edit guide objects without moving them off a guide layer; e.g., you can select a guide object, drag its selection handles, use freeform mode to transform it, and use edit mode to reshape it.

To position guides numerically

After you place a guide line in a document, you can set its position numerically.

1 Double-click an alignment guide to open the Guides dialog box.

2 Select Horizontal or Vertical to set the guide's orientation.

3 Enter the Guide position in the text box. Positive values go down and to the right from the zero point. Negative values go up and to the left.

4 Click OK.

When you enter a value for the position of a guide, you can use the current measurement units, or enter a unit abbreviation; e.g., to place a vertical guide 3 inches to the right of the zero point, type "3in" (without quotes) if the current units are not inches. To set a horizontal guide 2 picas above the zero point, type "-2p".

CHAPTER 11

DOCUMENT LAYOUT

You can use multiple pages and layers in any document as well as set up master pages, shared layers, guide layers, and grid layers. Layout options also include slide transitions and timing for GIF animations (see "Creating slide shows," page 36.1 and "Working with animated GIFs," page 35.21).

This chapter describes document layout options and procedures, including how to add, delete, and arrange pages and layers, and use the Document Layout palette.

About document pages and layers

You can create four types of documents in Canvas: Illustrations, Publications, Presentations, and Animations. The common elements of all document types are pages and layers.

Pages

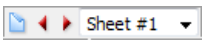


Layout area

All Canvas documents can contain multiple pages. Here, "pages" is used as a general term for elements that make up a document.

- Publications can have single or facing pages.
- Illustrations have pages, called "sheets," which are single-sided.
- Presentations have pages, called "slides," which can be displayed in sequence as "slide shows."
- Animations have pages, called "frames," which form animation sequences for animated GIF files.

In the Document Layout palette, pages are at the top level of the layout hierarchy, followed by layers, groups, and objects.



The Layout area in Canvas represents a document page. Page and layer controls are located below the document window. The current page is shown in the Page menu (see "Page & layer controls" on page 11.7).

Layers

A layer is a transparent level that objects are placed on. Pages are made of one or more layers. When you place or draw objects on a page, you actually place the objects on the page's layers.

In the Document Layout palette, a page's layers are listed after the page name. Objects are listed after the layer they are on. A new page has one layer (Layer #1). You can add layers to any page, including master pages.

Layers can help you work efficiently. You can organize objects on layers, and you can display, print, and save layers individually.

You can save time and resources by sharing layers in a document. A *shared layer* is similar to a master page. As with a master page, objects on a shared layer appear on every page where the shared layer is applied. You can update multiple pages by editing a shared layer.

Master pages

Master pages are special types of pages. The objects on the master page's layers can appear on every page in a document.

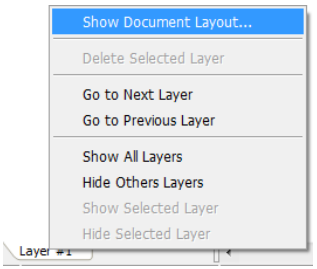
In the Document Layout palette, the master page and its layers are listed under each page where the master page is visible. The main master page is at the top of the list.

Master pages are available in Publication documents. Similar elements called "master slides" are available in Presentation documents, and "master frames" are available in Animation documents.

By selectively hiding layers of the master page, you can control the master page appearance throughout a document or on selected pages. The master page at the top of the layout list can be locked.

Using the Document Layout palette

The Document Layout palette is the control center for working with pages, layers, and objects. The palette is available in all types of documents (some options are based on document type).



To open the Document Layout palette

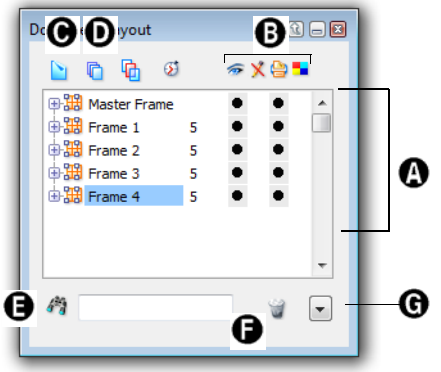
Choose Layout > Document Layout. You can also right-click on a Layer tab at the bottom of the document window to open the Layer menu. Select Show Document Layout.

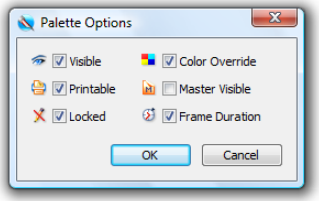
The palette shows a list of the pages, layers, and objects in the current document. You can use the palette to add, delete, and move items and set layout options. You can select, move, copy, and delete objects.

The Document Layout palette floats, so you can place it anywhere on screen. You can dock the palette on the Docking bar. To expand the palette, drag the grow box below the scroll bar.

The Document Layout palette lets you select and set options for pages, layers, and objects

A Layout list
B Options columns
C New page
D New layer
E Search box
F Trash
G Palette menu





Tip
We recommend that you select Master Visible to facilitate working with master pages.

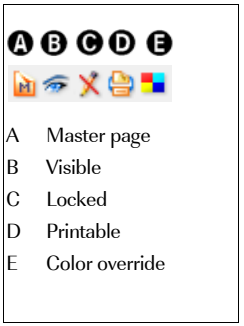
Setting options in the palette

The Document Layout palette has columns of settings for several options: master pages, visibility, locking, printing, layer override colors, and animation frame duration.

To display/hide option columns, choose Palette Options in the palette's menu. In the dialog box, select the options that you want to appear in the Document Layout palette. Some options are not available in all types of documents.

Options columns

The following are the options you can change by clicking options columns in the Document Layout palette. You can also use dialog boxes to change options (see "Using options dialog boxes," page 11.8).



A Master page
B Visible
C Locked
D Printable
E Color override

Master page Click to show or hide the master page on a document page. If the master page is hidden, a hollow circle with grey outline appears in the column. When the master page is visible, the hollow circle has a blue outline. Master pages are not available in Illustration documents.

You can hide master page layers using the Visible option. Hiding all master page layers is the same as hiding the master page.

Visible Click to show or hide a page, layer, or object. Hiding a page hides all its layers (unless one is the current layer). When something is hidden, a hollow circle appears in the Visible colomn. If the object is visible, a blue-filled circle appears in the column.

Locked Click to lock or unlock a page, layer, or object to prevent or allow changes. A bullet indicates an item is locked and its contents can't be selected, moved, edited, or deleted. Grid layers are always locked. A padlock icon indicates an item is also password-protected.

Printable A bullet indicates an item will print. When no bullet appears, the item will not print. If you change this option on a page, the setting is applied to all the page's layers.

Color Override Click in the column to apply an override color to a layer. A square with the override color appears in the column. To select an override color in the Layer Options dialog box, double-click the layer name. To hide a layer's override color, click in the column to remove the color square.



Frame Duration In Animation documents, this column shows the duration of a frame in hundredths of a second. To change the frame's duration, double-click the frame name, change the duration value in the Frame Options dialog box, and click OK.

Using the layout list

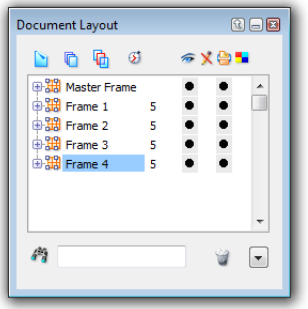
You can use the list in the Document Layout palette to display and select pages, layers, and objects. You can expand the list to display more detail, or collapse it to display fewer items.

Layout list

Items in a document are listed in a tree format in the Document Layout palette.

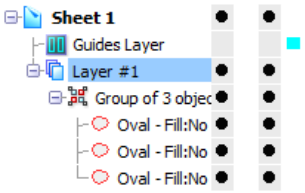
Click a plus to expand the list; click a minus to collapse it.

Ctrl-click an item to toggle the state of its sub-items. If you Ctrl-click a page, its expanded layers will collapse, and its collapsed layers will expand.



Document Layout palette

List hierarchy



The layout list is a hierarchy. Pages are at the top level, followed by layers, then group objects, then individual objects. Each level is indented to the right from the level above. The master page and its layers are listed after a page's regular layers.

The name of the selected item in the list is shaded. The active layer name is **bold**. Names of master layers, shared layers and objects on shared layers are *italic*.

- **To expand or collapse one level in the list:** Choose Expand All or Collapse All in the palette's menu. The current level (pages, layers, or object groups) will expand or collapse. You can also Alt-click in the list to do the same thing.

Selecting items

You can select one or more items at once in the layout list. The name of a selected item is shaded.

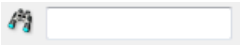
- Selecting a page makes it the current page. The last current layer of the current page will be the current layer.
- Selecting a layer makes it the current layer.
- Selecting an object selects the object in the document.
- Selecting any item that is not visible makes the item visible.

- **To select one item:** Click the name of the item in the list
- **To select multiple items:** Click the first item and Shift-click the last item. This selects a continuous range of pages, layers, or

objects. To select or deselect individual items in a selection, press Ctrl-click each item.

Searching for items

Canvas can find items in the layout list by searching their names. This means you can go to pages and layers, and select objects in a document, by typing some or all of the text in an item's name.



To select an item in the list, type the text to find in the search box in the Document Layout palette. When you stop or press Enter, Canvas searches the list from the current page. The search includes only items that are visible in the list (not collapsed pages).

You can type text lower- or upper-case. If an object in the list is named "Rectangle Fill 0c 67m 45y 23k" and you type "23K" Canvas will select the object. Default object names are object type and ink values. Default page and layer names are item type and sequence number. Double-click on a layer, page, and object in the layout list to assign names to these items. Their assigned names will appear in the layout list.

Adding, deleting, and moving pages and layers

To change a document's layout, you can add, delete, as well as move pages and layers. You can do this in the Document Layout palette, use commands in the Layout menu, or use the Page & Layer controls (see "Page & layer controls" on page 11.7). In addition, you can arrange, copy, and delete objects in the Document Layout palette.

To add pages



In the Document Layout palette, click the New Page button. Canvas adds a page, sheet, slide, or frame to the end of the document. In the list, the item's name is the next number in sequence.

You can also add pages by choosing Add Page (Sheet/Slide/Frame) in the palette's menu.You can assign a name to the page in the dialog box.

To add multiple pages

Commands in the Layout menu let you insert multiple pages into a document.

1 Choose Insert in the Layout > Pages (Sheets/Slides/Frames) submenu.

2 A dialog box appears. Enter the number of pages you want to add, choose a location to insert the new pages, and then click OK.

To add layers

In the Document Layout palette, select a page or layer and click the Add Layer button. Canvas adds a new layer to the current page. You can also click the New Layer icon at the bottom of the document window (see "Page & layer controls" on page 11.7).

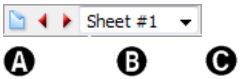
In addition, you can add layers by choosing open the Document palette menu and selecting Add Layer. A dialog box lets you change the layer's name and select other options (see "Page and layer options" on page 11.8).

✓ Tip

You can merge layers, which moves objects from a source to a destination layer and deletes the source layer. Click the source layer to select it in the layout list. Shift-click the destination layer. Choose Merge Layers in the palette's menu.

Page & layer controls

Canvas features additional page and layer controls that can be used in addition to the Document Layout palette.



A New page icon
B Page menu
C New layer icon



A First layer
B Next layer (left)
C Next layer (right)
D Last layer

- **To add pages:** Click on the New page icon and the Insert dialog box opens. Enter the number of pages (sheets or slides) and indicate the placement; i.e., before or after a certain page.
- **To add layers to a page:** Click on the New layer icon. Another layer is added automatically to that page.
- **To toggle between pages:** Open the Page menu and select the page that you want to view. You can also use the Page arrows to the left of the Page menu.
- **To toggle between layers:** Use the Layer controls located to the right of the page & layer controls. If your document contains multiple layers, these controls scroll through the various layers.

Arranging items

To move pages, layers, or objects, you can drag them in the layout list. If you drag to a collapsed part of the list, the list expands.

Canvas does not rename layers if you change their order or move them to other pages in the list. If you change the order of pages, Canvas will rename them, unless you have given them unique names.

- **To copy items:** Select one or more items in the palette, and then Ctrl-drag them to a new layer.

To delete items

Drag the items from the list to the Trash icon. You can also delete items by selecting them in the palette and then choosing Delete in the palette's menu.

To delete multiple pages

1 Choose Layout > Pages (Sheets/Slides/Frames) > Delete.

2 In the dialog box, enter the page range to delete and click OK.

Page and layer options

✓ Tip
You can set options for multiple items by selecting them and choosing Options in the palette's menu. Do this to set the duration for multiple frames of an animation, or to apply transitions to multiple slides.

In each type of document, you can set options for pages and layers. Use the Document Layout palette to set some options (see "Setting options in the palette" on page 11.3). Additional options are in dialog boxes.

Using options dialog boxes

In the Document Layout palette, double-click a page, master page, or layer to open an Options dialog box. Or, select the item and choose Options in the palette's menu.

In the Options dialog box, select from the following options and click OK to apply the settings. Some options, as noted, are not available for all items or document types.

Naming items

In the text box, type a name for the item. By default, Canvas names pages and layers based on their order in the list.

Locking items

Select the Locked option to prevent changes to a page's layers, to individual layers, or to individual objects.

Password protection You can select the Password option when Locked is selected. When the Password option is used, the assigned password must be entered to unlock or change the page. To assign a password, select the Password option and type at least three characters in the text box. After you click OK, enter the password in the confirmation dialog box that appears and click OK.

Note: A locked page can be changed in some ways. If a master page is visible, changes to the master page will appear on the locked

page. Also, a locked page does not prevent a document from being deleted. If a locked page is copied, the copy is also locked.

Hiding items

The Visible option can be changed only in the Document Layout palette list. In Options dialog boxes, the Visible option is not available because a current item can't be hidden.

Layer colors

Grayed Select Grayed to make solid color inks of objects on the layer appear to be grayed (desaturated).

Select **Color Override** to apply a color to a layer. Select **White Fill** to apply a white fill ink to vector objects and text objects on a layer that has a color override.

When you apply a color override to a layer, you temporarily assign a color to vector and text objects on the layers you specify. A color override does not affect paint objects. When you turn off the Color Override option, all affected objects revert to their original colors.

The White Fill option lets you control how override colors appear on vector objects. This option doesn't change how override colors appear on text.

When White Fill is selected, Canvas applies the override color to the pen ink of vector objects and applies white as the fill ink; i.e., the override color becomes the color of the stroke of vector objects, while the inside of the object remains white. When White Fill is not selected, Canvas applies the override color as both pen and fill inks.

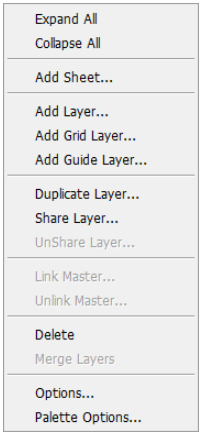
If you use the White Fill option, objects without a visible stroke are not visible against the white layout area.

Sharing layers

Sharing a layer means linking a layer to more than one page in a document. Since the shared layers are linked, if you modify one layer, all the linked layers will change. Therefore, shared layers can be used like additional master pages.

The names of shared layers and objects on them are indicated in italic type in the Document Layout palette.

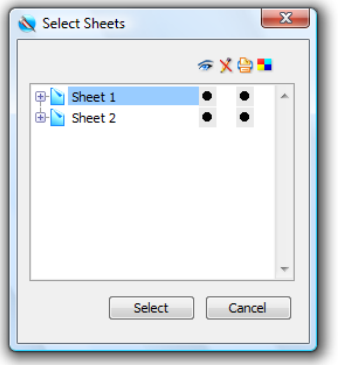
✓ **Tip**
You can share a layer by pressing Shift and dragging the layer to another page (except the master page). Repeat to add the shared layer to other pages.



To share a layer

1 Select the layer you want to share in the Document Layout palette.

2 Choose Share Layer in the palette's menu. A dialog box appears.



3 Select the pages in the list that you want to share the layer and click Select. The shared layer name appears in the list of layers for each page you selected.

Note: The name and content of the dialog box changes according to the document you are creating; i.e., pages, sheets, frames, or slides.

To unshare a layer

Unsharing a layer converts it from a shared layer into a regular, non-linked layer on one page or throughout a document.

1 Select the layer you want to unshare.

2 Choose Unshare Layer in the palette's menu.

3 In the message box that appears, click either Yes or No as explained below:

Yes Unshares all instances of the shared layer in the document. Canvas unlinks the layers and creates a copy of the layer on each page.

No Unshares the layer on the currently selected page only. The rest of the layers remain shared.

Using master pages

Master pages (slides/frames) hold common elements that you want to appear on most pages. Objects on the master page's layers appear on pages where the Master Page option is selected.

Illustration documents do not use master pages.

You can unlink a master page. This lets you edit the page's contents like you would any layer that isn't shared, without changing the appearance of the master page on other pages. Canvas also lets you re-link a master page.

To unlink a master page

1 Select the page where you want to unlink the master page. (Do not select the master page item or a layer).

2 Choose Unlink Master in the palette's menu. The layers of the master page become regular layers of the current page.

To link a master page

1 Select the page to which you want to link the master page.

2 Choose Link Master in the palette's menu. Canvas links the master page to the current page. Other elements on the page are not affected.

Dispersing objects

You can use the Disperse command to quickly move objects to pages throughout a document. This is useful for creating frames and slides. For example, you can select a series of graphics, and use Disperse to place one graphic on each frame in an Animation document. You can spread objects over existing pages or Canvas will create pages for the objects. Dispersed objects are placed on a new layer on each page.

To disperse objects

1 Select the objects to disperse. The objects should be on the same layer and should not be grouped.

2 Choose Object > Arrange > Disperse. In the dialog box, select an option:

- **Dynamic:** Canvas will create pages to hold the selected objects.

- **Selected:** Click Select to display a list of pages. Shift-click pages to select them, and then click Select.

3 In the text box, enter the number of objects to place on each page (Canvas divides the number of objects evenly if you select pages; remaining objects go on the last selected page). Click OK to disperse the selected objects.

Using guide and grid layers

In addition to general purpose layers, you can use special layers designated to contain drawing aids called guides and grids.

Like other layers, guide layers and grid layers appear in the Document Layout palette. You can arrange these layers by dragging them in the list to place them in front of or behind other layers.

Guide layers

When the command Layout > Snap To > Guides is selected, objects that you draw and move will snap to guides on the guide layer.

Guides that you drag from the rulers, and text sections you draw with the Section tool will appear on the current page's guide layer. You can also draw on a guide layer to create "magnetic" guide objects.

To add a guide layer

1 Select the page to which you want to add a guide layer.

2 Choose Add Guide Layer in the Document Layout palette's menu.

3 The New Guide Layer dialog box appears. Enter a name, and select the visible option to display the layer, and click OK.

By default, objects on guide layers are light blue. By changing the guide layer override color, you can make the objects any color. To change a guide layer's name, override color, or other properties, double-click the layer and use the Layer Options dialog box, or use another method for setting layer options as described in "Page and layer options," page 11.8.

To arrange guide layers

You can move a guide layer to another place within the present page or to another page altogether. Select the guide layer and then drag the guide layer to its new position.

To copy guide layers

You can copy a guide layer to another place within the present page or to another page altogether. Select the guide layer and then Ctrl-drag the guide layer to its new position.

To delete guide layers

Select the guide layer and then drag it to the trash can icon in the Document Layout palette. You can also select the guide layer and then choose Delete from the palette menu.

Grid layers

Grid layers display gray grids that can help you position objects precisely. When the command Layout > Snap To > Grid is selected, the bounding boxes of objects will snap to the grid.

When you create a grid it appears on a grid layer. Grid layers are locked by default. You can configure the current page's grid using the Layout > Grids command.

To add a grid layer

1 Select the page to which you want to add a grid layer.

2 Choose Add Grid Layer in the palette menu. The New Grid Layer dialog box appears. Configure the options as desired, and then click OK. Canvas adds a new grid layer.

By default, grid layers are gray. To change a grid layer's name and other properties, double-click the grid layer and use the Layer Options dialog box, or use another method for setting layer options as described in "Page and layer options," page 11.8.

To arrange grid layers

You can move a grid layer to another place within the present page or to another page altogether. Select the grid layer and then drag the grid layer to its new position.

To copy grid layers

You can copy a grid layer to another place within the present page or to another page altogether. Select the grid layer and then Ctrl-drag the grid layer to its new position.

To delete grid layers

Select the grid layer and then drag it to the trash can icon in the Document Layout palette. You can also select the grid layer and then choose Delete from the palette menu.

CHAPTER 12

CONFIGURATION & CUSTOMIZATION

You can customize your Canvas work environment to best suit the needs of a specific project and maximize your productivity. This chapter describes how to set preferences, customize keyboard shortcuts and the Toolbar, save document templates, and create custom sets of Canvas tools.

Setting preferences

The Configuration Center contains the settings options and their related managers.

- **To open the Configuration Center:** Choose File > Configuration Center.

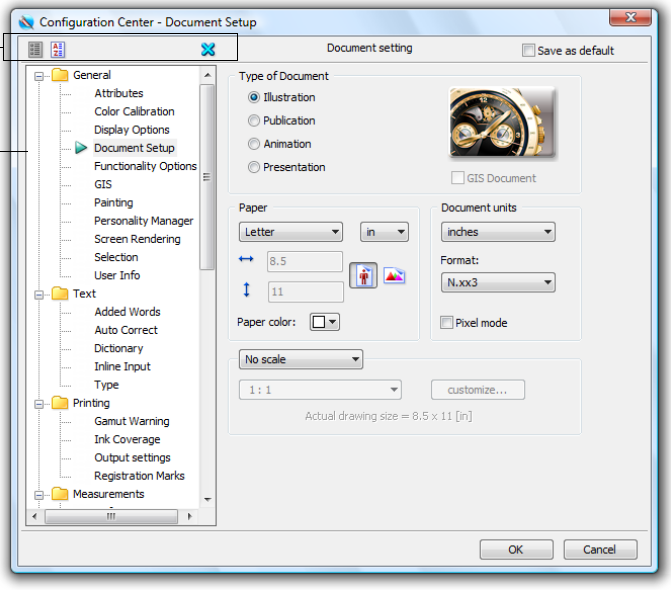
Configuration Center

The various application and document settings are categorized in the left pane of the dialog box.

View controls: Functionality Alphabetical Condensed

Click on an option in the list and the related manager appears to the right.

Select the Save as default checkbox in the upper right corner if you want to keep the chosen settings.



View controls

When the Configuration Center is open, you can change the display by using the View controls located in the upper left corner:

Functionality The settings managers are grouped according to use. Five major groups appear in the list; i.e., General, Text, Printing, etc. Open a group to see its settings options.

Alphabetical All the settings options are listed in alphabetical order in the left pane. Click on an option to see its related manager.

Condensed The left pane collapses so only the right pane is visible. You can only see the selected settings managers. Click on the Condensed view icon to see the entire dialog box.

To change a preference

When turning on an option, you may also have to enter a value or choose a menu option. Remember that an option is on when its checkbox is selected. An option is off when its checkbox is deselected.

1 Open the Configuration Center.

2 Open a category in the left pane and then click on a settings option, like Display Options. The related settings manager appears in the right pane.

3 Make any adjustments in the settings manager.

4 To implement the current settings, click OK.

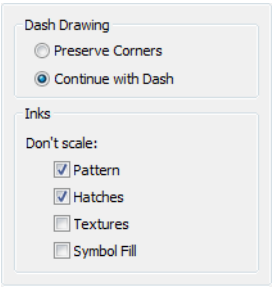
- **To save the settings as default:** Select the Save as default checkbox.

General settings

The following settings options are listed within the General category.

Attributes

The Attributes manager contains options for both dashes and inks.

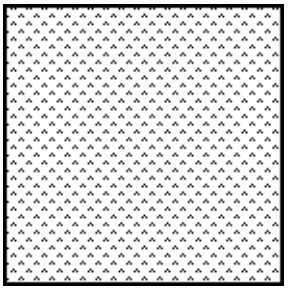


Dash If you are applying dashed pen stroke to objects, you can define how dashes are handled if an object has corners.

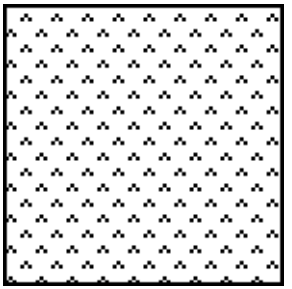
- **Preserve Corners:** Select this option to keep the corners intact; i.e., dashes will not be applied to the corners of objects.
- **Continue with Dash:** Select this option to apply dashes to the corners of objects.

Inks When working with objects that contain Hatch, Texture, Symbol, or Pattern inks, it is now possible to magnify these objects without magnifying the ink as well. In the Configuration Center, open the General category and click Attributes.

In the Inks section of the Attributes manager, you can select inks that you do not want to scale if you use the Zoom controls or Magnifying Glass tool.



Object at 200% magnification (fill ink does not scale)



Object at 200% magnification (fill ink scales)

Personality Manager

Use the Personality Manager to select your use of Canvas and color output needs. The Toolbox and related tool palettes will be rearranged to suit your needs.

At any time, you can make modifications to the Personality Manager if your needs change.

- **To access the Personality Manager:** Choose File > Configuration Center or Canvas > Configuration Center and click the Personality Manager option in the General settings. Make your changes and restart the program.

Note: Changes in the Personality Manager affect the Canvas settings file.

Color Calibration

Use these options to change color settings within Canvas (see "Color management," page 12.20).

Display Options

In the Display Options manager, you can configure most of the options for screen display. Change display options and set the default display options for new documents.

✓ **Tip**
The items in the Show, Alert, and Preview groups can be individually toggled on and off by choosing Layout > Display. When a special display option is active, a checkmark appears next to the option in the menu.

- **To open the Display Options manager:** Choose Layout > Display Options.
- **To make the current setup the default for new documents:** Select "Make default for new documents."

Alert and preview options The normal Canvas display shows all objects with their inks, strokes, and other attributes as they are in the document.

- **Gamut Warning:** This mode highlights colors that are outside the CMYK color gamut. It replaces out-of-gamut colors with a special indicator color. Bright greeen is the default indicator color.
- **To change the Gamut Warning color:** Choose Edit > Calibration > Gamut Warning. Select a color from the pop-up menu.
- **Ink Coverage:** This mode shows all areas of the image that exceed a specified ink coverage. Bright greeen is the default indicator color.
- **To change the ink coverage color or value:** Choose Edit > Calibration > Ink Coverage. Select a color from the menu. Enter an amount percentage value in the Amount box.
- **Wireframe:** Wireframe mode shows vector objects without their assigned ink or stroke attributes. When Wireframe is selected, vector objects are hollow and have 1-point black pen strokes. Text characters appear solid black. Paint objects are hollow and only their bounding box appears. With this mode, the screen display tends to speed up.
- **Pixel Mode:** The Pixel Mode setting allows users to view graphics at 72 ppi before they are rendered.

When creating Web graphics, the standard resolution is 72 ppi. At the same time, all of your images will remain fully editable. Pixel Mode also prevents pixel shifting, which sometimes occurs when

objects are exported to the Web (see "Designing for the Web," page 35.1).

Cache options Caching in Canvas is a technique that can dramatically increase display speed. When an object is cached, Canvas creates a low-resolution version of the object to display on screen. This can make it much easier to work in documents that contain complex vector objects or high-resolution images, which can significantly slow down zooming and scrolling.

When you are not editing cached objects, it usually won't matter that they are displayed at lower resolution. You'll enjoy significantly faster display without losing any capabilities. When you want to edit a cached object, Canvas loads the original; you do not need to take any special action or uncache the object.

- **Draw with Cache:** Select this option to display low-resolution versions of cached objects for faster display. Cached objects are objects that have been cached with either the Cache Object command or the Auto Cache Images option (see "Auto Cache Images," page 12.5).

When Draw with Cache is not selected, Canvas retains any low-resolution previews that it has created in memory, but displays the full paths of vector objects and displays paint objects at normal resolution.

✓ Tip
If Auto Cache Images is selected, but Draw with Cache is not selected, Canvas will cache paint objects (if their resolution is above the set threshold), but will not display the low-resolution versions.

- **Auto Cache Images:** Select Auto Cache Images to automatically cache paint objects whose resolution is above a threshold that you specify.

To set the resolution threshold, enter a value from 72-2540 ppi in the first text box. When the resolution of a paint object is equal to or greater than the specified resolution, Canvas caches the paint object.

Cached paint objects are displayed at low resolution for faster display. Enter the desired display resolution in the second text box.

- **To uncache all paint objects:** Deselect Auto Cache Images. A message appears. Click Yes to uncache all paint objects. This is equivalent to using the Uncache Object command on each paint object individually.

Note: If you want to uncache paint objects and Auto Cache Images is already cleared, use the Uncache Object command instead (see "To uncache an object," page 12.6).

Caching objects

This command can be used to speed up the display of complex objects, which is useful when a document contains complex objects that you do not need to edit often. When you cache an object, Canvas stores a low-resolution preview in memory. The preview can be displayed quickly when you move the object or change views. You can cache any type of object for faster display.

To cache an object

1 Select the object to cache.

2 Choose Object > Options > Cache Object. A dialog box appears.

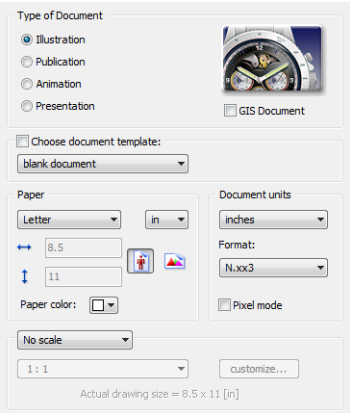
3 Enter a preview resolution value, from 2 to 300 pixels per inch, in the text box. Lower resolutions produce rougher previews.

4 Click OK. Canvas displays a preview of the cached object at the cached resolution.

To uncache an object

1 Select a cached object.

2 Choose Object > Options > Uncache Object. Canvas returns the object to its normal resolution.



Document Setup

In the Document Setup manager, you can switch the current document type, modify document size and orientation, as well as change document units and scale.

Note: Although you can switch to another document type in midstream, you should save the current document in its entirety and then change the document type.

Functionality Options

Maximize on Opening Opens documents at full screen size. Otherwise, documents open at a standard size that fits any monitor, but might not fill the screen completely.

Fit to Window Opens documents so the full layout area can be seen in the center of the window. When this option is off, documents open in Home View (100% magnification with the upper-left corner of the page in the upper-left corner of the window).

Paste as MetaObject When copying from other applications, select this option to paste as a metaobject (see "Inserting objects into Canvas documents" on page 13.27). Text, however, is pasted as OLE if this option is enabled. If you copy both an object and text, they will paste as OLE.

Create backup when saving Saves a copy of the current document each time you save changes to the document. The backup copy has the extension ".bak," and Canvas saves to this same file each time.

Canvas 6-style object locking When you lock an object or group of objects, you can select and copy locked object(s) by clicking on the object or group of objects. Copied objects will not be locked.

No Background Updates Prevents Canvas from redrawing open Canvas documents when you are working in another application. This option lets other applications run faster when Canvas is in the background.

Show information tooltips Displays information, tips and shortcuts in small boxes that appear when you point at an item, such as a tool, button, or object. For example, if you move the pointer over the Copy button in the Tool Bar, Canvas displays the command name and shortcut. Canvas also displays user comments when you point to an object that has comments, and displays information when you point to an ink in the Inks palette. For color inks, Canvas displays color system information. For example, if you point to a CMYK ink, the color values such as "5c 2m 92y 0k" appear in a pop-up box. For other inks, Canvas displays the ink name.

Select Across Visible Layers Lets you select objects on all visible layers in a document, rather than just the active layer.

Note: If this option is off, you can still select objects on other visible layers by pressing Tab and clicking the objects.

Search selection on clicks When this option is on, you can drag a selected object from behind another object. If this option is off, you can drag only the front object, because dragging deselects a back object.

Scale Stroke Weight When you scale an object by dragging its selection handles, if the object has a solid pen stroke, Canvas will scale the pen weight proportionately with the object.

AutoSave select this checkbox if you want Canvas to automatically save a document after a certain period of time. The time periods are designated in minutes.

Freeform Selection Lets you place objects in freeform mode by clicking already-selected objects. Otherwise, you must use the Effects > Freeform command to put an object in freeform mode.

Number of Undo Levels Enter a number in the Min box to set the minimum number of actions that Canvas can reverse. The default is three. Enter a number in the Max box to specify the maximum number of actions that Canvas reverse. The default is 10.

- **To undo an action in Canvas:** Choose Edit > Undo or open the Undos palette by choosing Window > Palettes > Undos (see "Undoing, redoing, and repeating actions," page 8.6).

GIS

Use the settings in the GIS manager when you need to open Shapefiles or configure the drawing area (see "GIS+," page 39.1).

Painting

The Painting manager lets you set preferences for displaying and editing paint objects and images.

Brush pointers These options let you change the pointer displayed for painting tools. The default pointer is a symbol of the current painting tool.

- **Standard Pointer:** displays the icon for the current painting tool.
- **Precise Pointer :** displays a crosshair pointer. The intersection of the crosshair is the center of the current brush.
- **Brush Size Pointer :** displays an outline of the current brush as the pointer.

Note: Open the context menu to change the pointer while you edit a paint object.

Plug-ins Click the button to set the location of Photoshop-compatible plug-ins for use in Canvas. In the directory dialog box that appears, select the folder containing the plug-ins. The path name of the folder appears below the Plug-ins button on the Painting tab. Installed plug-in filters appear in the Image > Filters submenu.

Don't Show Plug-in Host Warning Suppresses the message that Canvas displays if it tries to load a software plug-in that requires a specific host program. Deselect this option if you want Canvas to display the message so you can choose whether to load the plug-in.

Separate Grayscales as Black Select to separate grayscale paint objects on the black plate only. Deselect this option for Canvas to treat gray color values as RGB colors that will be separated as CMYK grays.

Color Channels Makes channel previews in the Image Channels palette appear in color rather than shades of gray.

Anti-aliased Clipboard Anti-aliases vector and text objects pasted from the Clipboard into a paint object.

Anti-aliased Canvas Objects Anti-aliases Canvas vector and text objects drawn in a paint object. For example, if you add text to a

paint object in edit mode, Canvas rasterizes and anti-aliases the text.

Screen Rendering

Vector Quality The options in this menu affect the entire screen display in Canvas.

- **Draft :** provides the fastest screen display by drawing vector objects less smoothly. Choosing this option can increase display speed by 300%.
- **Normal :** provides fast screen display and draws smooth vector objects. This is the recommended setting and is selected by default.
- **Anti-aliased :** significantly smooths all objects on screen, including text and vector objects by anti-aliasing their edges. However, this anti-aliasing slows the display compared to Draft or Normal settings. The effect of the anti-aliased option is independent of the anti-aliased option on the Display tab. If either option is selected, text is anti-aliased and vice-versa.

✓ **Tip**
Anti-aliased is especially useful when you create screen shots or display slide shows on screen.

Interpolation When activated, this feature will significantly enhance the visual quality of scaled images. Interpolation takes place whenever an image needs to be reduced or *downsampled*. In other words, whenever the number of pixels being displayed is less than the available number of pixels at the destination. An example of downsampling would be when a 300 ppi image is set to be displayed at 100%.

Interpolation is a mathematical procedure which estimates values of a function at positions between listed or given values.

- **Nearest Neighbor :** will remove some pixel information from your image; however, if used, this setting will be the fastest.
- **Bilinear :** will use a bilinear interpolation algorithm during downsampling. This setting can be used if you work with line art and may be applied to some photographic images.
- **Bicubic :** is an appropriate setting if you work primarily with photographs.
Note: Due to a blurring effect, we do not recommend the Bicubic setting if you work with line art.
- **Auto :** is the optimal setting for interpolation of a photographic image. The Auto setting automatically chooses the best Interpolation option based on the image, its resolution, and current magnification.

✓ **Tip**
Nearest Neighbor setting merely gathers pixel data from the "Nearest Neighbor" of each pixel, therefore Interpolation does not actually occur.

Pasteboard Color Use the color palette to select a color for the pasteboard area.

Object Caching Keeps screen images in memory so the display refreshes significantly faster when you move or edit objects. This is the recommended option. If you deselect this option, less memory (up to 4 MB) is used for screen display, but displaying complex images might be very slow.

Transparency lets you control how transparency appears when a paint object is in edit mode.

- **No Preview :** displays a checkerboard pattern to represent transparency in an image. This isolates an image from background objects, which can be helpful for editing complex compositions.
- **Background Preview :** displays transparency in an image during editing. Objects behind the image are rendered realistically while you edit. (If no objects are behind the paint object, the document's white layout area shows through transparent areas.) Objects in front of a paint object are hidden during image editing.
- **Total Preview :** displays both background and foreground transparency during image editing. This is the most accurate preview.

Selection

Show originals when dragging and resizing When you drag or resize an object, it will follow the pointer and also appear in its original position until you release the mouse button.

Selecting this option means that when you drag an object, an outline of the object (without pen ink, fill ink, or stroke) will follow the pointer.

Offset for duplicating objects Tells Canvas how far (in pixels) from the original to put object copies when you choose Edit > Duplicate or Edit > Paste.

Offset for moving objects You can specify the number of pixels that objects move when you use a combination of modifier and arrow keys. For example, with the settings shown here, Ctrl+Right Arrow moves a selected object 50 pixels to the right, and Alt+Right Arrow moves it 10 pixels to the right.

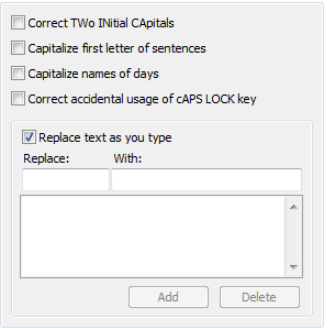
Auto-scroll to selection keeps objects that you move using the arrow keys in view by scrolling the document window.

User Info

Specify a name and initials for object comments, which you can insert using the Comments command (see "Attaching comments to objects and using Markup tools," page 16.41). You can also establish the default directory for downloading clipart with the Symbol Library palette.

- **Name:** Type a name in the text box. When you attach a comment to an object, Canvas associates the name you enter with the comment. By default, Canvas uses the name entered when Canvas was installed.
- **Initials:** Type initials in the text box. When you attach comments to an object, Canvas associates these initials with the comment.

Text settings



Auto Correct

Use these options to specify corrections you want Canvas to make as you type.

Two Initial Capitals Corrects a word that you type beginning with two capitalized letters.

Capitalize the First Letter of Sentences Capitalizes the first letter you type following typical sentence-ending punctuation, such as periods, question marks, or exclamation points, even if these marks are followed by a quotation mark or parenthesis. Canvas may or may not capitalize the first letter following unusual punctuation, such as Web site addresses or abbreviations in the middle of sentences, so sentences containing unusual punctuation should be checked.

Note: Auto Correct does not capitalize the next word if you insert sentence-ending punctuation in existing text.

Capitalize the Names of Days Capitalizes the full name of weekdays; e.g., this option replaces "saturday" with "Saturday." It does not expand abbreviations for day names, such as "wed." or "Thurs.," unless you add these abbreviations to the replacement list.

Correct Accidental Usage of the Caps Lock Key (Windows only) Corrects non-standard word capitalization. If the first letter of a word is lowercase and the other letters are uppercase, this changes the first letter to uppercase and the rest of the letters to lowercase; e.g., this

option replaces “rEPEL” with “Repel.” If the first two letters of a word are uppercase and the rest are lowercase, this changes the first letter to uppercase and the rest of the letters to lowercase; e.g., replacing “REpel” with “Repel”.

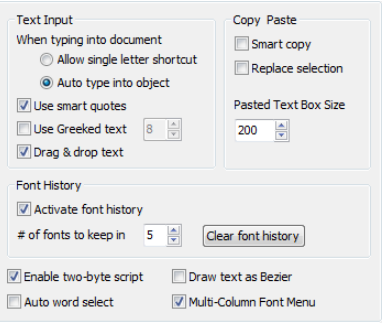
Replace Text as You Type Replaces text that you type with any specified replacement text. Each set of typed text and replacement text appears in the scrolling list in the Auto Correct dialog box (see “Setting up text replacement,” page 31.8).

Spell Check Dictionary

Use this option to add an unlimited number of words to the personal dictionary. You can also delete words. By adding words to the User Dictionary, you can “teach” Canvas new words and special terms, and prevent Canvas from stopping unnecessarily while checking spelling (see “Modifying the User Dictionary,” page 31.15).

Type settings

The Type settings in the Configuration Center let you customize options for text and typography.



Text Input

When Typing Into Document Select either Auto type into object or Allow single letter shortcut.

- **Auto type into object:** This option allows you to automatically begin typing text characters into a selected object.

✓ **Tip**
Remember that you must be in vector edit mode to use the hot-keys.

- **Allow single letter shortcut:** If activated, you will be allowed to access the vector and image editing tools using simple single-letter shortcuts. The list below details the various hotkey commands and how they may be applied.

Use these single-letter hotkeys when editing a vector object:

Action	Hotkey
Selection Arrow	V
Direct Edit Selection Arrow	A
Lasso Selection	Y
Direct Edit Lasso Selection	W
Bézier Tool	B
Text Tool	T
Oval Tool	O
Polygon Tool	P
Smooth Polygoon Tool	M
Rectangle Tool	R
Freehand Tool	F
Reshape Tool	E
Line Tool	L
Push Tool	S
Dropper Tool	I
Scissor Tool	C
Knife Tool	K
Set Default Stroke (or) Fill	‘ (accent grave)
Assign Default Stroke (or) Fill	D
Swap Fill / Stroke	X

✓ **Tip**
Remember that you must be in image edit mode to use the hotkeys.

Use the following single-letter hotkeys when editing images:

Tool/Action	Hotkey
Wand Tool	W
Marque Tool	M
Image Lasso Tool	L
Remote Move Tool	V
Pencil Tool	P
Eraser Tool	E
Marker Tool	H
Paintbrush Tool	B
Airbrush Tool	A
Bucket Tool	K
Blend Tool	G
Blur Tool	F
Sharpen Tool	Q
Rubber Stamp Tool	S
Smudge Tool	N
Dodge Tool	O
Burn Tool	B
Sponge Tool	D
Red Eye Reduction Tool	R
Swap Fill / Stroke	X
Set Default Stroke / Fill	‘ (accent grave) or C
Switch Channels	Ctrl 0 - 9

Use Smart Quotes Select this option if you want Canvas to insert true typographical apostrophes (’), single quotation marks (‘), and double quotation marks (“”) when you type these characters with the Text tool. Otherwise, these characters appear as straight tick

marks, or foot (') and inch (") marks. Of course, the actual appearance of the characters depends on the design of the typeface in use.

The character that Canvas inserts when you type a quotation mark depends on the position of the insertion point in the text, and its position relative to other quotation marks; e.g., Canvas always inserts an open quotation mark (“) when you type a quotation mark immediately following a space.

Note: Use Smart Quotes has no effect on text that you type with the Path Text tool.

Use Greeked text Select this option if you want Canvas to replace lines of text characters with gray bars, which speeds up screen redraw.

Enter a size in points in the adjacent text box. When this setting is selected, Canvas replaces text at the specified size and smaller when the display magnification is 100% or less; e.g., if you specify 12 points, and zoom to 200%, Canvas replaces any text that is 6 points or smaller. If you zoom to 50%, Canvas replaces text that is 24 points or smaller.

Drag & Drop Text Enable this option so you can highlight text and drag that text to a new location within the same text object.

✓ **Tip**
The Greeked text setting does not affect printing. You should set the size the same as most body text in your documents. This lets you view headlines and display type normally, while Canvas replaces the body text at 100% magnification. Then, when you zoom in to edit the body text, it will appear normally at the higher magnification.

Copy & Paste

Smart Copy With this option on, if you copy and paste text that begins a paragraph, Canvas pastes the text as a new paragraph using the original paragraph settings. With this option off, Canvas pastes text into the current paragraph using the existing paragraph settings.

Replace Selection Activating this function allows you to automatically replace selected text when you paste into a Canvas document. If this option is not activated, text will be pasted into the center of your document.

Pasted Text Box Size Enter the point size that you would like your text box to be when you paste text into your document. The setting that you choose will become the default size for all text boxes that will be created when you paste text into your document.

Font History

- **Activate font history:** Select this option to list the most recently used fonts at the top of your Fonts menu.

- **# of fonts to keep in history:** Select the number of fonts that are to be stored in the history.

- **Clear font history:** Click this button to empty the recent font history.

Miscellaneous

Enable two-byte script This option tells Canvas to accommodate text characters that require twice as much data (two bytes) as text characters in most Western languages. This makes it possible to create documents using specialized two-byte fonts, including Chinese, Korean, and Japanese (see "Tools and options for two-byte and vertical text," page 28.5).

Auto Word Select When you use the I-beam pointer to highlight specific text, this option ensures that you select only whole words (all characters between blank spaces). As you drag to highlight text, Canvas detects when you drag over a space. As you continue to drag, Canvas locates the next space and selects the characters in between.

Windows-only type preferences

Draw Text as Béziers When using a 256-color display, Windows cannot dither colors in text to approximate a non-system color; instead, Windows uses the closest solid colors. Turning this option on tells Canvas to redraw text as objects, which lets Windows dither colors when necessary. This method is resource-intensive and can be slow; turn this option on only if you need to see dithered color in text on a system with a 256-color display.

Multi-Column Font Menu When activated, you will view all of the fonts in your system in a multi-column format. If this feature is not activated, then you will view your fonts in a single-column format.

Note: If you elect to use the single-column format, use the navigation arrows located at the top and bottom of the list to scroll through the fonts list. To see the list of available fonts, choose Text > Font.

Printing settings

The Printing settings let you control the appearance of printed output. These settings affect printed output when you use the Print as: Composite setting in the Print dialog box, and do not affect printing when you use the Print as: Separations setting.

Gamut Warning

This mode highlights colors that are outside the CMYK color gamut. It replaces out-of-gamut colors with a special indicator color. By default, the indicator color is bright green (see "Alert and preview options" on page 12.4).

Ink Coverage

This mode shows all areas of the image that exceed a specified ink coverage. By default, the indicator color is bright green (see "Alert and preview options" on page 12.4).

Output Settings

Resolution Use these settings to control the appearance of printed documents.

- **Output to maximum resolution :** Select this checkbox to print documents at the printer's highest resolution. This setting disables image-reduction options and fast-printing features of QuickDraw® printers, which require a setting of 72 dpi (see "Output resolution of transparency effects," page 34.21).

If you print documents to a PostScript printer, it's a good idea to select this option; however, if you are using Japanese fonts (two-byte), you can deselect the Output to maximum resolution checkbox, and then use the menu to select 300 dpi to speed up printing.

When Output to maximum resolution is not selected, you can choose the resolution (from 72 to 2,540 dpi) to use in the Resolution menu.

Halftone Set the halftone screen frequency and the halftone screen angle for composite printing. You can also use the printer's default halftone settings.

For most desktop publishing purposes, the printer's default settings are probably the best to use. For commercial printing, you might need to specify a particular frequency and angle for the best output. If you are sending documents to a commercial printer, ask about the appropriate halftone screen settings.

- **Use printer's default:** Select this option when you often print to desktop devices such as laser printers, and the default halftone screen frequency and angle are appropriate for your documents.

- **Frequency:** To specify a halftone screen frequency, deselect the Use printer default checkbox, and enter the frequency in lines per

inch in the text box. A higher frequency requires a higher printer resolution to produce the same number of grayscale levels in printed halftones.

- **Angle:** If you want to specify the angle of the screens used for halftoning, rather than use the printer's default setting, deselect the Use printer default checkbox, and enter the angle in the Angle checkbox.

Printer Options

- **PS L2 (Faster printing of text):** Allows you to send a block of text to the printer for faster printing of text. If disabled, text is sent character by character.

- **Screen enhancement feature for true halftones:** This option, when enabled, always prints halftones at the highest possible LPI. If disabled, a halftone is printed at the printer's resolution.

Document bleed size By default, the bleed size is set to 9 pt (1/8 in). Enter a new value in the text field.

Registration Marks

Define the appearance of the registration marks. By default, the fill is white and the size is 72 pts (see "Making manual registration marks," page 17.16).

Measurements

The Measurements settings let you control as well as define the unit of measure that is used in the rulers and drawing scale. The Grid manager is also located in the Measurements settings section.

Define Units

You can further customize the rulers by adding units of measurements, modifying the definitions of existing ones, or deleting them (see "Setting up rulers," page 10.7).

- **To add units:** Click the Add button and the Add Unit dialog box opens.

Enter a Unit name, Plural name, and Abbreviation. Select a Length and unit of measurement on which to base the new unit. Select the Minor divisions for the unit; e.g., if you wanted to have a unit that was based on 1 inch, enter 1 for Length and select inches from the menu. Then, select the Minor divisions that you want to use.

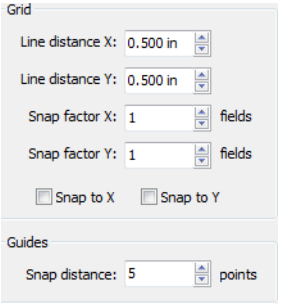
Note: You can add this unit to any future documents by selecting the Add to all new documents checkbox in the Add Unit dialog box.

- **To modify units:** Select an existing unit and then click the Modify button. The Modify Unit dialog box opens. You can change the Abbreviation and Minor divisions.

- **To delete units:** Select a user-defined unit and click the Remove button.

Note: You cannot delete default units; i.e., inches, centimeters, etc. You also cannot delete units that are currently being used as the document unit. Change the document unit first.

Grids and guides



You can use grids and guides to aid in positioning objects in a document. You can also turn on the snap-to-grid and snap-to-guide features to make Canvas snap objects into alignment with the nearest grid or guide.

- **To open the Grids and Guides manager:** Choose Layout > Grids and Guides. The Grids and Guides manager appears.

- **To show or hide grids:** Toggle the Grids checkbox in the Properties bar. You can also choose Layout > Display > Show Grids/Hide Grids.

- **To show or hide guides:** Toggle the Guides checkbox in the Properties bar. You can also choose Layout > Display > Show Guides/Hide Guides.

- **To turn on snap-to-grid:** Choose Layout > Snap To > Grid. Choose the command again to turn off snap-to-grid.

- **To turn on snap-to-guide:** Choose Layout > Snap To > Guide. Choose the command again to turn off snap-to-guide.

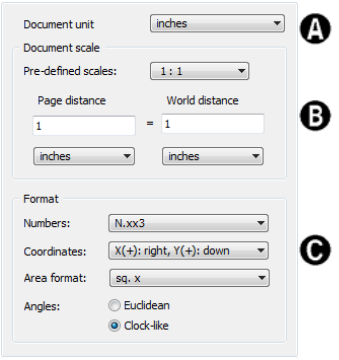
Use these settings to create an alignment grid (see "Using the alignment grid," page 10.13).

- **Line distance X:** This is the distance from one vertical grid line to another.

- **Line distance Y:** This is the distance from one horizontal grid line to another.

- **Snap Factor X:** This value sets the snap points along the horizontal lines of the grid and guide.

- **Snap Factor Y:** This value sets the snap points along the vertical lines of the grid and guide.
- **Snap to X/Snap to Y:** Select one or both options to make objects snap to the snap points on both sets of grid and guide lines.



Ruler

The Ruler manager lets you choose measurement settings, such as document units, document scale, numerical format. If you're accustomed to creating large illustrations, such as billboards or 2-D architectural drawings, Canvas gives you the freedom to create a document in its actual size and draw in real-world units. You no longer have to create an illustration in terms of "page distance" (see "Defining a drawing scale," page 12.20).

Select a unit of measurement from the menu (A). This unit is displayed in the rulers, Object Specs palette, as well as Properties bar.

Define the drawing scale in the Document scale section (B), if necessary. You can use the Pre-defined scales or establish a custom scale.

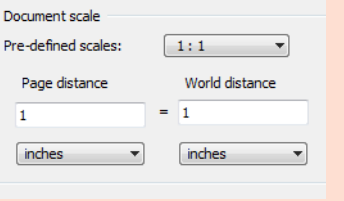
Choose the formats (C) for the numbers, angles, and coordinates. For the number format, you can choose from no decimals to six decimals, or even use fractions (see "Floating point technology," page 19.2).

Defining a drawing scale

The Document scale section has several options in the Pre-defined scales menu. You can also select Custom from the menu and then define your scale with the "Page distance = world distance" controls.

If you select "1:1" as the scale, you are actually drawing in real-world units; i.e., you aren't drawing "to scale".

You can also establish a drawing scale by using the Set Document Scale command (see "Set Document Scale," page 10.12).



Color management

Canvas uses the Kodak Digital Science Color Management System or its own internal color management system to achieve accurate color reproduction in printing and display. The active color management system handles conversions from one color mode to another.

The Kodak Color Management System supports ICC (International Color Consortium) profiles. Use ICC profiles to calibrate monitors and output devices.

File installation and placement

During installation, several files that are required to use the Kodak Color Management System are copied to the system. After installation, do not move, rename, or delete these files; otherwise, the Kodak external tool won't load.

Installation places various.DLL files throughout the system. It also creates a KPCMS folder at the root level of the hard disk if one doesn't exist already.

On Windows 2000, XP, and Vista, Kodak ICC profiles are stored in the Color Profiles folder in the Canvas folder. By default, Canvas installs Kodak's generic ICC profiles only.

✓ Tip
To install additional ICC profiles, refer to your system documentation.

Kodak ICC profiles

ICC profiles are used for color management by Canvas and other programs. Canvas installs Kodak ICC profiles that are appropriate for most monitors and color printers.

✓ Tip
You can obtain additional ICC profiles for specialized devices, such as film writers, graphics arts monitors, and prepress proofing devices from the device's manufacturer.

To download ICC profiles from ACD Systems of America

1 Go to www.acdamerica.com.

2 Click the Downloads link on the navigation bar.

3 On the Downloads page, click the ICC Profiles in the Canvas Add-on Files section.

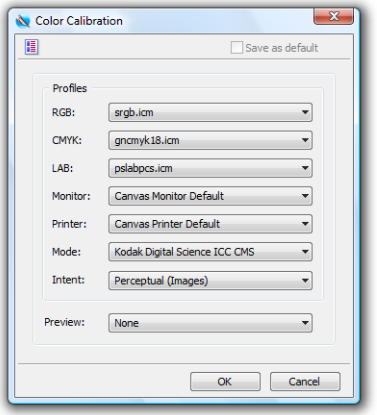
4 Select the folder, then click profile_index. This displays a list of all available ICC profiles.

5 Scroll through the list to find your device name. The profile file name appears first on the line for each device.

6 To download the file, click Back in your browser. Open the appropriate device folder and click a file name to download the ICC profile file.

To change color settings within Canvas

1 To change the color management settings, choose Edit > Calibration > Color Settings. The Configuration Center opens with the Color Calibration manager selected.



Color Settings

2 In the Color Calibration manager, select profiles and other options (see "Color Settings options" on page 12.22)

3 Click OK to implement the settings.

Color Settings options	Use
RGB	Selects the ICC profile for conversion to and from RGB color space.
CMYK	Selects the ICC profile for conversion to and from CMKY color space.
Lab	Selects the ICC profile for conversion to and from LAB color space.
Monitor	Select a monitor ICC profile that matches your monitor, or use the default profile. To change the profile, choose Other. A directory dialog box with two panes appears. In the upper pane, available ICC profiles appear. Select a profile; click Open.
Printer	Select an ICC profile for your printer or use the default profile. To change the profile, choose Other. A directory dialog box with two panes appears. In the upper pane, available ICC profiles appear. Select a profile; click Open.
Engine	Choose the Kodak Digital Science CMS or the internal Canvas color management system.

Color Settings options	Use
Intent	Choose a rendering intent: • Perceptual (Images) maintains relative color values as the values are mapped to the printer gamut. This method preserves the relationship among colors, though color values can change. • Saturation (Graphics) maintains relative saturation values of colors. Colors that are outside the printer gamut are converted to the closest colors with the same saturation that are inside the printer gamut. • Relative Colorimetric leaves colors that fall inside the gamut unchanged. This method usually converts out-of-gamut colors to colors that have the same lightness but fall just inside the gamut. • Absolute Colorimetric disables white-point matching when converting colors. This option is not generally recommended.
Simulate print colors on display	Select to simulate on the monitor the appearance of the CMYK colors that will be printed.

Color management tips

If you require the highest quality color matching and output, becoming familiar with the factors that can cause problematic color shifts can help you to avoid unexpected results.

In general, the Kodak color management system handles conversion between color systems, such as RGB and CMYK. The system makes the conversion as accurate as possible, taking into account the characteristics of the color display and color printing devices.

If you want to prevent even slight changes in color values, avoid conversion from one color system to another. When you paint in an image, use the color system that matches the image mode; e.g., use RGB colors for RGB Color mode, and CMYK colors for CMYK Color mode.

If you paint a CMYK color into an RGB Color mode image, Canvas converts the CMYK color values to RGB values. When color calibration is active, the color management system uses the specifications of the selected ICC profiles in the conversion process.

Avoid using RGB color in a document that will be printed commercially using process (CMYK) colors. When you specify process colors, it's best to use a matching system ("Color systems" on page 14.7).

✓ Tip
You must use a printed swatchbook to view the printed appearance of a color. You should never rely entirely on the appearance of a color on screen.

Preferences for two-byte text entry

The options for the Inline preferences let you specify whether you want to always enter two-byte text directly into a document, or use a

text-entry window when the apparent type size is outside a range that you have set. This feature is available only when you are running system software that supports two-byte fonts, and are using two-byte fonts to enter text into a document. This preference does not affect printing.

Using a low zoom level can make it difficult to see text as you type. By using the text-entry window, you can see and edit text in the window, regardless of the current view magnification level.

To set inline text-entry preferences

1 Choose File > Configuration Center. The Configuration Center appears.

2 Open the Inline manager within Text settings.

3 Specify the following options, and then click OK to implement the current settings:

- If you always want to use a text-entry window, regardless of the size of the type, select the Never option.
- If you want a text entry window to appear when you type text at some apparent type sizes, select the "For text from" option. Type a number from 6 and 255 in each text box. These numbers set the range in which the text-entry window does not appear and you type directly into a document.

A character's apparent size is the size at which it appears on screen, based on the current view magnification level; e.g., 12 point type appears to be 12 points at 100%; at 200%, it appears to be 24 points; at 50%, it appears to be the size of 6 point type.

✓ **Tip**
You must first enable two-byte script in the Type manager.

Using the text-entry window

If you choose the "For text from" option and type text in a document at an apparent point size that is outside the specified range, the text-entry window appears at the bottom of the screen. You can type and edit text directly in the window. To enter the text into the current document, press Enter.

If the apparent size of text changes because you change the view magnification, actual point sizes that are beyond the specified "For text from" range might not cause the text-entry window to open. In this case, you can type the text directly into the document.

Customizing the keyboard and Toolbar

Via the Customize dialog box, you can assign keyboard shortcuts to commands, tools, attributes, object styles, and font styles. You can also place buttons for these items on the Toolbar.

Customize dialog box

Choose File > Customize to open the Customize dialog box (see "Choosing a category to customize," page 12.26).

Customize dialog box

Use the options in the Customize dialog box to select items, and then create keyboard shortcuts and place buttons on the Toolbar.

Category. Choose the category of items to customize. The contents of the scrolling list change according to the selected category.

Sub-Category. Only active if Menus is selected in the Category menu. The commands in the selected menu appear in the scrolling list.

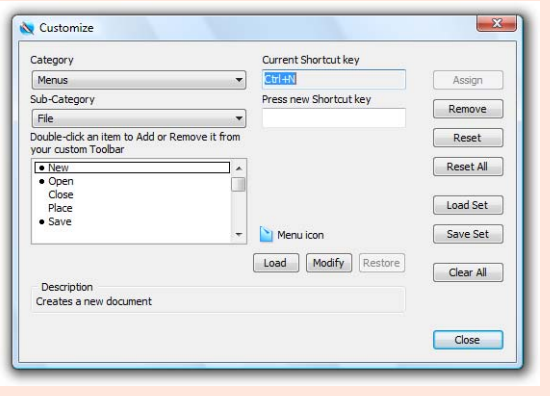
Scrolling list. Displays all tools or styles in the selected category or subcategory (for menus). For inks and strokes, the list contains the inks or strokes you select from the pop-up palettes. Select an item in the scrolling list to assign a shortcut to it or to place a button for it on the Toolbar. The selected item is highlighted.

Current Shortcut Key. Displays the current keyboard shortcut for the selected item, if a shortcut exists.

Press New Shortcut Key. With an item selected in the scrolling list, press the keyboard keys you want to assign to the item. To use a modifier key, press and hold Shift, Ctrl, or Alt. Press a letter, number, or function key. The new shortcut keys appear in the box.

Menu icon. Click Modify to open the Modify icon dialog box and customize the menu bar icons. Click Restore to return the icons to their default appearance.

Assign. Click to assign the keystrokes in the Press New Shortcut Key box to the selected item.



Remove. Click to remove the current shortcut keystrokes from the selected item.

Reset All. Click to restore the default shortcut keys to all items.

Reset. Click to restore the default shortcut keys to the item selected in the scrolling list.

Palettes. A pop-up palette appears when the Category selection is Inks; three palettes appear when the Category is Strokes. Select an ink or stroke from the palette. The selected item appears in the scrolling list and on the Toolbar.

Remove Selection. When the Category selection is Inks, Strokes, Object Styles, or Font Names and Sizes, click the Remove Selection button to remove a selected item from the scrolling list. This also removes a button for the item from the Toolbar.

Save Set. After you customize Canvas, you can save the current configuration in a file. You can create other custom configurations and save these in configuration files. A configuration file stores all the current keyboard shortcut assignments and the setup of buttons on the Toolbar.

Click Save Set to create a file of all current shortcut keys and Toolbar buttons. In the directory dialog box, type a name for the file and click Save.

Load Set. Click Load Set to import a file of shortcut keys and Toolbar buttons. In the directory dialog box, select the file to load and click OK. Canvas resets the shortcut keys and the Toolbar according to the configuration stored in the file.

Clear All. Click Clear All to clear all of the customized settings in the scrolling list and all buttons on the Toolbar.

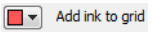
Close. Click to close the Customize dialog box. Inks or strokes added to the scrolling list remain in the list when you close the dialog box.

Choosing a category to customize

You can choose items to which you want to assign shortcuts or add to the Toolbar. The following items are available in the Category menu.

Menus If you select this item, you must choose one of the following menus from the Sub-Category menu: File, Edit, Text, Object, Layout, Effects, Image, and Window.

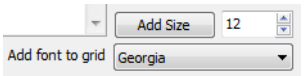
Tools The names of the tools and their icons appear in the scrolling list. Their respective keyboard shortcuts are also indicated in the Current Shortcut Key field.





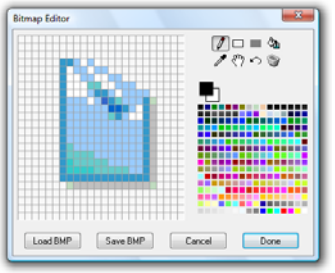
Inks / Strokes Next to the scrolling list, a pop-up palette displays preset inks, or three pop-up palettes display pen strokes, dashes, and arrows. Select an ink or stroke from a palette. The item you select appears in the scrolling list and as a button on the Toolbar.

- **To remove an ink or stroke from the scrolling list:** Select it and click Remove Selection; if the item is on the Toolbar, this removes it from the Toolbar also.



Font Names & Sizes A font size box appears. Select a size and then press the Add Size button. The font size appears in the main scrolling list, and a font size button appears on the Toolbar.

- **To choose a font:** Select a name from the menu. The font appears on the scrolling list, and a font button appears on the Toolbar.



Modify icon dialog box

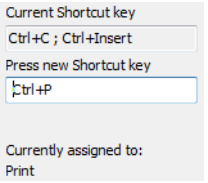
To customize keyboard shortcuts

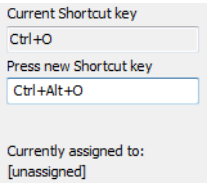
1 Select an item in the scrolling list in the Customize dialog box. If the item has a keyboard shortcut, the Current Shortcut Key box shows the shortcut keys.

2 To assign a keyboard shortcut, press the keyboard keys you want to use. The keys you type appear in the Press New Shortcut Key box. Click Assign to assign the new keys to the item.

If the keys you type are assigned to another shortcut, the message *Currently assigned to:* appears beneath the Press New Shortcut Key box.

Note: Certain keys are restricted, so pressing them will not display their values. Other shortcuts are reserved by Canvas, so they can be assigned, but not applied to some procedures; e.g., Ctrl+1, Ctrl+2, and Ctrl+3 cannot be used in painting.







Toolbar buttons

You can't assign single keys as shortcuts; e.g., you can't assign "H" or "F7" to an item.

- **To remove shortcut keys from the selected item:** Click Remove.
- **To restore the default shortcut keys to all commands:** Click Reset All.
- **To restore the default shortcut keys to one command:** Select the command in the scrolling list and click Reset.

To assign shortcuts to inks

Create shortcut keys for specific fill inks and pen inks.

- **To assign a shortcut key to a fill or pen ink:** Select the ink in the scrolling list in the Customize dialog box.

1 Type the keyboard keys you want to use. The keys you type appear in the Press New Shortcut Key box.

2 Under the box, select whether you want the ink to be a Fill or Pen ink.

3 Click Assign to assign the new keys to the ink.

To place buttons on the Toolbar

Select an item in the scrolling list. Inks, Strokes, Object Styles, and Fonts appear on the Toolbar automatically when you add them to the scrolling list. For Menus and Tools, double-click the item in the scrolling list to add it to the Toolbar. A button for the selected item appears on the Toolbar when it is displayed.

- **To remove an Ink, Stroke, Object Style, or Font button:** Click the Remove Selection button under the scrolling list, or double-click the item in the scrolling list.
- **To remove a Menu or Tools button:** Double-click the item in the scrolling list.

To arrange buttons on the Toolbar

After you place buttons on the Toolbar, you can change their position directly on the Toolbar.

- **To move a button:** Shift-drag the button to a new location.
- **To remove a button from the Toolbar:** Shift-drag the button away from the Toolbar.

- **To add a separator between Toolbar buttons:** Shift-drag the button on the right slightly to the right. A separator line appears between the button and the one to its left.

Using ink buttons

When you place buttons for inks on the Toolbar, use the buttons to apply fill and pen inks or foreground and background colors.

You can apply fill and pen inks to vector objects and text as well as select foreground and background colors for painting.

- **To apply a fill ink or select a background color for painting:** Click the ink button on the Toolbar. If no objects are selected, the ink becomes the current fill ink or background color.

- **To apply a pen ink or select a foreground color for painting:** Press Ctrl and click the ink button. If no objects are selected, the ink becomes the current pen ink or foreground color.

Saving document templates

You can use a special kind of Canvas document, called a template, as the basis for new documents. Canvas includes many ready-made templates, and you can create your own template documents. Then, when you use the New command, you can select a template — either one supplied with Canvas or one you have created — to create a new document based on the contents and configuration of the template.

A template document stores almost all preferences settings, as well as the settings you specify with the Document Setup command, and other document setup options, including the following:

- Document type
- Configuration of layers, slides, pages, sheets and frames
- Settings for rulers, grids, guides, and views
- Current inks and strokes settings
- Text styles and default text settings

✓ Tip
If you create a template with a small amount of type, such as for a letterhead, convert the type to paths so the template can be used without particular fonts being available.

Canvas stores some settings with the application and not in particular documents, so these settings are not included in a template document. The settings that aren't stored in a template include the position of palettes on the screen and the current set of external tools.

To save a template document

1 Choose File > New to create a new Illustration, Presentation, Animation, or Publication document.

2 Choose Layout > Document Setup to select measurement units, document size and orientation, and, for Publications, the margins and column layout.

3 Choose Canvas > Configuration Center to set up preferences for the document.

4 Create or import objects that you want to store in the template.

5 Choose File > Save As. In the Save as type menu, select Canvas Template and click Save.

For more information, see "Saving Canvas documents" on page 8.5.

CHAPTER 13

FILE & DATA EXCHANGE

Canvas supports many standard formats for exchanging files and data with other programs. This chapter explains how to use non-Canvas file formats, including Web image formats. It includes information on exchanging files on the Internet and Object Linking and Embedding.

Exchanging files

Canvas lets you work with many file formats. With a common file format, you can bring a file generated in another program into a Canvas document, or transfer a Canvas document into another program.

Since the native Canvas format (.CVX) saves all the objects, properties, and effects that your documents can contain, you should save all your documents in this format. Still, you might want to export a document in a different format, or import graphics into a Canvas document.

When you use a non-Canvas file, you can avoid problems such as lost information and printing errors if you know the capabilities and limitations of the file format; e.g., some formats support only one type of data (vector, raster, or text), while others support multiple types. Image formats support certain image modes.

Importing files

Use the Open and Place commands to import files. Choose the format you want to use in the format menus in the Open and Place dialog boxes. To import image files, you can also use the Image > Import command (see “Importing images” on page 13.6).

To open or place a file

1 Choose File > Open or File > Place.

- Open creates a new Canvas document containing the file you select.
- Place inserts the file in the current Canvas document. Place is available only if a Canvas document is open.

✓ **Tip**
The Open dialog box provides you with a bitmap preview when you select certain supported formats. When selecting any Canvas file, you'll see some file properties beneath the bitmap preview.

2 Choose a file type in the Files of Type menu. The file list shows files that match the selected format.

- Select All Files to show every file in the folder.

3 In the file list, select a file and click Open or Place. You can also double-click a file name. For some file formats, a dialog box presents options for opening files. Configure the options and click Open or Place.

- If you open the file, Canvas creates a new document.
- If you are placing the file, a Place pointer appears. Click where you want to place the top-left corner of the file.

Opening files with scripting utility

Canvas can use a script-based utility to open documents created in PowerPoint (2000, XP, 2003), Visio 2003, and CorelDraw (11, 12).

Note: When using this utility, both Canvas and the application in which the file was created must be installed. In addition, the Visual Studio .NET Framework is required for PowerPoint and Visio, whereas CorelDraw requires the Visual Basic runtime.

When using the import utility, do not work with any application until the import has completed. The utility uses the clipboard and pressing keys may interrupt the script.

To open a file with the scripting utility

1 Choose File > Open. The Open dialog box appears.

2 Open the Files of type menu.

3 Select either PPT - PowerPoint 2003 (Script), CDR - CorelDRAW 12 (Script), CDR - CorelDRAW 11 (Script), or VSD - Visio 2003 (Script).

4 Click Open.

Saving documents

Choose File > Save and Save As store a document on disk. The Save command updates a document file on disk and overwrites the previously saved version.

The Save As command lets you create a new file on disk from an open document, save documents as templates, and use other graphics and text file formats.

When you use these commands, the default format for storing documents is the native Canvas format.

Saving selections and layers

Use the Save As command and options in the Save directory dialog box to save selections or layers, and create previews.

Save Entire Document The default setting tells Canvas to save a complete document.

Save Selection Choose this option after you select the objects in the document that you want to save as a new document. If you don't select anything, this option is not available.

Save Layers Select this option to save one or more layers in a new document. Then, click Layers to specify which layers to save. This option isn't available if the document has only one layer.

Use Compression Check this box to reduce the size of files saved on disk.

Preview Select the this option to save a low resolution preview of the document. In applications that support previews, you can see a thumbnail image of the document before opening the file.

To encrypt Canvas documents

Select the Encrypt checkbox if you want to apply password protection to your Canvas document.

Note: Anyone who needs to open the document must have this password.

Saving files in other formats

You can use the Save As command to export files in a variety of file formats. However, be aware that most file formats do not support every Canvas object or effect. For this reason, Canvas asks if you are sure when you select other file formats for saving files.

For example, a TIFF file can save only a single raster image; it does not support text or vector objects. If you save a Canvas document containing vector objects or text in TIFF format, all the objects in the document are changed into an image. If you then open the TIFF file, its contents appear as one raster image, so you can't edit the original text or reshape the vector objects.

When you save a document in a non-Canvas format, Canvas creates a new file on disk, but does not close the document or change the name of the document in the title bar. If you then try to close the Canvas document (without saving it in Canvas format), a message asks you to confirm that you want to close the document without saving it.

✓ Tip
Always save your work as a Canvas document, so you can edit your work later in Canvas if necessary.

To save a file

1 Depending on what you want to save, do one of the following:

- To save specific objects, select the objects.
- To save specific layers of a multi-layer document, make sure the layers you want to save are visible.

2 Choose File > Save As. A directory dialog box appears.

3 Select a file format in the menu labeled Save as type. If a format or option is not available, be sure it is compatible with the document contents.

- A prompt appears to confirm that you want to save in a format other than Canvas. Click Yes to continue. Click Save in the message box to continue.

4 Select the Save Entire Document, Save Selection, or Save Layers option at the bottom of the dialog box to specify what to save. Some options that are available when you save in Canvas format are not available when you select other file formats.

5 Type a name for the file, select a location, and click Save.

If options are available when saving in the selected file format, a dialog box appears. Configure the options as you wish and click OK. For information on file options, see the sections on specific formats in this chapter.

Rendering images

When you are saving objects and select a file format that supports images only, Canvas renders the document or selected objects. Rendering creates an image that can be saved in the selected format.

The Render Image dialog box has options for rendering (see "Rendering objects and images" on page 22.23 for more information).

Exporting files with scripting utility

Canvas can use a script-based utility to export documents to PowerPoint (2000, XP, 2003).

Note: When using this utility, both Canvas and PowerPoint must be installed. In addition, the Visual Studio .NET Framework is required for PowerPoint.

When exporting to PowerPoint, the Canvas presentation must only have ONE master layer, and it will exist on ALL PowerPoint slides. In addition, all exported objects will become OLE objects in PowerPoint.

When using the export utility, do not work with any application until the export has completed. The utility uses the clipboard and pressing keys may interrupt the script.

To export a file with the scripting utility

1 Choose File > Save As. The Save dialog box opens.

2 Open the Save as type menu and select PPT - PowerPoint 2003 (Script).

3 Click Save.

Importing and exporting images

Choose Image > Import or Image > Export to work with raster image files. These commands are especially useful because you can add new file formats by installing Photoshop-compatible plug-in modules.

Exporting images

✓ **Tip**
Export is not available if a paint object is not selected.

When you use an Export command, you create a file on disk from a single selected paint object. Using Export is similar to using Save As, except that you must select a paint object before you choose Export.

To export an image

1 Select the paint object to export. Be sure the paint object is not in edit mode.

2 Choose Image > Export > file format, where file format is the name of a file format in the Export menu.

3 In the directory dialog box, type a file name, select a location for the exported file, and then click Save.

If the image mode of the selected paint object is not supported by the chosen format, the Render Image dialog box appears. In the dialog box, select an image format supported by the file format. If an image mode is not available in the Mode menu, the selected file format does not support that mode (see "Rendering objects and images" on page 22.23 for more information).

Importing images

Choose Image > Import to import images from files on disk. You can also acquire images from scanners using the Image > TWAIN Import command.

Importing an image places it in the current document as a paint object. In most cases, Canvas stacks imported images at the center of the current view.

Note: The Open and Place commands work with image files also. The Open command opens a file as a new document. The Place command places a file in the current document. These commands do not import an image file as a proxy or import multiple images at once.

To import one or more image files

1 Choose Image > Import. The Select files to acquire dialog box opens.

2 Select the file format to import.

3 Navigate to the folder that contains the files. Files that match the format you selected appear in the files list.

4 Select one or more files to import. You can Shift-click to select multiple files in the list, and then click Open to import all the selected files. Or, you can add files from one or more folders to the selected files list, and then click Done to open them.

Note: For information about importing images with a TWAIN scanner, see "Using TWAIN-compatible scanners," page 23.1.

To import images as proxies

You can use the Acquire as Proxy option to import a low-resolution proxy, rather than a high-resolution image, from an image file. The proxy image will be linked to the original image file.

The Acquire as Proxy option appears in the directory dialog box when you import TIFF, JPEG, and CVI files.

Select the Acquire as Proxy option to place a proxy of the selected image file in the document. The proxy image will be linked to the image file. By default, the option is selected for the CVI file format (see "Image proxies" on page 27.1).

Using Canvas templates

Canvas includes many ready-made templates, and you can create your own template documents. Then, when you use the New command, you can select a template — either one supplied with Canvas or one you have created — to create a new document based on the contents and configuration of the template.

A template document stores almost all preferences settings, as well as the settings you specify with the Document Setup command, and other document setup options, including the following:

- Document type
- Configuration of layers, slides, pages, sheets and frames
- Settings for rulers, grids, guides, and views
- Current inks and strokes settings
- Text styles and default text settings

✓ Tip
If you create a template with a small amount of type, such as for a letterhead, convert the type to paths so the template can be used without particular fonts being available.

Canvas stores some settings with the application and not in particular documents, so these settings are not included in a template document. The settings that aren't stored in a template include the position of palettes on the screen and the current set of external tools.

To save a template document

1 Choose File > New to create a new Illustration, Presentation, Animation, or Publication document.

2 Choose Layout > Document Setup to select measurement units, document size and orientation, and, for Publications, the margins and column layout.

3 Choose Canvas > Configuration Center to set up preferences for the document.

4 Create or import objects that you want to store in the template.

5 Choose File > Save As. In the Save as type menu, select Canvas Template and click Save.

6 Place the new template in the Canvas\Templates folder.

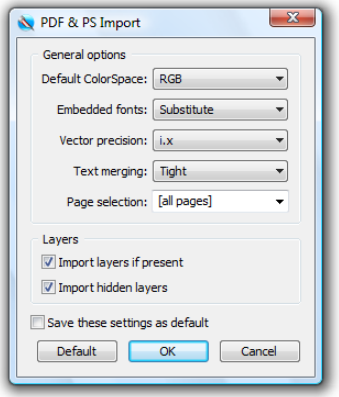
File formats

When you use other file formats that Canvas supports, you can select options when you open, place, import, save, or export some types of files. The most common file formats and their options are described in this section.

For more information on using file formats, refer to the "Read Me" file. New information that is not in the printed or online documentation will be provided in the "Read Me" file distributed with the Canvas software.

Opening PDF files

When opening PDF files, you can select your import options in the PDF & PS Import dialog box.



Default ColorSpace Select RGB or CMYK.

Embedded fonts Select either Substitute or Convert to paths.

Vector precision Select from one to three decimal points for precision.

Text merging Select an option for text tolerance.

- Disabled - Select this option for no merging, even for text/letters that are exactly next to each other
- Precise - Select this option for a very small amount of tolerance, so only letters next to each other will be merged
- Tight - Select this option for a higher level of tolerance (spaces up to approximately 2 points between letters will be ignored)
- Loose - Select this option for the highest level of tolerance, meaning "merge whenever it makes sense")

Page selection Use this option to specify pages for import. The default is [all pages]. Other predefined values are [even pages] and [odd pages], which would import only the even and odd pages, respectively. Other page selections may be specified as a combination of numbers separated with commas; e.g, 2, 5, 8, 13. Consecutive pages may be specified using two numbers separated with a

dash; e.g., 6-9. You can even use combinations like 1, 5 - 7, 9, which would import pages 1, 5, 6, 7, and 9. The combination 1, 2, 4, 6- would import pages 1, 2, 4, 6 and all subsequent pages.

Layers Select an option for importing PDF documents that contain layers.

- Import layers if present - Select this option to import all visible layers in the file. If deselected, all objects from a PDF file are imported to one layer with a default name.
- Import hidden layers - Select this option to also import hidden layers and all objects that may be on those layers. This would work even if the option above is turned off.

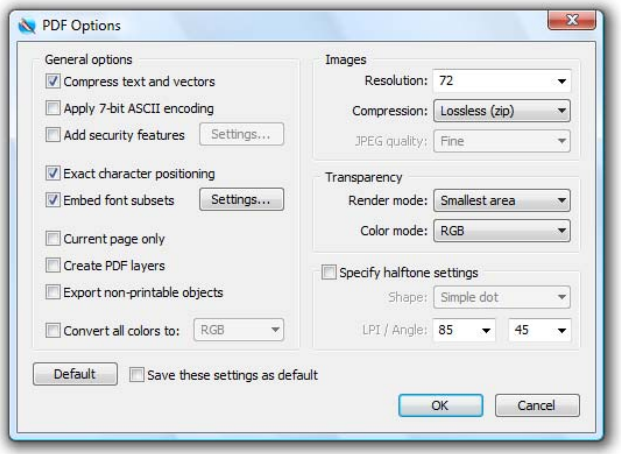
• **To save the settings as default:** Select the Save these settings as default checkbox. Click Default to obtain the default settings.

Saving in PDF format

When saving in PDF - Acrobat® format, you can select screen or printer resolution for images saved in the file. Select your export options in the PDF Options dialog box that appears before the file is saved (see "Exporting as PDF," page 35.29).

Screen saves images at a maximum 72 pixels per inch (ppi). If necessary, images are downsampled to 72 ppi.

Printer saves images at a maximum 300 ppi. If necessary, images are downsampled to 300 ppi. An image's resolution is not increased if it is less than 300 ppi.



Saving in Illustrator format

You can also save files in an Adobe® Illustrator® format by choosing File > Save As and then selecting AI - Adobe Illustrator. The AI Export Options dialog box opens as follows.

AI Export Options dialog box

A Illustrator Version. Choose the version of Illustrator in which you wish to save the file.

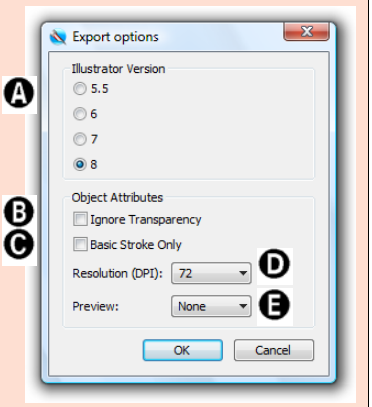
Object attributes

B Ignore Transparency. If your Canvas file contains objects with SpriteLayer transparencies, then you will need to check this option. If this feature is not activated, then all of the objects that contain transparency effects (in your Canvas file) will be converted into images. Therefore, you will not be able to edit these objects after exporting except as bitmapped images.

C Basic Stroke Only. The editing tools in Illustrator may not recognize a texture, hatch, or gradients for a stroke which you have created in your Canvas file. Therefore, you may wish to activate this option if you excpect to use some of the more specialized tools in Illustrator after exporting the file. When activated, this feature will automatically remove all complex strokes from a Canvas file during export.

D Resolution. Choose from 72 to 600 DPI.

E Preview. A document can be saved with or without a preview image. The choice of "None" can save in the resulting file size; however, if "TIFF" is chosen, then open dialog boxes that support Adobe Illustrator files can display a TIFF preview of your Adobe Illustrator file.



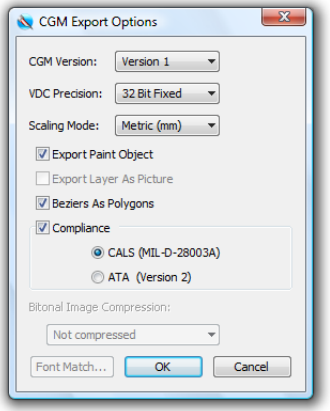
Saving CGM files

Computer Graphics Metafile (CGM) format is a standard for exchanging 2-D graphics and text. Variations and extensions to the "standard" format can create incompatibilities with the Canvas file filter. When you save a Canvas document in CGM format, Canvas makes the following image color mode conversions:

Canvas image mode	CGM image mode
CMYK, Duotone, Grayscale, and LAB color	RGB cell arrays
Black & White	CGM versions 1 and 2: RGB cell arrays CGM version 3: Black & White
Multichannel	First channel becomes an RGB cell array; other channels ignored

To export as CGM

1 Choose File > Save As.



2 Select CGM as the file format in the Save As dialog box. The CGM Export Options dialog box appears.

The CGM Export Options dialog box contains the following:

CGM Version Select Version 1, Version 2, or Version 3.

VDC Precision Select either 16 Bit Integer or 32 Bit Fixed.

Scaling Mode Select either Abstract or Metric.

Export Paint Object If your file contains paint objects, select this option to export them. Deselect this option if you do not want to export the paint objects.

Export Layer As Picture If selected, each layer is exported as a separate image. If deselected, the file will be exported as one image.

Beziers As Polygons If objects contain a fill ink, select this option to preserve it. All beziers will export as polygons. If this option is deselected and the objects are exported as beziers, the fill color is removed.

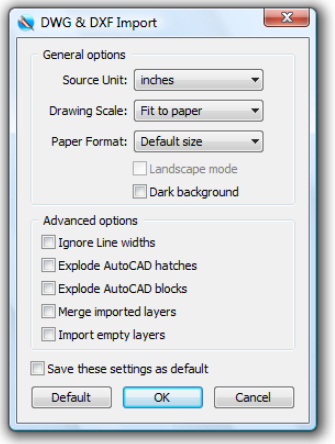
Compliance Select either CALS or ATA.

Bitonal Image Compression This option is enabled if Version 3 is selected in the CGM Version menu. Select either Not Compressed, Group 3 (1-dimensional), or Group 4 (2-dimensional).

Font Match Click this button to open the CGM Font Matching dialog box. Select a substitute font if you want to change the font when exported to CGM format. The font remains the same in the original file.

Canvas also supports importing CGM and CGM*PIP files (see “CGM*PIP Import Filter,” page 37.1).

Using AutoCAD DWG format



Defined by AutoCAD, DWG is accepted as the standard file format for data interchange by CAD users worldwide. The AutoCAD DWG import filter lets you import native AutoCAD® 2004 files. into Canvas. This filter fits an AutoCAD drawing into a specified page format.

To open DWG files

1 Choose File > Open or File > Place and select DWG - AutoCAD format in the directory dialog box. The DWG & DXF Import dialog box opens.

2 Enter the following information in the import dialog box.

Source Unit Select the source unit from the menu. The chosen unit will become the document unit.

Drawing Scale Select a scale from the menu. You can even use Fit to Paper if necessary.

Paper Format Select a paper size from the menu.

Landscape mode Select this option to change the page orientation.

Dark background Select this option to use a black paper color. The lines will be white on import. The paper color can be changed after in the Document Setup manager (Layout > Document Setup).

Ignore Line Widths Select this option to set a hairline stroke for each object.

Explode AutoCAD hatches Select this option to convert any hatch inks in the original to objects.

Merge imported layers Select this option to merge all imported layers into one layer in Canvas.

Import empty layers Select this option to import any empty layers in the original file.

- **To save the settings as default:** Select the Save these settings as default checkbox. Click Default to obtain the default settings.

Using Drawing Interchange Format (DXF)

Drawing Interchange Format (DXF) is a format developed by Autodesk, Inc., for exchanging data with AutoCAD and other drawing applications. DXF format provides platform-independent

storage of 2D and 3D technical drawings and supports multiple layers. Canvas supports DXF files containing ASCII data, but does not support DXF files that contain data in binary format.

To open DXF files

When opening or placing DXF files, the DWG & DXF Import dialog box appears. The DXF filter fits a DXF file to a specified page format. As with, the DWG import, you should know the Source Unit, Paper Format, and Drawing Scale (see "To open DWG files," page 13.12).

When opening a DXF file, Canvas makes the following conversions from DXF objects to Canvas objects:

DXF objects	Canvas objects
Blocks	Groups
Traces, Solids, and Quadratic polylines	Polygons
B-spline Polylines	Bézier curve paths
ATTDEF and ATTRIB	Text objects

Canvas doesn't support 3D objects (3D lines and 3D Face objects in DXF files), so these objects are not imported into Canvas.

To export DXF files

When you save a document in DXF format, Canvas converts the following Canvas objects and attributes to DXF objects and attributes:

Canvas objects / attributes	DXF objects / attributes
Paint object	Not converted
Pen and fill patterns	Solid pens are exported; fills are not exported
Arcs	Polylines
Calligraphic pen strokes	Fixed-width pen strokes
Continuous dashes	Dashes start in each segment
Layer names with spaces or non-uppercase characters	Spaces removed and characters become uppercase
Grayed layers	Objects appear in original colors

In the DXF export options dialog box, select the platform format to use. You can also select options for exporting lines and circles.

Using Encapsulated PostScript (EPS)

Encapsulated PostScript (EPS) is a file format used to save individual PostScript graphics.

To open EPS files

When you open or place an EPS file, a dialog box prompts you to choose an import method. Choose an option and click OK.

Create EPSF Object Imports the EPS file as an EPS object. This object can be rotated or scaled, but you can't select or edit parts of the graphic. Canvas displays a preview image if the file contains a preview in a supported format.

Create Canvas Objects Interprets the EPS file's PostScript code to convert the EPS graphic to editable Canvas objects. Raster images become Canvas paint objects and vector objects are maintained as vector objects. Text is imported as one or more text objects. The EPS preview image is not imported. Specialized objects and attributes that have no Canvas equivalent might not be imported.

Place EPSF Reference Inserts a link to the EPS file and displays its preview image in the Canvas document. This option is useful for keeping the size of the Canvas file smaller than if EPS files are imported directly into the document. If you use this option, the EPS file must be available when you print the Canvas document. If the EPS file changes, the Canvas document is updated when you print it.

Saving as EPS

To save a file in EPS format, choose File > Save As. In the directory dialog box, select EPSF format. Select options in the dialog box that appears (described next) and click OK to save the file.

When you save a Canvas document in EPS format, you could lose specialized objects and attributes that are not supported in EPS. Canvas transparency effects are rendered and stored as images in EPS graphics, using the Transparency Rendering option and resolution that you select.

EPSF Type Choose **EPS** to create a composite (non-separated) EPS file. Choose **DCS Version 2** to create a single, pre-separated EPS file in DCS version 2.0 format. You can use a DCS file to output color separations from programs that support this format.

Current Page Saves the current page, slide, sheet, or frame only. To save a range of pages, enter the starting and ending page numbers in the **From** and **To** boxes.

Preview Select a format to store a preview image in the EPS file. Canvas and other programs that support EPS previews will display the preview when the EPS file is placed in a document. The image format and color mode you select are applied to the preview image only.

Choose None for no preview, or choose a color mode to save a preview image. Preview images are saved in TIFF format. A preview will not appear in programs that support only WMF or EMF previews.

Use Compression Select this option to compress TIFF preview images. Some programs can display only non-compressed TIFF previews. If TIFF preview images do not appear correctly, try deselecting this option.

Image Compression Select a format for storing raster image data. **Binary** is the most compact non-compressed format. **ASCII** encodes raster data as text, the least compact format. **Level 2 ASCII** is somewhat more compact than ASCII format. **RLE** compresses binary data and makes the most compact EPS files. To save EPS files for Photoshop or Illustrator, use Binary format.

Color Mode for EPS format Select a color mode to apply to colors in the EPS file. The available modes correspond to RGB, CMYK, Grayscale, and Black & White modes for paint objects.

- Colors created with RGB, HSL, CMYK, or grayscale values will be converted to the selected mode in the EPS file.
- Spot colors defined in Canvas with the Spot Color option in the Color manager or a spot color library will be saved in the EPS file as spot colors, and also with color values in the selected mode.

If you print color separations from an EPS file in another program, you can usually output process and spot color plates, or just process color plates, depending on whether you specify spot and process separations or process-only separations.

Color Mode for DCS format Select a color mode for the separations stored in the EPS file:

- Select **CMYK** to separate all colors, including spot colors, as process (CMYK) colors.
- Select **CMYK + Spot** to separate all colors, except spot colors, as process (CMYK) colors. Spot colors will not be converted to process and will be separated as spot colors.

When you use DCS Format and print color separations, the program you use simply outputs the color separation plates as defined in the DCS file; it does not apply its separation method or options to colors in the file. Therefore, if you want to be able to output process and spot color plates, you should select CMYK + Spot Color Mode when you use DCS Format to save illustrations in EPS files.

Transparency Rendering Select a method for SpriteLayer and SpriteEffects rendering into EPS format. These options are similar to the rendering options that are available when you print a document.

- **To render effects:** Choose Smallest Area, Complete Area, or Entire Document.

Smallest Area results in rendering the minimum area necessary to show transparency and SpriteEffects. **Complete Area** renders the minimum area, plus any object that touches the rendered area. This setting can prevent a slight color shift between rendered and non-rendered areas within an object. **Entire Document** renders everything in the document (or selection) as an image to be saved in the EPS file.

If you choose **Don't Render Transparent Objects**, transparency and SpriteEffects won't be rendered.

Rendering Resolution Select a resolution for rendering effects. In general, you should specify a resolution based on the publication requirements for images.

Embed Fonts (Windows only) Select this option to embed fonts in the file, so text can appear as intended if the required fonts aren't available.

Use Page Dimensions Select this option to save the full area of the document page, sheet, slide, or frame in the EPS file. If this option is not selected, the EPS graphic will be only as large as the saved objects.

Converting EPS objects

After you import an EPS file, choose options from the context menu to convert the object or view information about it.

You can view linking information if the file was imported as an EPSF reference. If the file was imported as an EPSF object, you can convert it to an EPSF reference. If it was imported as an EPSF object, you can create Canvas objects from it.

- **To use EPSF Object commands:** Select the EPS graphic and right-click. In the context menu, choose one of the options described below.

Convert EPSF into Canvas Objects If you choose to create Canvas objects from an EPSF object, the EPSF object is replaced in the document by equivalent Canvas objects. Depending on the contents of the original EPS file, you might not be able to edit some objects as you expect after the conversion. For example, you would not be able to edit text if the EPS file contained outlines (paths) for text characters, rather than the characters themselves; you could use path-editing techniques to edit the objects.

Embed EPSF Into Document If an EPS graphic has been imported with the Place EPSF Reference option, you can use the context menu to convert the graphic from a linked EPS graphic to an EPS graphic that is placed in the document. The result is the same as importing an EPS file and selecting Create EPSF Object.

EPSF Info... You can get information from an EPS graphic if it was imported with the Place EPSF Reference option. Canvas will display information on the location of the EPS file that is linked into the document. If the file can't be found in its original location, Canvas displays a message. To re-link the file, click File, and use the directory dialog box to select the EPS file. Then, click OK in the message box.

Saving Web graphics (GIF/JPEG)

For saving graphics in GIF and JPEG formats (the standard Web image formats), you have the choice of using the integrated dialog box (Web Images) or the individual GIF or JPEG dialog boxes.

- **To export or save as GIF:** Choose File > Save As or Image > Export and select GIF as the file format. Make your adjustments in the GIF Export Options dialog box.

- **To export or save as JPEG:** Choose File > Save As or Image > Export and select JPEG as the file format. Make your adjustments in the JPEG Export Options dialog box.

GIF format GIF is the best format for graphics that contain a small number of colors, such as vector art with flat colors. GIF format supports Black & White, Grayscale, and Indexed color images, with 1 to 8 bits of color data for a maximum of 256 colors.

JPEG format JPEG format provides compression of high resolution, full-color (24- bit) RGB images. JPEG is designed for efficient storage of continuous-tone images such as photographs. JPEG is an abbreviation of *Joint Photographic Experts Group*, a standards organization that promoted the format.

To save graphics as Web Images

✓ **Tip**
You can use a wizard to save graphics for the Web. Select the images you want to save, and choose File > Save to Web.

1 Select the objects to save, or Canvas will save the current document page. Choose File > Save As.

2 In the directory dialog box, select Web Images in the file format pop-up menu. Type a name for the file and select the save location.

- To save only the selected objects, click Save Selection.

3 Click Save.

4 Unless you are saving a single paint object, the Render Image dialog box appears. Select rendering options and click OK (see "Rendering images" on page 13.4).

5 The Export Preview dialog box appears. Select either format and use multiple preview panes to compare how the format and other settings will affect your images before saving (see "Export Preview options" on page 13.19).

6 Click Export to save the file.

To export images in GIF or JPEG format

Exporting lets you save selected images, but not entire documents. The difference between Save As and Export is that Save As will render objects or an entire document to create an image that can be saved. Export will save only a single paint object, without rendering.

1 Select a paint object to export.

2 Choose Image > Export > Web Images.

3 The Export Preview dialog box appears. Select either format and use multiple preview panes to compare how the format and other settings will affect your images before saving (see "Export Preview options" on page 13.19).

4 Click Export to save the file.

5 A directory dialog box appears. Type a name for the file and choose a location to save the file, and then click Save.

Export Preview options

The Export Preview dialog box shows one, two, or four previews of a graphic image when you choose Save As or Export and select GIF or JPEG file format. You can select settings for each preview image to compare how the file format, palette options, and other settings will affect the image you are saving.



A color tile shows the color you point to in a preview image. Two pairs of coordinates are displayed below the preview panes. One pair are the X,Y coordinates of the pointer. The other pair are the coordinates of the pixel at the upper-left corner of the preview panes.

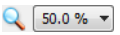
Preview setup



Click a preview button to change the preview setup. You can select one preview, two previews (horizontal or vertical), or four previews.

One preview pane is active and has a highlighted border. Click a pane to make it active. The settings in the dialog box apply to the active preview. The settings in the dialog box can be different for each preview. When you select a preview, Canvas updates the dialog box to show the settings for the active preview.

All panes show the image at the same view location and zoom level. Drag on a preview image to move the view location.



Use the zoom menu to zoom in or out. Or, click the Magnifying Glass button, then click a preview image to zoom in. To zoom out, Shift-click a preview image.

Without selecting the Magnifying Glass button, you can zoom in or out by clicking in a preview image. Press Ctrl or Ctrl+Shift and click.

Previewing the current settings

Each preview pane shows the original image. To view how the selected file format and other settings will affect the image, select the **Show Preview** option above a preview pane. Canvas will apply all the settings in the dialog box to the preview image. If you change a setting, Canvas will apply the new setting.

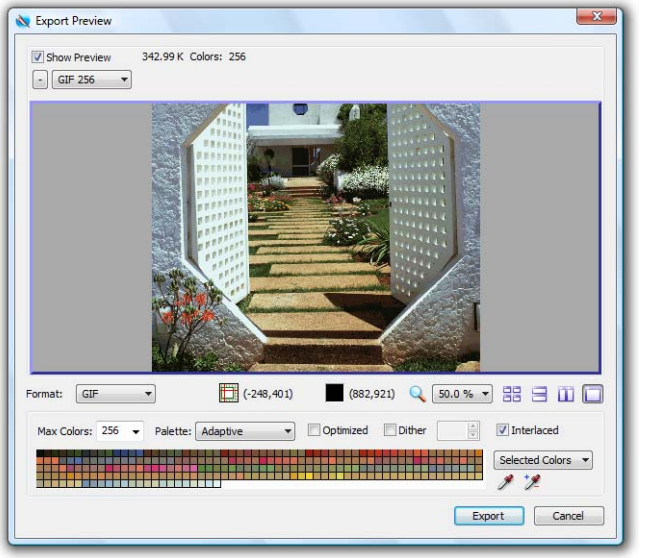


Image file information When Show Preview is selected, the estimated file size and the number of colors in the image appear above the active preview pane. The first value is the estimated file size in kilobytes. The second value is the number of discrete colors that will be saved in a GIF file; the value is not shown for JPEG format.

JPEG options

To use JPEG format, select JPEG from the Format menu. Canvas applies the JPEG format and settings to the active preview pane.

Quality Enter a percentage value from 1-100%. Higher Quality values result in less compression and better retention of original image quality.

Smoothing Enter a smoothing value from 1 to 6. JPEG compression can cause color blocks to appear in an image. Smoothing softens the image to make color blocks less noticeable. Higher values produce more smoothing.

Progressive Select this option to create a JPEG file that Web browsers can display at increasing resolution as the image is loaded.

Downsampling This option can help improve compression. Downsampling reduces the image resolution by averaging color values while preserving luminosity details. Programs displaying the image will "upsample" to the original resolution, so greater compression is achieved without changing the display resolution of the image.

Optimized This option can help produce smaller file sizes. When Optimized is selected, some of the least important color information is discarded to produce more efficient compression.

GIF options

To use GIF format, select GIF from the Format menu. Canvas applies the GIF format and settings to the active preview pane.



Max colors Use the menu or type in the box to specify the maximum number of colors to be used in the image. Fewer colors can result in a smaller file, but too few colors will degrade an image.



Palette A palette is a set of colors used in an image. To be saved in GIF format, an image can contain no more than 256 colors. If the image contains more colors, the original colors are mapped to the colors in the palette that you choose.

- **Adaptive :** creates a palette that tries to match as close as possible all the colors in the image. This option is the best for preserving the original color range of an image.
- **Web :** uses a standard color palette supported by major Web browsers. The range of colors in the Web palette, however, can cause color shifts in images with many shades of a few colors.
- **Uniform :** uses a palette of colors that are uniformly distributed through the range of possible RGB colors.

- **Exact :** creates a palette from the actual colors in the image, if the image contains fewer than 256 colors. If the image contains more than 256 colors, Canvas uses the Adaptive option.

Note: To apply a custom or system color palette to a paint object before saving in GIF format, select the paint object and choose Image > Mode > Indexed. In the dialog box, select a palette option and click OK. To modify an Indexed mode paint object, choose Image > Mode > Color Table.

Optimized Select this option to merge single pixels into similar colored areas to produce smaller file sizes. However, in images with fine lines or detail, this option can reduce image quality. This option is less effective when Dither is also selected and an image has a limited number of colors.

Dither Select this option if you want Canvas to use dithering to simulate a greater range of colors. Dithering can make an image appear to have more colors than are in a limited color palette, but it can also make an image appear grainy or noisy. To control the amount of dithering, enter a percentage from 1 to 100 in the text box.

Interlaced Select this checkbox to save the image as an interlaced GIF. Interlacing divides the image data for faster initial display in Web browsers that support interlaced GIF images; i.e., the image appears progressively on the Web page.

Selecting transparent colors



The Dropper tools in the Export Preview dialog box let you make colors in a GIF image transparent. Click in the color palette or the current preview image to select colors for transparency. When you select a color, it becomes highlighted in the grid.



Use the regular dropper to select one transparent color. If you click another color, it replaces the current transparent color.



Use the add/subtract dropper to select additional colors to be transparent. Each color you click becomes transparent. To restore a transparent color, click it again.

A checkerboard pattern appears in areas of the preview image that are transparent.



Color palette The area below the GIF options shows the current color palette for the image. The palette changes when you change the Palette or Max Color option.

Saving settings

Save the current options in the Export Preview dialog box and then apply the same setup to other images.

To save the current options in the dialog box, choose Save Setting in the menu above the current preview pane. Type a name for the saved setting and click OK. This setting will be available in the menu above each preview pane.

- **To use a saved setting:** Select the Show Preview option above a preview pane and then select the saved setting in the menu.
- **To delete a saved setting:** Select the setting in the menu, and then choose Delete Setting. Canvas will ask you to confirm that you want to delete the setting.

Importing Photoshop files

When you open or import a Photoshop file that contains layers, Canvas imports the file's layers as separate objects and stacks them in the document on the current layer.

Layers that have transparency are imported with visibility masks. Canvas creates an alpha channel and a channel mask for a Photoshop layer mask. Canvas also imports alpha channels.

Using Tag Image File Format (TIFF)

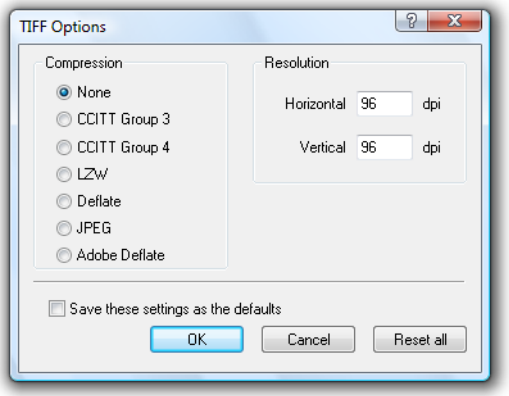
✓ **Tip**
Canvas can read tiled TIFFs. A tiled TIFF is an image divided into smaller, rectangular portions.

Tag Image File Format is a high resolution, raster image format. Canvas supports both RGB and CMYK TIFFs. Although TIFF is a common format, many TIFF variations exist. Different resolutions, color systems, previews, and compression schemes make the format flexible, but can cause compatibility problems.

When you save TIFF files, you have various options in the Export TIFF dialog box.

TIFF Compression

Various compression options are available, depending on the mode of the image you are saving.



None saves an image without compression (the most compatible format).

Group 3 and Group 4 are available to compress images that are in black-and-white mode.

LZW can be applied to all image modes, except CMYK Color.

Deflate applies a lossless compression to the image.

JPEG applies a JPEG lossy compression to the image.

Adobe Deflate reduces image size but does not affect image quality since it is a lossless compression.

Resolution indicates the default resolution. Enter a value in the Horizontal and Vertical field if necessary.

To export as TIFF with transparency

Canvas supports transparency in TIFF images upon import and export. In Canvas, you can create transparency in images using either a clipping path, channel mask, or visibility mask.

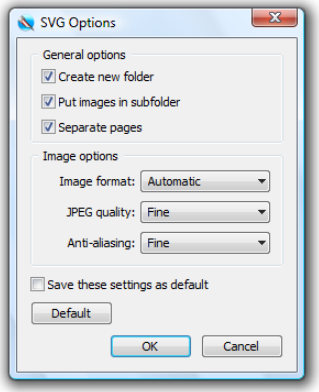
1 Create the object and apply one of the aforementioned transparency techniques.

Note: If you are using vector objects, the vector objects will be rendered before exporting.

2 Choose File > Save As or Image > Export.

Saving as SVG

Scalable Vector Graphics (SVG) is a vector graphics language written in Extensible Markup Language (XML). This format enables two-dimensional images to be displayed in XML pages on the Web. With the SVG format, graphics are coded directly into an XML document.



In contrast to JPEG and GIF images on the Web, which are bitmapped and always remain a specified size, SVG images are scalable to the size of the viewing window and will adjust in size and resolution according to the window in which it is displayed.

To save as SVG

1 Choose File > Save As and select SVG as the file format.

2 Click Save to open the SVG Options dialog box.

General options

This dialog box is similar to the HTML Options dialog box (see "HTML options," page 35.24).

Create new folder organizes files by placing them in a new folder in the specified location. The name that you enter when you are saving a SVG is used for the folder's name.

Put images in subfolder creates a subfolder for the image files.

Image options The HTML options dialog box offers identical choices for image export (see "Image Options," page 35.24).

Exporting as AVI

AVI is the abbreviation of Audio Video Interleave, which is the most common format for audio/video data on the Windows system. When opened, an AVI file plays in a similar fashion to an animated GIF file.

Canvas has the capability of saving certain Canvas files in AVI format. Canvas documents that contain frames, animations or presentations, can be saved as Audio Video Interleave. Even a document with a single frame can be saved in AVI format providing a default time for the single frame is set to 1 second.

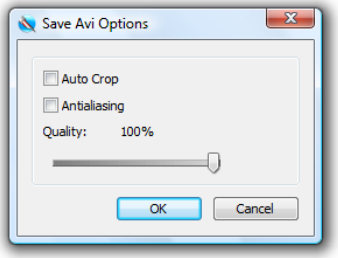
When working with Animation documents, you set the timing via the Document Layout palette (“Setting options in the palette,” page 11.3). If you are creating a Presentation document, use the Slide Show palette to control timing (“Slide Show palette,” page 36.2).

To export as AVI

1 Create your document in Canvas and choose File > Save As.

2 Select the AVI file format.

3 Click Save. The Save AVI Options dialog box opens.



Auto Crop This feature optimizes the size of each frame and the document. The Auto Crop option will create the minimum size needed to accomodate all of the objects in the document.

Antialiasing Objects from the Canvas document will be rendered with an overall softened effect.

Quality This option affects the compression of the images. Move the slider bar to the right to lower the image quality or to the left to increase the compression, thus improving image quality.

Using text files

Text is a standard format for files containing only ASCII (American Standard Code for Information Interchange) encoded characters.

Text format is available on nearly every computer platform; it’s the “plain vanilla” format, the lowest common denominator for words and numbers. Text files don’t include proprietary or application-specific character or formatting codes. Some punctuation marks, symbols, and all accented letters are non-ASCII characters that display incorrectly when used in text files. Still, ASCII text can be used to transfer text among a variety of applications, including text editors, word processors, and databases.

When you open a text file, Canvas creates one text object containing the file’s contents, and assigns the default font and text formatting attributes to it. If the file contains more text than can fit in the Canvas workspace, Canvas truncates the text object and displays an overflow indicator. You can then flow the truncated text into other columns.

Using Object Linking and Embedding

Object Linking and Embedding (OLE) lets you easily exchange graphics among programs. Since Canvas provides full OLE support, objects you exchange retain their full functionality and are editable with all the tools of the original application.

Windows programs provide various levels of OLE support. In OLE parlance, Canvas is a fully capable *object* and *container* application. Briefly, this means Canvas can transfer objects to and from other programs through OLE.

In the world of OLE, objects created in Canvas are identified as "Canvas Drawing" objects. If you use the Insert Object command in another application, you should be able to select "Canvas Drawing" as a type of object to insert.

Inserting objects into Canvas documents

You can use three methods to insert objects in a Canvas document: the Clipboard, drag-and-drop, and the Insert Object command. The objects you insert can be either linked or embedded.

Clipboard When you copy Canvas objects to the Clipboard, Canvas places OLE formats, as well as lower-fidelity formats, on the Clipboard. When you paste into another program, that program receives the highest-fidelity format it can accept. If the other program is an OLE container, pasting creates an embedded OLE object.

When pasting into Canvas from other applications, a MetaObject container is created. The MetaObject is a Canvas "Container" for a system metafile (WMF/EMF). It will draw, print, and act like a normal Canvas object using the system to render it. This should preserve the fidelity of the metafile.

The MetaObject container method eliminates problems in scaling, positioning, and overall look. OLE and pasting as metafile will automatically create a MetaObject. To convert the MetaObject to a Canvas object, choose Object > Path > Convert To Paths.

Drag-and-drop In Windows, you can drag objects from Canvas documents to almost any destination on the Desktop (including local and network folders) to create a "scrap" file containing the objects. You can also drag Canvas objects into other documents,

and drag objects, such as scrap files and other program's objects, directly into Canvas documents. When you drag an object to another program, it creates an embedding.

You can copy an object when you drag it by pressing a modifier key. Normally, dragging moves the object. If you want to copy the object, rather than move it, Ctrl-drag the object to another document. This copies the object and creates an embedding.

Insert Object Choose Edit > Insert Object to open a dialog box in which you can choose any registered OLE object type to insert into a document. Create a new object or choose a file as the source of the embedded object.

To embed objects

✓ Tip
Not all programs support OLE and can create embeddings.

When you embed an object in another document, use the original program's tools and commands to edit the object.

1 Select the objects you want to embed in another document.

2 Choose Edit > Copy to put the selection on the Clipboard.

3 Switch to the document where you want to embed the selection and choose Edit > Paste. The object is embedded into the document.

To link objects

✓ Tip
Not all OLE programs support OLE linking.

If you want an object to be updated when it changes in the original document, create a link to the object. The Canvas document from which you copy objects to be linked must have been saved before you copy the objects.

1 Select the objects to link and choose Edit > Copy.

2 Switch to the document where you want to paste the linked object and choose Edit > Paste Special. In the dialog box, Canvas Drawing format is selected.

3 Click Paste Link to link the object.

To manage linked objects

Use the Links command to check the source file of a linked object and repair a broken link if a source file has been moved.

1 Select a linked object in a document.

2 Choose Edit > Links. The Links dialog box displays the link type and update method. To change the update method, choose the Automatic or Manual option.

3 Use the buttons to update or change the linked object:

- **To update the object from its source:** Click Update Now.
- **To open the source document:** Click Open Source.
- **To select a different source document:** Click Change Source.
- **To remove the link so changes to the source do not affect the linked object:** Click Break Link.

Differences between linking and embedding

When you insert an object into a Canvas document, or insert an object from Canvas into another program's document, you create an association between the object and its application. Linking and embedding create different types of associations.

Linking When you link an object, the object remains in the file where it was created. Only a link (reference) to the source object winds up in the document, which makes linking an efficient method of storing commonly-used objects and files. Linking makes a dynamic connection between an object and all documents in which it appears. When you edit the object, changes are automatically sent to linked instances of the object in all documents.

Since the object is linked by only a reference to another file, if any of the linked files change locations, the link will be disrupted. To move linked files without disrupting the references, you must move all linked files as well as the entire directory structure so that the relative locations of the files don't change.

When you edit a linked object, the object's application opens in a separate window. When you finish editing, close the application to return to the document containing the link.

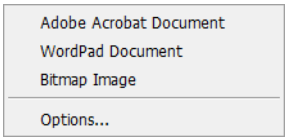
Embedding When you embed an object in a document, the object itself (not just a reference) is copied into the document. Therefore, a document can be moved to another computer without losing the object.

Inserting ActiveX Controls in documents



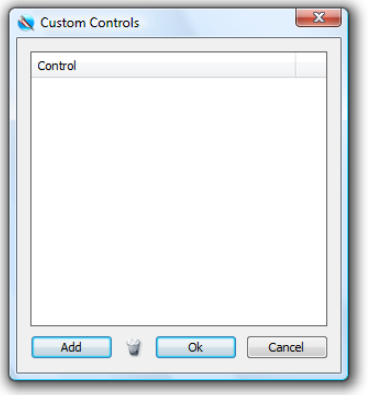
ActiveX controls may include Microsoft Office Excel Charts, scroll bars, command buttons, option buttons, toggle buttons, etc. To set the properties for the ActiveX control, refer to the documentation for Visual Basic.

To insert an ActiveX control



1 Depress the ActiveX icon to open the ActiveX options menu.

2 Select the control to be inserted. If the control is not in the list, select Options to open the Custom Controls dialog box.



3 Click Add to open the Insert Object dialog box.

4 Select the object or control to be added to the Custom Controls dialog box.

5 Click OK to return to the Custom Controls dialog box.

- **To remove a control from the Custom Controls dialog box:** Select the control in the list and click the Trash icon.

Printing to Canvas

You now have a method of converting electronic files to Canvas — the Canvas Print Driver.

Note: This option is only available for Windows XP. To install the Canvas Print Driver, choose Help > Install Canvas PS Driver.

Creating Canvas files using Canvas Print Driver

In an application, like CorelDraw, use the File > Print command with the Canvas Print Driver to print the current document to Canvas.

To create a Canvas file using the Print command

1 Open the document that you want to print to Canvas.

2 Choose File > Print.

3 Select Canvas Print Driver from the list of printers. Enter any other print information in the Print dialog box.

4 Click OK to begin creating the temporary postscript file. Once this file has been created, Canvas is invoked. The objects in the original file will be created in Canvas.

1

OBJECTS & ATTRIBUTES

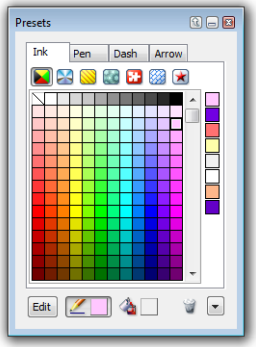
CHAPTER 14

INKS: COLORS & PATTERNS

Inks in Canvas are solid colors, or multicolored patterns that you apply to vector and text objects. You can apply inks to the interiors and outlines of vector objects and text.

This chapter describes how to create and apply inks, from basic solid color inks to custom multicolored inks. It also explains how to define inks.

Presets palette



Use the Presets palette to apply inks, select the current inks for new objects, load inks, and delete inks.

- **To open the Presets palette:** Click on either the Pen Ink icon or Fill Ink icon in the Toolbox. Drag the palette away from the Toolbox to float it. The Presets palette opens with the Inks tab selected.

Ink types

Six icons are located at the top of the Inks tab, which you click to access the available ink types: color, gradient, hatch, texture, symbol, and pattern. The circular icon with a diagonal line represents "no ink".

Color inks Refers to inks using solid colors.

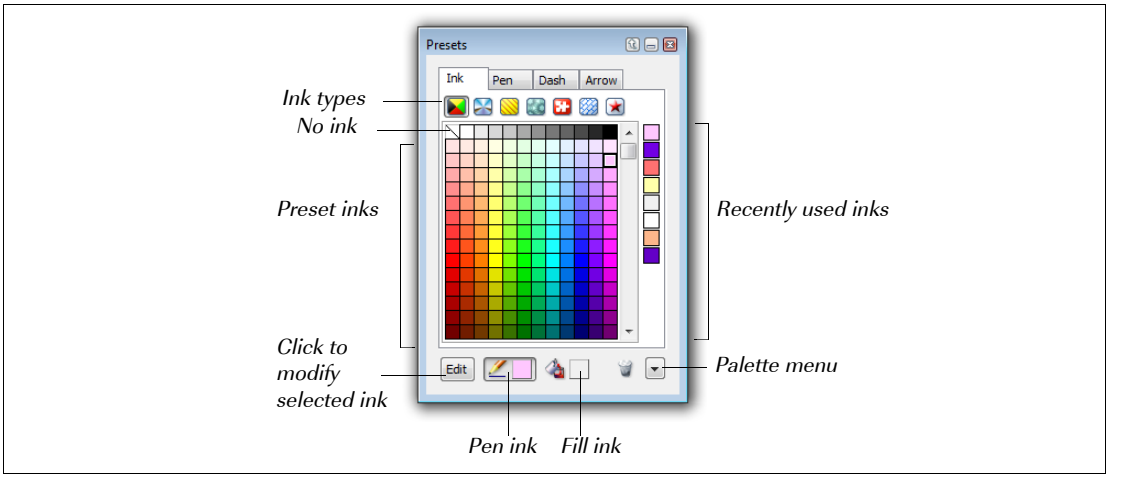
Gradient inks Refers to inks with smooth blends between two or more colors.

Hatch inks Refers to inks with line patterns. Hatch inks can incorporate other pen and fill inks.

Texture inks Refers to inks with patterns of raster images. Texture inks can include other inks as backgrounds.

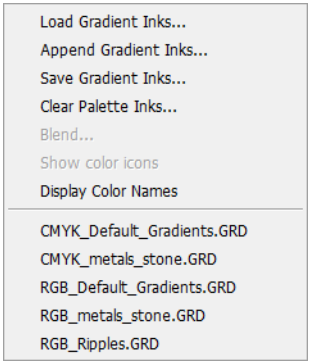
Symbol inks Refers to inks with patterns of vector objects, image objects, or text objects. Symbol inks can include any other ink as a background.

Pattern inks Refers to inks that are 72 dpi bitmap representations with a fixed size of 8 x 8 pixels.



Loading, appending, saving, and clearing inks

The Presets palette menu, located at the bottom-right corner of the palette, contains all the commands for you to load, append, save, or clear inks.



Commands correspond to the name of the current ink type.

Load Loads a stored ink palette to replace the current palette. Save the current palette if necessary.

Append Adds inks from a palette file to the inks on the current tab.

Note: Canvas won't load or append inks that don't correspond to the current ink type.

Save Saves the current ink palette as a palette file. Saved ink palettes can be shared with other Canvas users.

Clear Removes the inks (except "no ink") from the current ink palette. For color inks, Canvas restores black and white (CMYK) inks after clearing all the inks.

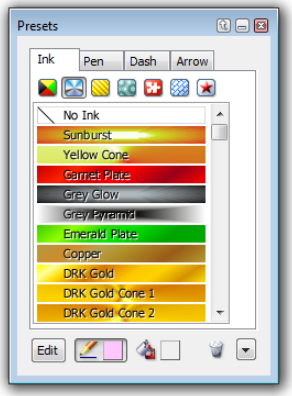
When you add or delete inks in the palette, the changes are recorded in a Canvas Settings file, not in the Canvas document, so the palette contents remain the same the next time you use Canvas.

Identifying inks

You can display color names that identify the inks that are stored in the Presets palette. This function affects all ink types in the palette. If an ink was not given a name, no name will appear.

You can also differentiate between RGB, CMYK, and spot colors when working with color inks by showing color icons.

To identify inks by names



If the color ink type is selected, the inks will indicate RGB, CMYK, or grayscale percentages. For gradient, hatch, symbol, pattern, and texture inks, a name is displayed.

- **To display ink names:** Open the Inks palette menu and choose Show Color Names.
- **To hide the ink names:** Open the Inks palette menu and deselect Show Color Names.

To identify inks with color icons

Color icons help you identify RGB, CMYK, and spot colors when working with the color inks.

Note: Selecting Show Color Icons only affects the appearance of the color inks in the Presets palette. The other inks are not affected.

- **To display color icons:** Select the color ink icon and open the palette menu. Choose Show Color Icons.
- **To hide the color icons:** Choose Hide Color Icons in the menu.

The color inks can contain inks defined with RGB, CMYK, grayscale, and spot colors.

RGB color

CMYK color

Spot color

- The symbol for RGB color inks has tiny red and blue triangles and a green square. The symbol appears at the upper-left of RGB color cells.
- The symbol for spot color inks is a white triangle. The symbol appears at the lower-right of spot color cells. If the Show Color Names option is activated, no symbol appears for the spot color.
- No symbol appears on CMYK or Grayscale ink cells.

Note: When working with color inks, if the Inks tab contains only CMYK colors, no symbols appear when you choose Show Color Icons.

Arranging ink cells

To rearrange ink cells in the Presets palette, drag a cell within the palette and drop it where you want to place it.

- **To move contiguous ink cells to a new location:** Click the first ink cell and then Shift+click another cell. Canvas highlights all cells between the colors you click.
- **To select non-contiguous cells:** Ctrl+click the cells you want to select. Drag the selected cells to a new location in the palette.

Applying preset inks

The Inks tab has six ink types that you can apply as pen or fill inks.

A Pen ink icon. Press to select pen inks for object outlines.

B Fill ink icon. Press to select fill inks for the insides of objects.

C Ink types. Select the type of ink you want to apply.

D Preset inks. Select an ink in the grid. Use the scroll bars if all the preset inks aren't visible.

E No ink. Click this icon to apply no inks, or to make the current ink for new objects "no ink."

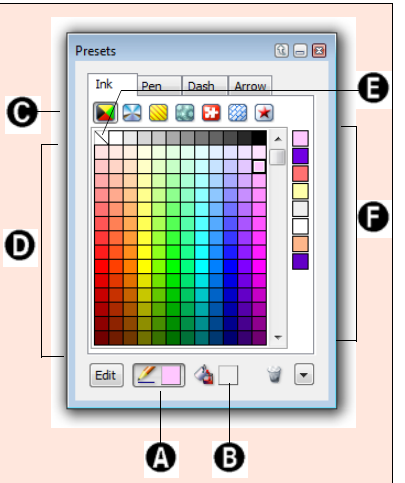
F Recently used inks. Select an ink from here as well.

To apply inks to existing objects, select the objects and then choose pen and fill inks.

To change the inks that Canvas applies to new vector and text objects, deselect all objects, then choose pen and fill inks. The ink icons in the toolbox show the current inks.

To remove an ink from the palette: Drag the ink cell to the trash can.

Since pen inks are applied to the strokes of objects, the appearance of an object's pen ink is affected by the shape of the object's stroke (see "How inks affect strokes" on page 15.1).



Attributes palette

Use the Attributes palette and its various ink managers to create your own inks. Each ink type has its own manager. Flip open the managers to create inks, adjust inks in objects, and change the Presets palette's inks.

- **To open the Attributes palette:** Click the Edit button in the Presets palette

Another way of opening this palette is by selecting an ink on the Presets palette and then clicking the Edit button. The Attributes palette opens with the Inks tab selected.

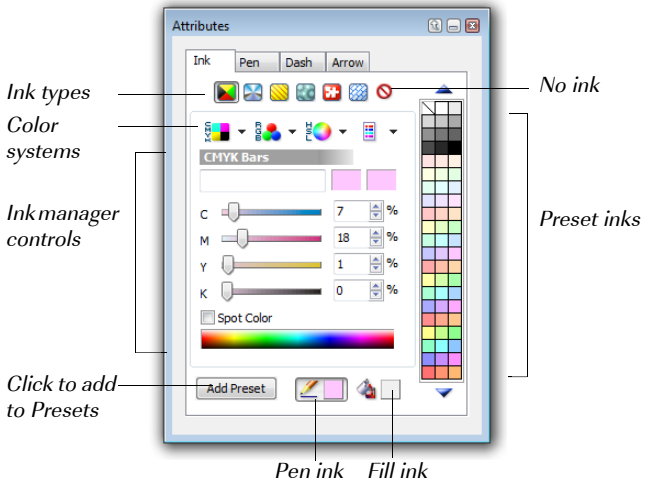
Tip

Each ink type has its own manager so you create custom inks and add them to the Presets palette.

Inks managers

Six icons are located at the top of the Inks managers, which you click to access the available ink types and their respective managers: color, gradient, hatch, texture, symbol, and pattern. The circular icon with a diagonal line represents “no ink”.

If you select color as the ink type, you can access the RGB, CMYK, HSL, and Pantone color systems.



Using the Inks managers

Every ink manager shows a preview of the current ink. The preview changes as you modify the ink. If an object is selected, the ink is applied immediately. You can also drag the ink from the preview box to deselected objects.

To edit an object’s ink, click the pen ink icon or fill ink icon. Then select an object; its ink becomes the current ink in the manager. Modify the ink.

To make a new ink, use the appropriate manager to customize the current ink.

Type a name in the text box to name it.

To add an ink to the Presets palette, click the Add Preset button.

To make an ink the current ink, deselect any objects and click the pen ink icon or fill ink icon. Then select an ink in any of the managers.

To apply an ink to a deselected object, drag from the preview box to the inside or outline of the object.

Creating color inks

The Color Manager gives you the ability to maintain and manage color inks by providing access to RGB, CMYK, HSL, and Pantone models. A Color Spectrum Strip is also available for quick color pickup of any color supported by Canvas.

Color manager controls

The Color Manager's controls depend on the selected color system and model. Some controls are common among the different color models.

A Current ink.

B Last-applied ink.

C Bars. Use the sliders, or enter values in the text boxes, to specify color values. RGB values go from 0 to 255. CMYK values go from 0 to 100%. HSL values go from 0 to 360° (hue) and 0 to 100% (saturation and lightness).

D Spot Color. Select to set up a spot color. Type a color name in the text box. Spot colors print on separate plates when you make color separations.

E Tint Color. Select the color to apply to the current color.

F Tint value. Enter the percentage of tint to be applied.

G Swatchbook. Shows colors made from 0-100% mixtures of two CMYK colors. To select a color, click in the swatchbook; the color values appear in the text boxes.

H Select the two colors for the swatchbook. To add a third or fourth color, enter percentages in the C M Y K text boxes.

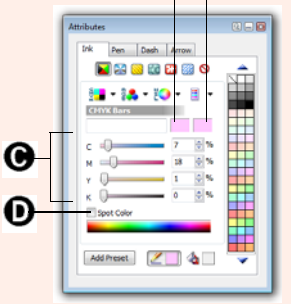
I Color wheel. Click in the wheel or drag the selector to pick a color, or enter values in the HSL text boxes.

J Lightness. Drag the slider or enter a number in the L text box to set the lightness for the entire color wheel.

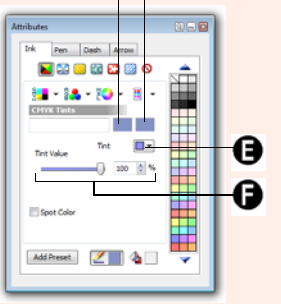
Gamut warning. When the current color can't be printed with CMYK inks, a warning symbol and color box appear. Click the color box to replace the current color with the closest color that is within the CMYK gamut.

Gamut warnings appear only in RGB and HSL systems.

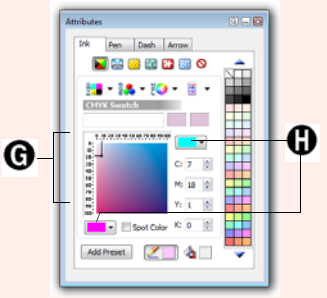
CMYK Bars



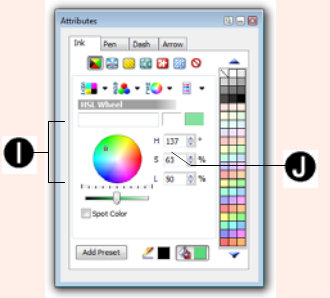
CMYK Tints



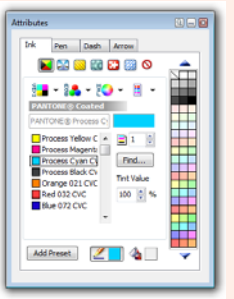
CMYK Swatch



HSL Wheel



Pantone reference system

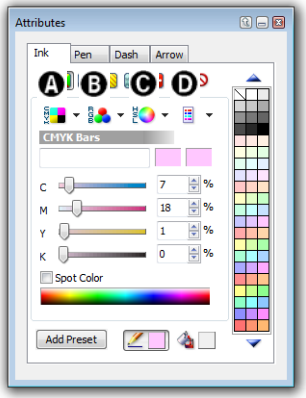


PANTONE

You can use commercial reference system colors for process and spot colors.

Choose PANTONE in the pop-up menu in the Color manager (see "PANTONE reference system" on page 14.8).

The PANTONE System includes hundreds of spot colors designed to be printed with special inks. You should select the correct color group for the paper stock on which the colors will be printed; e.g., the PANTONE CVC colors are calibrated for printing on coated paper stock. The PANTONE Pro-Sim colors are not spot colors. These colors are designed to be printed with standard process inks.



Click on an icon to access the controls and color systems.

A CMYK

B RGB / Grayscale

C HSL

D Pantone

Color systems

Use the drop-down menus to access to the various color controls. This will allow you to select a color matching system and select colors that are needed for commercial printing.

- **To define colors in Canvas:** Use CMYK, RGB, and Grayscale color systems.

Colors displayed on a monitor can only approximate the appearance of printed colors. Be sure to discuss color reproduction with your commercial printer and obtain accurate proofs for color projects.

CMYK colors

The CMYK color system is used in four-color process printing. Define colors as mixtures of Cyan (C), Magenta (M), Yellow (Y), and Black (K) printing inks; e.g., to create green, mix cyan and yellow.

The CMYK system is appropriate for illustrations that will be separated for commercial printing.

RGB colors

The RGB color system is used in computer monitors. Define colors as mixtures of Red (R), Green (G), and Blue (B) light; e.g., to create purple, mix red and blue.

The RGB system is appropriate for graphics displayed on a monitor, such as presentations and Web pages.

Grayscale colors

The Grayscale model lets you define shades of gray. Grayscale colors are neutral when used with RGB or CMYK colors. In RGB Color images, grayscale colors are equal amounts of red, green, and blue. In image channels, Grayscale colors are pure gray. In vector objects, text, or CMYK Color images, Grayscale colors are percentages of black. In color separations, Grayscale colors appear as percentages of black.

HSL

The HSL models let you define RGB colors using Hue (H), Saturation (S), and Lightness (L) values. This way of defining colors is familiar to artists. HSL models let you adjust saturation and lightness, without changing a basic hue, such as red or green.

✓ Tip

Avoid RGB colors in documents intended for commercial printing. Canvas will convert RGB colors to CMYK colors if you output color separations.

PANTONE reference system

When you choose a PANTONE reference system color set in the Color manager, you can search for and select colors by name.

A Color name. The selected color's name. Names of reference colors can't be changed.

B Color system. Choose the reference system you want to use in the pop-up menu.

C Color list. Click a color in the list to select it. Use the scroll bar to scroll the list.

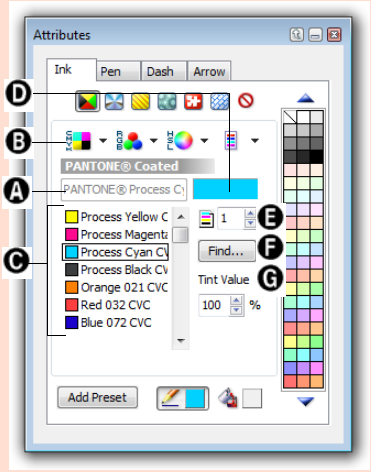
D Current color preview.

E Page. The page number of colors shown in the color list. Type a number to go to the page.

F Find. Click to select a color by name. In the Find dialog box, type the color name or number and click OK. Canvas selects the color (if found) in the color list.

G Tint Value. Not available for process colors. E nter a screen percentage to apply to the selected color. Use 100% for solid color and lower values for screens of the solid color.

Spot Color option. Available with the Pro-Sim and Process systems, this option lets you specify colors to use as spot colors in separations.



Specifying tints

Specify a tint color and amount in the CMYK or RGB system. Tinting with white screens the original color. The screen percentage is 100 minus the tint value; e.g., 80% white tint results in 20% of the original color.

For other tint colors, Canvas multiplies the tint values by the difference between the original and tint color values, and then adds the result to the original color values.

To create new color inks

✓ **Tip**
After creating a new ink, make sure you click the Add Preset button on the Attributes palette.

1 Choose a color system and model from the drop-down menu (see "Color systems" on page 14.7).

2 Use the Color manager controls to change the ink's color values.

3 Click the left preview box to restore the original ink.

- **To name the ink:** Type the name in the text box.
- **To define it as a spot color:** Select the Spot Color box.
- **To apply the ink to non-selected objects:** Drag it from the preview box to the objects.
- **To add the ink to the Presets palette:** Click the Add Preset button on the Attributes palette. The new ink is added to the appropri-

ate ink type; i.e., if you create a Pattern ink, the new ink is added to the Pattern type.

Creating blends of color inks

Select two color cells and create a blend of colors to add to the color inks tab of the Presets palette.

To blend colors

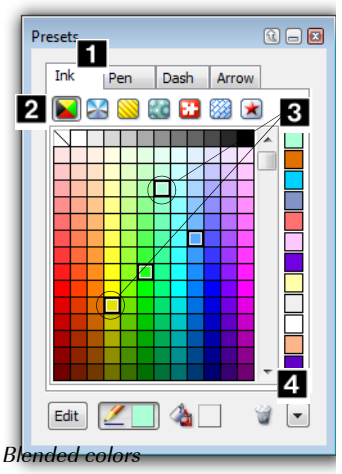
1 Select the Ink tab of the Presets palette.

2 Select color as the Ink type.

3 Click the ink cell that is to start the blend, then Ctrl-click the cell to end the blend.

4 Open the palette menu and choose Blend. A dialog box appears.

5 Enter the number of steps you want in the blend and then click OK. Canvas creates the blend and adds the new cells to the color inks at the end.

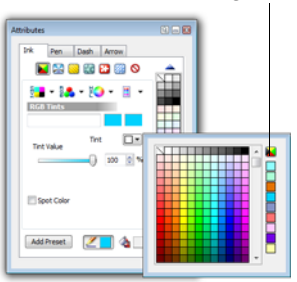


Blended colors

Accessing the Color Editor

In Canvas, dialog boxes and palettes that let you choose colors have a color icon that opens a pop-up color palette.

The Custom icon appears in pop-up color palettes in the following dialog boxes and palettes:



Click to open Color Editor dialog box

Attributes (Inks)	Color manager (CMYK Tints & RGB Tints only)
	Gradient manager
	Hatch manager (pen color pop-up only)
Attributes (Pens)	Neon manager
	Parallel manager
Layers	Layer Options dialog box
Color calibration	Gamut Warning dialog box
Image editing	Duotone Options dialog box
	New Channel dialog box
	Channel Options dialog box

	Create Image dialog box
Effects	Extrude palette

Click the color icon to open a palette that has the color inks that are currently available in the Presets palette. Click the Custom icon to open the Color Editor dialog box.

Color Editor dialog box

A Choose a color model in this pop-up menu.

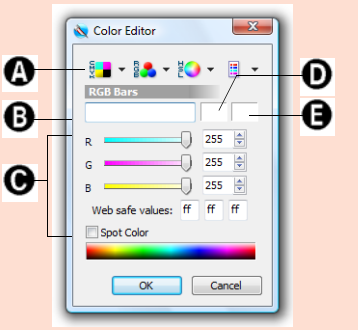
B Type a name for the color in this text box.

C Use the controls to specify a color. The available controls depend on the chosen option (**B**).

D Current selected color that appears in the color palette icon. Click to revert the settings in the dialog box to this color.

E Preview of the custom color that you are defining.

Spot Color. Select this option to define the custom color as a spot color.



✓ Important

If you plan to export a document to another application in EPS format and make spot color separations, be sure the spot color names match exactly in both applications. Any variation will cause problems.

To create a custom color with the Color Editor dialog box

1 Open the Color Editor dialog box. This dialog box is almost identical to the Color manager.

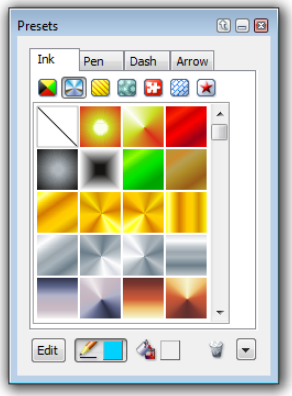
2 To use a different color model, click on the color model button and choose an option in the menu. Depending on the chosen option, the Color Editor shows a different set of controls (see “Color manager controls” on page 14.6).

3 Use the color controls to create a custom color.

4 To specify that you want the color you define to be a spot color, make sure you enter a name in the text box. Then select Spot Color.

5 When you have the color you want, click OK. The color appears in the color icon.

Working with Gradient inks



A gradient is a gradual blending of colors. A gradient ink can blend two or more colors in a variety of styles. Like other inks, gradient inks can be applied as fill inks or pen inks to vector and text objects.

The appearance of a gradient ink depends on several factors. Gradients appear smooth on monitors that display millions of colors, but can appear coarse and dithered on monitors that display only 256 colors. The more extreme the difference in colors, the coarser a gradient can appear. When a gradient has large color transitions, it appears smoother in an object that is large enough to show all the transitions.

- **To create and customize gradient inks:** Use the Gradient manager in the Attributes palette (see "Gradient manager," page 14.15).

Applying gradient inks

Canvas gives you the option of applying gradients directly from the Presets palette or using the Vector Gradient tool (see "To apply gradients with the Vector Gradient tool," page 14.12). When a gradient ink is applied via the Presets palette, the gradient effect is centered within the object. If you want non-centered effects, use the Vector Gradient tool.

Note: The Vector Gradient tool can be used on vector or text objects.

To apply gradient inks from the Presets palette

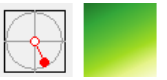
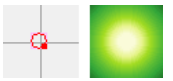
Make sure you select either the Pen or Fill ink icon on the Presets palette.

- If object is selected, click on the gradient ink cell.
- If object is not selected, click on the gradient ink cell and drag the ink to the object.

See "Applying preset inks," page 14.4, for complete steps about applying inks.

Gradient styles

Style	Appearance and edit controls	Edit box
Radial	Colors sweep in a circle around the center. To move the center point, drag the open dot. To set the starting angle, drag the solid dot or enter the angle (0 to 360°) in the text box.	

Style	Appearance and edit controls	Edit box
Directional	Linear gradient in which colors blend in the direction you specify. To set the gradient orientation, drag the solid dot, or enter an angle from 0 to 360° in the text box.	
Shape	Gradient conforms to basic object shapes. To move the gradient center, drag the rectangle. To resize the center area that contains the end color, drag the solid handle and resize the rectangle.	
Rectangular	Rectangular-shaped gradient. To move the gradient center, drag the rectangle. To resize the center area that contains the end color, drag the solid handle and resize the rectangle.	
Elliptical	Elliptical-shaped gradient. To move the gradient center, drag the oval. To resize the center area that contains the end color, drag the solid dot and resize the oval.	

To apply gradients with the Vector Gradient tool



The Vector Gradient tool applies the gradient ink that was used last or that has been defined as the default ink. The ink is applied either as a fill or pen ink according to the icon selected in the Presets palette.

There are two factors that affect the appearance of the object after using the Vector Gradient tool:

- style of the gradient ink
- manner of dragging the Vector Gradient tool

When using this tool, you're not limited to dragging directly inside the object(s). Drag inside or outside selected objects to achieve different effects; e.g., if you're applying a directional gradient, "stretch" the gradient by dragging across the object, starting and finishing outside the object. This technique places the start and end colors farther apart than if you drag a shorter distance within the object only.

1 Select the Vector Gradient tool.

2 Follow the prompt and choose an object if no object(s) is selected.

Note: If using the tool on a single object, the object does not have to be selected before using the tool. For multiple objects, select all the objects before selecting the Vector Gradient tool. The gradient flows across the selected objects as if they were one object.

✓ Tip

If the object already contains a gradient ink, the gradient ink will enter edit mode when you click the object with the Vector Gradient tool (see "To edit a gradient ink with the Vector Gradient tool" on page 14.14).

3 Then drag in the document to position the gradient. As you drag, a vector indicates the gradient position. The gradient appears on the selected objects.

Vector gradient styles	Description
Radial	A line that sets the center and angle of the gradient. The place where you begin to drag is the center point of the gradient. The vector extends from and rotates around the center point. The angle of the line establishes the angle of the gradient. The length of the line does not effect the gradient.
Directional	A line that sets the angle and length of the gradient. The place where you begin to drag has the start color of the gradient. The vector line extends from and rotates around the start point as you drag away from it. The angle of the line establishes the angle. The place where you stop dragging sets the end color of the gradient.
Shape	A rectangle that sets the size and location of the end color of the gradient. The rectangle contains the end color. Drag diagonally from one corner of the rectangle to another. The rectangle expands or contracts as you drag away from or toward the starting point. When you finish dragging, the gradient conforms to the object's shape.
Rectangular	A rectangle that sets the size and shape of the gradient. The rectangle contains the end color of the gradient. Drag diagonally from one corner of the rectangle to another. The rectangle expands or contracts as you drag away from or toward the starting point.
Elliptical	An ellipse that sets the size and shape of the gradient. The ellipse contains the end color of the gradient. Drag diagonally from one corner of the ellipse's bounding box to another. The ellipse expands or contracts as you drag away from or toward the starting point.

Modifying gradients

There are various ways of modifying gradient inks:

- **To change the direction or position of the gradient:** Use the Gradient manager in the Attributes palette, context menu, or Vector Gradient tool (see "Gradient manager," page 14.15).
- **To make color changes:** Use the Gradient manager in the Attributes palette or click on the individual nodes when the gradient ink is in edit mode.

To modify a gradient ink with the Gradient manager

1 Open the Gradient manager in the Attributes palette (see "Gradient manager," page 14.15).

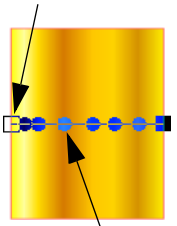
2 Select the object. The Gradient manager indicates the ink settings when the object is selected.

3 Click the Edit button in the Gradient manager to put the gradient ink into edit mode. You can now change the direction or

position of the gradient. Modifications appear in the object automatically.

- **To add the modified gradient ink to the Presets palette:** Click Add Preset and the ink is added to the gradient inks.

Gradient editing handles. Changes the direction of the gradient.



Color node. This control feature allows you to adjust the colors that are contained in the gradient.

To edit a gradient ink via a context menu

1 Select an object that contains either a gradient fill or pen ink.

2 Right-click to open the menu.

3 Select either Edit Frame Gradient or Edit Fill Gradient depending the use of the gradient ink. The gradient ink should enter edit mode.

4 Make the desired changes in position and direction.

5 Right-click on the individual color nodes to open a color palette. The Gradient manager is also available for color changes (see "Gradient manager," page 14.15).

6 Press Esc to exit edit mode.

To edit a gradient ink with the Vector Gradient tool

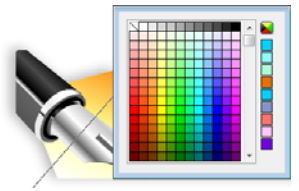
1 Select an object that contains either a gradient fill or pen ink.

2 Click on the Vector Gradient tool. The gradient ink is in edit mode.

3 Make the desired changes in position and direction.

4 Right-click on the individual color nodes to open a color palette. You can click on the Custom button to open the Color Editor (see "Color Editor dialog box," page 14.10). The Gradient manager is also available for color changes (see "Gradient manager," page 14.15).

5 Press Esc to exit edit mode.



To add color nodes to a gradient ink while in edit mode

Another way to change a gradient ink is to add color nodes to the gradient.

1 Put a gradient ink into edit mode.

2 In between the nodes that are already present, right-click to open a color palette.

3 Select a color or click on the Custom button to access the Color Editor (see "Color Editor dialog box," page 14.10). The new node appears with the selected color.

To remove color nodes from a gradient ink while in edit mode

Change the appearance of a gradient ink by removing color nodes.

1 Use one of the previous methods to put a gradient ink into edit mode.

2 Select a color node and drag it away from the gradient. The color is now removed from the gradient ink.

Creating gradient inks

Use the Gradient manager to create gradient inks and then add them to the Presets palette.

Gradient manager

To create a gradient ink, choose a gradient style, colors, and other options.

If you have an object selected, the ink is automatically applied to the object.

A The gradient color sequence appears in the bar. Each pointer below the bar represents a color and shows the color's relative position in the gradient. One pointer is always selected, and the pointer's color appears in the color icon (**D**).

B The pointers at the ends of the bar represent the gradient start and end colors. These pointers can't be moved or deleted, but you can change their colors.

C Click a pointer to select it; a selected pointer appears highlighted. To add an intermediate color, double-click in the bar and a new pointer appears that represents the color of the gradient where you clicked.

To adjust color spacing, drag an intermediate pointer. To delete a color, drag its pointer to either end of the bar.

D Choose a color for the selected pointer from the pop-up palette. To select a custom color, see "Accessing the Color Editor" on page 14.9.

Style. Choose a gradient style from the menu (see "Gradient styles," page 14.11).

E Edit box: Drag handles in the box to adjust settings such as gradient shape, angle and center.

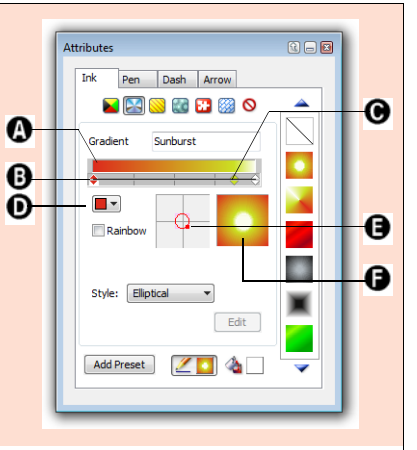
F Gradient preview. Shows the current gradient. The preview changes as you edit the gradient.

Angle. For Radial and Directional styles, enter the angle of the gradient axis, or drag the solid dot in the edit box to set the angle.

360º. When Radial is selected, select this checkbox to blend the gradient through 360 ° around the center. If this option isn't selected, the blend runs through 180° in both directions, creating a mirror image around the blend axis.

In addition, when 360° is selected, a button appears. Click the button to reverse the gradient direction.

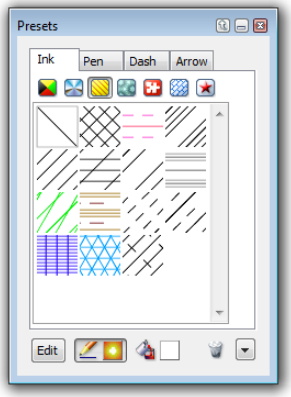
Rainbow. Select this to add all hues on the color wheel between the colors you set in the gradient. Click a direction button to select a clockwise or counterclockwise path around the HSL color wheel, which sets the sequence of hues.



Edit. Click this button to place a gradient into edit mode.

Add Preset. Click this button to add a new ink to the Presets palette.

Working with Hatch inks



Hatch inks are patterns made of groups of lines. These inks are often used in illustrations to distinguish different materials in cross sections, machine diagrams, and maps.

Specify the number of line groups as well as the angle, offset, and origin of each group. Assign a pen size, color, and dash to each line group, and select a fill ink for the background of the hatch ink.

Hatch inks

Click on the Hatch icon to open the hatch inks in the Presets palette. Use this palette to apply preset hatch inks to objects or store customized hatch inks that you create in the Hatch manager (see "Hatch manager," page 14.17).

To apply hatch inks

Make sure you select either the Pen or Fill ink icon on the Presets palette.

- If object is selected, click on the hatch ink cell.
- If object is not selected, click on the hatch ink cell and drag the ink to the object.

See "Applying preset inks," page 14.4, for complete steps about applying inks.

Tip

If you create a new ink in the Hatch manager, click the Add Preset button to add it to the Presets palette.

Creating hatch inks

Use the Hatch manager in the Attributes palette to create hatch inks and then add them to the Presets palette.

Hatch manager

When you create a hatch ink, set the number of line groups and other attributes.

A Preview. Click a line group in the preview box to select it. Tiny handles appear where the selected group meets the edge.

B Pen color. Choose a color for the selected line group in the palette. Choose a preset color or define a custom color; see "Accessing the Color Editor" on page 14.9.

C Fill ink. Select an ink to use as the hatch ink background.

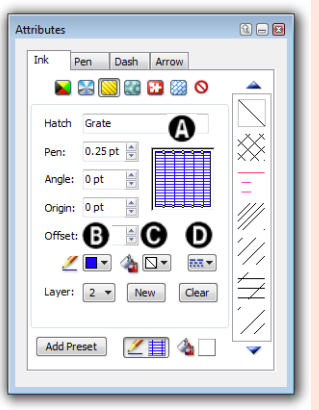
D Dash. Choose a dash pattern for the selected line group.

Layer. If the hatch ink has different layers, choose the layer from this menu.

New. Click this button to add a new layer. When a new layer is active, you can add another line group.

Clear. Click this button to delete the current layer.

See "To add or modify a line group," page 14.17 for information on setting Pen, Angle, Offset, and Origin.



Modifying hatch inks

When you want to change an existing hatch ink, select the hatch ink and click the Edit button to open the Hatch manager in the Attributes palette.

To change the background color

1 Click on the fill icon to open the pop-up Presets palette. This palette is identical to the Presets palette. Use any ink type that is currently available on the palette.

2 Select the new background ink.

3 Click the Add Preset button to add the modified ink to the hatch inks in the Presets palette.

To add or modify a line group

If you want to create a hatch ink that has crossing lines, the hatch ink will have to contain different layers. If the hatch ink contains only one line group, then one layers is sufficient.

- **To add a new line group:** Click the New button in the Hatch manager and then define the line.

- **To adjust a line group:** Select a layer from the Layer menu in the Hatch manager (if the hatch ink contains more than one line group), and then make any modifications in the Hatch manager. You can even add more line groups by adding layers.

A line group is selected when selection handles appear where the line group touches the Preview window. Once selected, the following line group attributes can be modified:

Attribute	Description
Line group color	Click on the pen icon to open the pop-up color palette. Choose a preset color or define a custom color in the Color Editor dialog box (see "Color Editor dialog box," page 14.10).
Pen	The width in points (1/72 inch) of each line in the selected line group. If a hatch ink overlaps the edges of an object, change the Pen value to make the width of the hatch lines smaller than the pen size of the object's stroke.
Angle	The angle in degrees of the selected line group relative to vertical. When you add a line group, the angle is initially 0 degrees.
Offset	The horizontal starting position of the line group, measured in points. Increasing this value moves the line group to the right.
Origin	The vertical starting position of the line group, measured in points from the top of the preview box. Increasing this value moves the line group downward.

Working with Symbol inks



Symbol inks are created from text, image, and vector objects. Use any of the Canvas drawing tools to create objects for a symbol ink. Apply pen and fill inks before bringing the objects into the Symbol manager to create a new symbol ink.

You can even combine text, image, and vector objects to create a unique symbol ink.

Click on the Symbol ink icon to open the symbol inks. Use the Presets palette to apply preset symbol inks to objects or store customized symbol inks that you create in the Symbol manager (see "Symbol manager," page 14.19).

To apply symbol inks

Make sure you select either the Pen or Fill ink icon on the Presets palette.

- If object is selected, click on the symbol ink cell.

✓ **Tip**
If you create a new ink in the Symbol manager, click the Add Preset button to add it to the Presets palette.

- If object is not selected, click on the symbol ink cell and drag the ink to the object.

See "Applying preset inks," page 14.4, for complete steps about applying inks.

To create symbol inks

1 Before creating a symbol ink, deselect any objects by pressing Esc.

2 Open the Symbol manager and click the Create button. A prompt appears when you move the cursor into the layout area.

3 Click on the object that you will use in the symbol ink.

Note: If you want to use more than one object or object type in the symbol ink, you must first group the objects.

4 Adjust the settings for the symbol ink in the Symbol manager (see "Spacing and position settings," page 14.19).

5 Click the Add Preset button to add it to the symbol inks in the Presets palette.

Symbol manager

Adjust the position and spacing of the objects and apply a backdrop ink.

A Preview. Displays the symbol ink. Any changes you make are reflected in the Preview area.

B Backdrop. Select an ink in the pop-up menu. Select any ink, including a color, gradient, hatch, texture, and symbol ink. The ink you select appears behind the objects in the symbol ink.

C Preview zoom. Click the left button to reduce or the right button to enlarge the preview.

Spacing and position settings

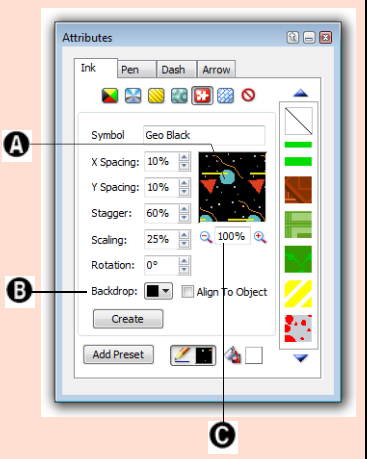
X Spacing and Y Spacing. Sets the distance between objects as a percentage of the size of the original objects; e.g., a spacing value of 100% makes the distance between the objects equal to their size. X is horizontal distance and Y is vertical distance.

Stagger. A positive value offsets the even-numbered rows of objects horizontally relative to the odd-numbered rows. To keep all objects aligned, set Stagger to zero. To align alternating rows of objects, enter a higher Stagger value. To create a pattern in which the objects are spread out and objects in alternating rows are aligned with the gaps in the rows above, set the X Spacing and Stagger values to 100 percent.

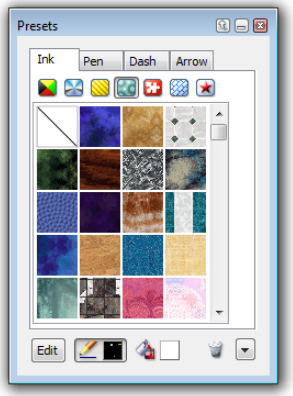
Scale. The percentage of the original object size for the symbol ink. A value of 100% maintains the original object size. To reduce the objects, enter a value smaller than 100%. To enlarge the objects, enter a value greater than 100%.

Rotation. The amount of rotation, specified in degrees, that Canvas applies to the original objects.

Align To Object. Turn on this option to keep a symbol ink in the same position if the object moves. Turn it off to let overlapping objects share a symbol ink without a gap.



Working with Texture inks



A texture ink consists of image objects. Canvas assembles a texture ink by repeating the image in rows and columns, as if it were a grid of rectangular cells. You can control the spacing and staggering of the images in a texture ink.

If you enter spacing values that spread the images apart, you create gaps between the image cells. You can also include a background ink that will show through the gaps.

Click on the Texture ink icon to open the texture inks. Use the Presets palette to apply preset texture inks to objects or store customized texture inks that you create in the Texture manager (see "Texture manager," page 14.21).

To apply texture inks

Make sure you select either the Pen or Fill ink icon on the Presets palette.

- If object is selected, click on the texture ink cell.
- If object is not selected, click on the texture ink cell and drag the ink to the object.

See "Applying preset inks," page 14.4, for complete steps about applying inks.

To create texture inks

You can create a texture ink from any image object.

1 Before creating a texture ink, deselect any objects by pressing Esc.

2 Open the Texture manager and click the Create button. A prompt appears when you move the cursor into the layout area.

3 Click on the image object that you will use in the texture ink.

Note: If you want to use text or vector objects in a texture ink, you must render them first. Also, if you want to use more than one image object, you must select them all or group them and then render them to create one image object.

4 Adjust the settings for the texture ink in the Texture manager (see "Spacing and position settings," page 14.21).

5 Click the Add Preset button to add it to the texture inks in the Presets palette.

Tip
If you create a new ink in the Symbol manager, click the Add Preset button to add it to the Presets palette.

Texture manager

When creating a texture ink, you can set the spacing and offset of image cells and choose a background ink.

A Preview. Displays the texture ink. Any changes you make are reflected in the Preview area.

B Backdrop. Choose a background ink in the pop-up palette. The ink appears only in gaps between the image cells.

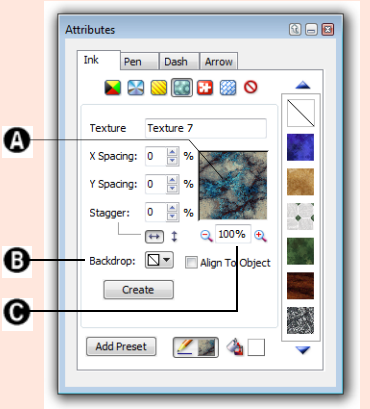
C Preview zoom. Click the left button to reduce or the right button to enlarge the preview.

Spacing and position settings

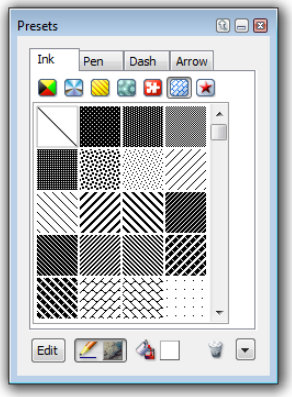
Spacing. Enter the amount of space between cells as a percentage of the cell size. X Spacing is the space between columns; Y Spacing is the space between the rows of cells.

Stagger. Select the horizontal button (left) or vertical button (right) and enter the distance (as a percentage of cell size) to shift the cells.

Align To Object. Turn on this option to keep a texture in the same position if the object moves. Turn it off to let overlapping objects share a texture without a gap.

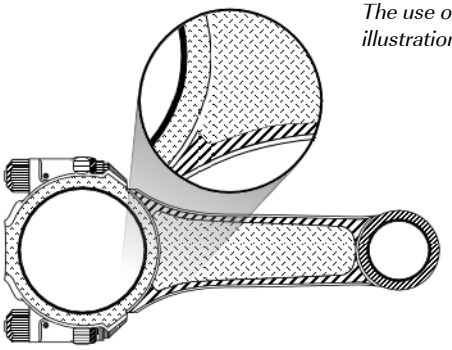


Working with Pattern inks



In technical illustrations, pattern inks are often used to provide a visual representation of the different components of a project. Canvas gives you the ablity to create your own personal set of patterns.

All pattern inks are bicolor 72 dpi bitmap representations with a fixed size of 8 x 8 pixels. Apply pattern inks to text, vector, and image objects.



The use of patterns in a technical illustration

Click on the Pattern ink icon to open the pattern inks. Use the Presets to apply preset pattern inks to objects or store customized pattern inks that you create in the Pattern manager (see "Pattern manager," page 14.22).

✓ **Tip**

If you create a new ink in the Pattern manager, click the Add Preset button to add it to the Presets palette.

To apply pattern inks

Make sure you select either the Pen or Fill ink icon on the Presets palette.

- If object is selected, click on the pattern ink cell.
- If object is not selected, click on the pattern ink cell and drag the ink to the object.

See "Applying preset inks," page 14.4, for complete steps about applying inks.

To create or pattern inks

All pattern inks are created or modified in the Pattern manager. You can access the Pattern manager via the Attributes palette when you click on the pattern ink icon.

Pattern manager

A Pencil tool. Color the cells within the Edit box.

B Move tool. Click within the Edit box to see other parts of the pattern.

C Switch Background and Foreground colors Click this button to switch the colors.

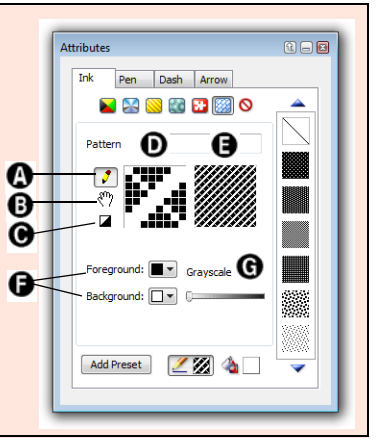
D Edit box. Create and modify patterns in this box. Changes appear in the Preview box.

E Preview box. Patterns are displayed in this box while being modified.

F Background and Foreground color. Choose foreground and background colors from a color palette or create a custom color (see "Color Editor dialog box," page 14.10).

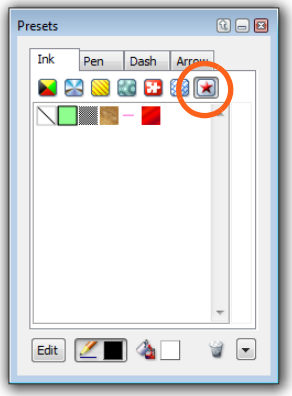
G Grayscale slider. Increase grayscale to use more foreground or decrease it to use more background.

Add Preset. Click this button to add the new ink to the Presets palette.



Creating Favorite inks

Favorites inks allows you to easily build and retain a set of often used inks, whether they are color, gradient, texture, hatch, pattern, or symbol. You can create and save multiple palettes. Also, you can share saved palettes with friends and co-workers for project consistency.



To add an ink to the Favorites inks

1 If you wish to place an ink in the Favorite inks (e.g., a Pattern ink), click on the Pattern ink icon to view the Pattern inks palette.

2 Select the Pattern ink and then drag the ink cell to the Favorite inks icon. The Pattern ink is now available on the Favorite inks palette. Once placed inside the Favorite inks, you can then use this ink at any time. Once you have placed several inks in the Favorite inks, you should save the palette for future use.

- **To delete a Favorite ink:** Select the ink cell and drag it to the trash can.

To save a Favorite inks palette

1 Click on the Favorite inks icon.

2 Open the Presets palette menu.

3 Select Save Favorites Inks.

4 Enter a file name and click Save.

Loading, appending, and clearing inks

You can load, and append inks for one ink type at a time in the Presets palette.

Load Loads inks from a palette file, replacing the ink type currently open in the Presets palette. In the dialog box, select a file and click Open.

Append Adds inks from a palette file to the ink type currently open in the Presets palette. In the dialog box, select a palette file and click Open.

Clear Removes the inks (except "no ink") from the current palette.

Applying inks to objects

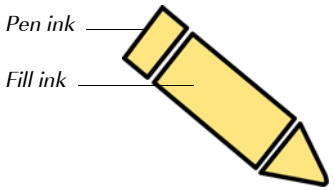
Tip
If an object has neither a pen ink nor a fill ink, the object is not visible.

You can apply inks to two areas of vector objects and text: *Fill inks* cover the interior of objects and text characters. *Pen inks* cover the strokes of objects and text characters. Objects can have different inks for a fill ink and a pen ink; e.g., a gradient fill and a pattern pen ink. In addition, you can apply inks to the backgrounds, outlines, and frame of text objects .

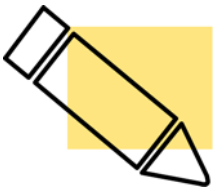
Remember that you don't apply inks to paint objects. Instead, use painting tools to paint in a paint object and give it color (see "Painting & image-editing," page 22.1).

Applying fill inks to open and closed paths

Whether a vector object path is open or closed affects the appearance of its fill ink. In a closed path, the ink completely fills the object's interior; in an open path, the ink fills inside the path as if the path were closed by a straight segment between its endpoints.



This object has a pen ink and a fill ink; both are basic color inks.



This object has a pen ink but no fill ink, so the rectangle in back is visible through it.



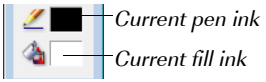
This path has a pen ink and no fill ink.



The path above has a pen ink and a fill ink.

Default and current inks

By default, Canvas applies white fill ink, black pen ink, and a 1-point stroke to new vector objects. For new text objects, Canvas applies black fill ink, no pen ink, and no stroke to the text characters.



The *current inks* are the inks that Canvas applies to new vector objects you draw. The squares in the pen ink and fill ink icons in the Toolbox display the current inks. When you apply inks to existing objects, the current inks do not change.

- **To change the current pen or fill ink:** Make sure no objects are selected in the document, then press the pen ink or fill ink icon to select a current ink from one of the Inks palette.

Using the Color Dropper



Use the Color Dropper tool to select and apply colors. The Color Dropper tool is located in the Objects tool palette (see "Tool palettes," page 9.6). The Color Dropper can select colors from any object in a document.

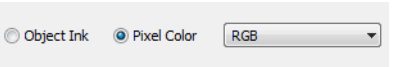
✓ Tip
This tool helps keep color consistency within a document and is useful for photo retouching. It can also help identify colors from documents imported into Canvas.

Colors you select with the Color Dropper become the current foreground or background colors for painting and the current pen inks and fill inks for new vector objects.

The Color Dropper has two modes, Object Ink and Pixel Color (see "Color Dropper modes" on page 14.25).

Color Dropper modes

Select the Color Dropper tool to view the settings in the Properties bar. Select a mode. The mode remains set unless you change the setting in the Properties bar.



Object Ink

In vector or text objects, the Color Dropper selects object inks — color, gradient, symbol, texture, pattern, and hatch inks. It does not take into account transfer modes or transparency effects.

If you click an object's stroke, you select its pen ink; if you click an object's interior, you select its fill ink. In the case of paint objects, which do not have inks, the color you click is selected as a color ink.

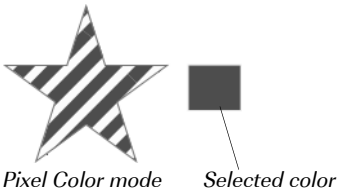


For example, if you click a gradient ink with the Color Dropper, it selects the gradient ink.

In paint objects, paint colors are selected, not colors you see due to transfer modes, channel masks, or other transparency effects; i.e., if you click a black area that is 50% transparent, you select solid black.

Pixel Color

This mode works the same whether you click a paint, vector, or text object. The color of the pixel is selected. The Color manager in the Attributes palette indicates the color values.



Color mode Select RGB, CMYK, or Grayscale. The Color Dropper converts any color you click to the selected color system. For best performance, choose the color system that matches the colors you are sampling; however, you may want to select a color system that differs from an image. You might do this to see the effect of a color conversion, such as RGB to CMYK for printing, for example.

To select an ink (Object Ink mode)

1 Select the Color Dropper tool.

2 Select Object Ink for the mode in the Properties bar.

3 Do one of the following:

- **To set the fill ink:** Click an ink to make it the current fill ink. You can click a pen ink or a fill ink; in either case, the ink you click becomes the current fill ink.

- **To set the pen ink:** Right-click an ink to make it the current pen ink. You can click a pen ink or a fill ink; in either case, the ink you click becomes the current pen ink.

To select a color (Pixel Color mode)

1 Select the Color Dropper tool.

2 Select Pixel Color for the mode in the Properties bar.

3 Click a color to set the current fill ink color (vector and text objects) and background color (image objects). Right-click to set the current pen ink color (vector and text objects) and foreground color (image objects).

To select colors outside Canvas

With the Color Dropper selected, drag from the Canvas window to anywhere on screen. As long as you keep the mouse button pressed, the Color Dropper remains active; the ink icons in the Toolbox show you the colors the tool can select. Release the mouse button to select the color under the tip of the pointer.

The color you select becomes the current fill ink and background color. You can't use this method to select the pen color.

✓ Tip
While editing an image with a painting tool, you can quickly switch to the Color Dropper. Press Alt to display the Color Dropper, and click to select a foreground color for painting.

To apply colors to vector and text objects

Apply current inks to vector objects and text with the Color Dropper. This technique makes it easy to quickly transfer inks from one object to another.

Ctrl-click a vector or text object to apply the current fill ink to the object. Ctrl-right-click to apply the current pen ink to the object.

✓ Tip
The Color Dropper mode does not affect the application of colors. Also, you cannot apply colors to paint objects using the Color Dropper tool.

Getting inks from vector and text objects

Canvas lets you add inks from vector objects and text objects to the Presets palette. If a text object contains both a text fill and a background fill, only the text fill will be added to the palette. You can also add the inks of multiple selected objects; however, the inks from group objects and macro objects cannot be added.

To add inks from objects to the Presets palette

1 Select either the pen ink or fill ink icon on the Presets palette, depending on the type of ink you want to add

2 Drag the vector or text object onto the preset inks area of the appropriate ink type in the Presets palette; i.e., gradient inks only apply to the gradient ink type, hatch inks to the hatch ink type, etc.

Replacing ink attributes

Canvas has a quick way to change all instances of a selected ink in a single document: the Replace Ink Attributes command. This function can be applied to pen and fill inks for both vector and text objects.

To replace an ink

1 Choose Edit > Replace Ink Attributes. The Replace Ink dialog box opens with the document's currently used inks located at the top.

2 Select the ink that you want to replace.

3 Click on the Bucket icon and the Presets palette pops out with the six ink types available (see "Applying preset inks" on page 14.4).

4 Select a replacement ink from one of the ink types. You can even specify "no ink".

5 Repeat this procedure to replace any other inks.

6 Click OK to close the dialog box.

1 Select an ink at the top of the Replace Ink dialog box.

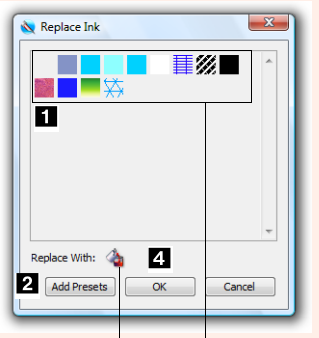
Note: A slash line indicates "no ink".

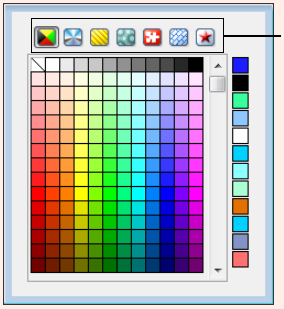
2 Click the Bucket icon to open the Presets palette.

3 Choose the replacement ink. You can use any ink type or even "no ink".

4 Click OK.

Add Presets. Click this button to add a used ink to the Presets palette.





Bucket icon *Inks used in document*

CHAPTER 15

STROKES: OUTLINE EFFECTS

When you create objects with drawing tools, Canvas applies a stroke to the objects according to attributes set in the Presets palette. A *stroke* is a line centered on the path of vector objects and the outlines of type. You can shape a stroke with standard and calligraphic pens, parallel lines, even neon tubes. You can also add dashes and arrowheads to strokes.

This chapter explains basic stroke settings, how to customize strokes, and how to apply strokes to objects and text.

Types of strokes

Canvas has three basic types of strokes plus arrows and dashes, which you can use to create unlimited variations. The following types of strokes appear on Pens tab of the Presets palette.

Pen

Standard Strokes made of a single line. You can specify the width, type of line joins, and shape of end caps.



Parallel

Calligraphic Strokes that have a weight, width, and angle.

Parallel Strokes made of two or more lines. You can specify width, dashes, colors, and spacing.

Neon

Neon Strokes shaded like glowing tubes. You can specify width, colors, tube shape, line joins, and end caps.

Arrows and dashes can be applied to strokes for additional effects. Click on the Dash tab or Arrows tab in the Presets palette to apply these to a stroke.



Arrow

Arrow You can use preset or custom arrowheads that appear at the endpoints of each path segment.

Dash

Dash You can apply preset or custom dash sequences that divide solid strokes into solid and blank segments.

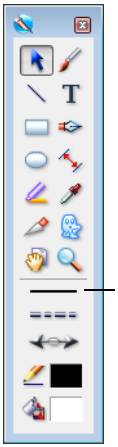
How inks affect strokes

You define the colors that apply to strokes separately from the pen stroke settings. The pen ink (specified in the Presets palette) and the pen stroke settings together produce the appearance of an object's outline. The pen ink is the color (or pattern) that "paints" the

object's stroke. Therefore, the object must have a visible pen ink for the stroke to be visible. Conversely, the object must have a stroke for the pen ink to be visible.

Some inks can make strokes invisible. If the pen ink is set to "no ink," the stroke won't be visible. Also, if the pen ink is set to white or a color that matches the background, the stroke could disappear against the background.

Current stroke



The Strokes icon in the Toolbox shows a sample of the *current stroke*, the stroke that Canvas applies to new vector objects you create. For example, if the current pen stroke is 3 points wide, new objects you draw will have a 3-pt pen stroke. Canvas does not apply the current stroke to text (see "Applying strokes to text," page 15.2).

To change the current stroke, deselect all objects and apply the stroke you want; the stroke icon in the Toolbox shows the new current stroke. If you select an object and change its stroke, however, the current stroke for new objects does not change.

When you first install Canvas, the current stroke defaults to a 1-pt pen stroke without dashes or arrowheads.

Applying strokes to text

You can apply strokes to text the same as to vector objects, in most cases. For information about selecting text objects and text characters, see "Formatting text," page 29.1 and "Formatting text with the Properties bar," page 29.5).

When you first type or import text into a document, Canvas applies a black 1-point pen stroke to the text, but does not assign a fill ink. You can apply pen, parallel, and neon strokes to text. You can also apply dashes to text that has a pen or neon stroke. If you select a text object, Canvas applies a stroke to all the text it contains. If you select specific characters within a text object, Canvas applies the stroke to those characters only.



Calligraphic pen stroke



Neon stroke

Note: The appearance of a parallel stroke applied to text might not appear as you expect, especially on characters with hollow centers (such as "O" and "P") and characters with tight corners or paths that meet or cross (including "G" and "X").

Removing a neon or parallel stroke from text (by choosing "no stroke") does not remove the stroke entirely. Instead, the stroke reverts to a black 1-pt pen stroke.

Applying preset strokes

Using presets can help you save time and ensure graphic consistency. Presets for standard, callagraphic, parallel, and neon strokes are displayed when you select the respective stroke type icon in the Presets palette. Also select the Dash or Arrow tab in the Presets palette to view the presets for these attributes.

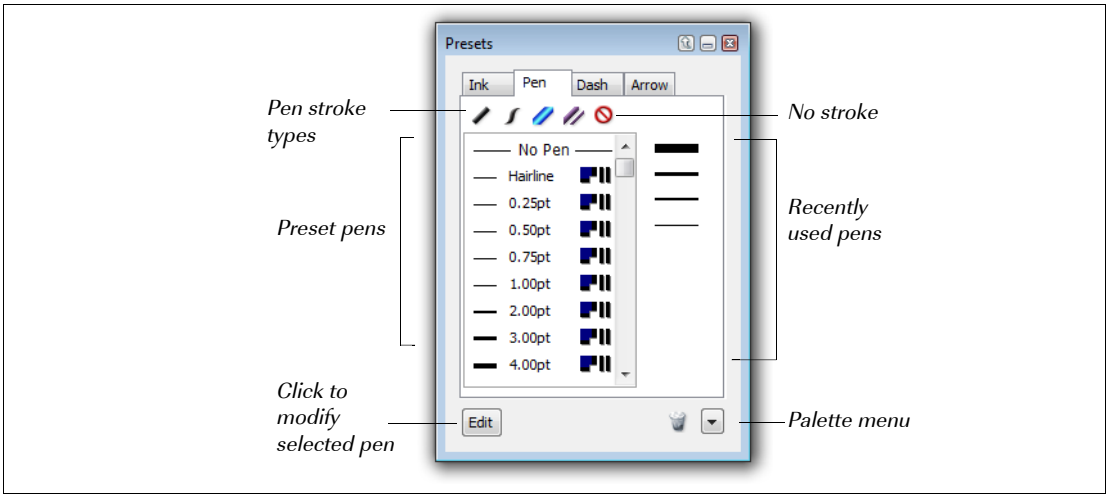
Using the Presets palette

The Presets palette contains preset strokes and attributes that you can apply to objects and the current stroke.

Use the Presets palette to apply strokes to objects and save strokes in files that you can later load into the palette.

- **To open the Presets palette:** Click on the Strokes icon in the Toolbox to pop open the palette. Drag it away to see the entire palette. You can also choose Window > Palettes > Presets.

Four icons are located at the top of the Pens tab, which you click to access the available stroke types: standard, calligraphic, neon, and parallel. The circular icon with a diagonal line represents "no stroke". For dashes and arrows, click on their respective tabs in the palette.



Deleting strokes and stroke attributes

You can remove default and custom presets from the Presets palette. When you delete a preset, Canvas permanently removes it from the palette, unless you save it to disk and load it again; see "Saving and loading strokes settings," page 15.4

- **To remove a preset from the Presets palette:** Select the stroke type or stroke attribute and drag it to the trash can icon. The trash can appears only when the Presets palette is floating or docked on the Docking bar.

To remove all preset strokes or stroke attributes

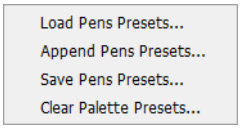
1 Select the stroke type or stroke attribute in the Presets palette.

2 Open the palette menu and choose Clear Palette Strokes.

Note: If you delete all arrowheads from the palette, dimension objects will not have arrows.

Saving and loading strokes settings

You can save preset strokes, arrows, and dashes in files on disk, and load the presets into the Presets palette. You can use these strokes files to customize the Presets palette for particular projects or types of documents, and to exchange custom settings with other Canvas users.



Commands for saving and loading strokes files are in the Presets palette menu. The menu icon appears only when the Presets palette is separated from the Toolbox.

To save strokes in a file

Use the following procedure to save the presets from one stroke type or stroke attribute in the Presets palette to a file on disk.

1 Open the Presets palette

2 Click the Pens tab and select the stroke type. Or click on the Arrow or Dash tab for a stroke attribute.

3 Open the palette menu and select Save ... Strokes. The menu command will reflect the selected stroke type or stroke attribute. A directory dialog box opens.

4 Enter a name for the file, select a location on a disk, and click Save.

To load strokes from a file

Use the following procedure to load stroke types or stroke attributes that are stored in a file. When you load a file, you can either replace the strokes that are presently in the Presets palette or simply append the stroke types or stroke attributes to the current ones.

1 Open the Presets palette

2 Click the Pens tab and select the stroke type. Or click on the Arrow or Dash tab for a stroke attribute.

3 Open the palette menu and select Load ... Strokes. The menu command will reflect the selected stroke type or stroke attribute. A directory dialog box opens.

4 Navigate to the file and click Open.

To apply preset strokes to objects

Use the following general procedure to apply a preset stroke to one or more objects.

1 Select the objects for which you want to change strokes.

2 Press the Strokes icon in the Toolbox to open the Presets palette. The Pens tab will be selected automatically.

3 Select the stroke type (standard, calligraphic, neon, or parallel).

4 Choose a stroke in the preset strokes list. If necessary, use the scroll bar or window resize button to view additional strokes. Canvas applies the stroke you choose to selected objects.

To make a preset stroke the current stroke

Select a preset stroke as the current stroke to apply to new objects you create.

1 Deselect all objects in the current document. To deselect all objects, press Esc a few times.

2 Press the Strokes icon in the Toolbox to open the Presets palette. The Pens tab will be selected automatically.

3 Select the stroke type (standard, calligraphic, neon, or parallel).

4 Choose a stroke in the preset strokes list. Use the scroll bar to view additional strokes. The Strokes icon in the Toolbox shows the current stroke.

Using standard pen strokes

The most common type of stroke is a standard pen stroke, a solid line of uniform width. This type of stroke is used for many situations, such as technical illustrations, flowcharts, callout lines, etc.

By default, the width of pen strokes is measured in points (one point is 1/72 inch). Pen stroke widths from 1 to 16 points appear in the Pens tab of the Presets palette.

To change the current pen stroke width

1 Deselect all objects.

2 Open the Presets palette and click on the Pens tab.

3 Select standard as the stroke type and choose a new pen stroke width from the presets list.

- **To change the pen stroke width of specific objects:** Select one or more objects, then select a new pen stroke from the presets list for standard strokes.

To change the ink of a pen stroke

The color of a pen stroke comes from the object's pen ink. The pen ink can any of the available ink types; i.e., gradient, pattern, symbol, color, hatch, or texture.

1 Select one or more objects whose pen ink you want to change.

2 Press the Pen Ink icon in the Toolbox. The Presets palette pops open with the Inks tab selected. Drag this palette away from the Toolbox to keep the Presets palette open as you work.

3 Select an ink type on the Inks tab; e.g., color, gradient, hatch, symbol, pattern, or texture (see "Inks: colors & patterns" on page 14.1).

'Invisible' inks

A pen ink is one or more colors that Canvas uses to apply color to pen strokes. The pen ink can be set to "no ink," or to a color that blends into the background, which renders a pen stroke invisible.

In some situations, you might want to set an object's pen ink to "no ink," rather than remove the object's stroke. This can be useful to temporarily hide the stroke without removing the dash, arrow, and other stroke settings, for example.

To set an object's pen ink to "no ink"

This procedure removes the pen ink and makes the stroke invisible.

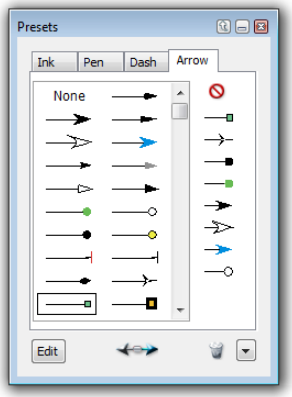
1 Select the object and press the Pen Ink icon to open the Presets palette with the Inks tab selected.

2 Click on the "no ink" icon to the right of the ink types. It is a circle crossed by a diagonal line.



"No ink" setting

Adding preset arrows to pen strokes



You can add arrowheads to pen, parallel, and neon strokes. You can apply strokes with arrows to lines and open paths, such as those created with the Curve tool. Arrowheads can appear at one or both endpoints of a path.

You can also create custom arrowheads that you can add to the preset arrowheads (see "Creating custom arrowheads" on page 15.17).

To add arrows to strokes

Use the following procedure to apply arrows to objects or the current stroke:

1 Depending on how you want arrows to apply, do one of the following:

- **To add an arrow to the current stroke:** Deselect all objects.

- **To add arrows to specific objects' strokes:** Select the objects.

2 Press the Arrow icons in the Toolbox to open the popup Presets palette showing the different arrowheads available.

The Arrow icons in the Toolbox let you choose between starting, ending, and double-sided arrowheads.

- **To select a starting or ending arrowhead:** Click either side of the icon. The left or right arrow icon will be highlighted.

- **To select a double-sided arrowhead:** Click the round button in the middle. Both the left and right arrow icons are highlighted. The arrows in the scroll list preview the selected arrowhead.


Starting arrow


Ending arrow


Double-sided

To apply different arrowheads to each end of a stroke

1 Select object to which you want to apply arrowheads.

2 Apply the first arrowhead by clicking on either the left or right Arrow icon in the Toolbox and selecting an arrowhead.

3 Then, Shift-click the other Arrow icon and select a different arrowhead. Now, both ends of the stroke should have different arrows.

Adding dashes to strokes

You can add a variety of preset dash sequences to pen and neon strokes. You can apply a stroke with dashes to most objects, including lines, open and closed Bézier curves, polygons, rectangles, ovals, and stars.

Parallel line strokes can also include dashes. However, you select dashes for parallel lines when you customize the stroke in the Parallel stroke manager in the Attributes palette (see "Customizing parallel line strokes" on page 15.15).

To add dashes to pen and neon strokes

1 Depending on how you want dashes to apply, do one of the following:

- To apply dashes to the current stroke, deselect all objects.

- To apply dashes to an object that has a pen or neon stroke, select the object.

2 Press the Strokes icon in the Toolbox to open the Presets palette. Select the Dash tab.

3 Choose the dash sequence that you want in the list of presets.

Removing arrows, dashes, and strokes

You can remove a selected object's stroke, or set the current stroke to "no stroke," so you can create objects that have no stroke. An object that has no stroke has no visible outline. Objects drawn with the Line tool become invisible without a stroke; other objects are still visible if they have a visible fill ink.

You can also remove dashes and arrows from a stroke. Because arrows and dashes are attributes of strokes, you can remove them without removing the entire stroke.

Removing arrows, dashes, and strokes involves the same procedure as changing from one preset stroke to another.

To remove arrows or dashes

You can use the following procedure to remove arrows from pen, parallel, and neon strokes, and to remove dashes from pen and neon strokes. For details about removing dashes from parallel strokes, see "Customizing parallel line strokes" on page 15.15.

1 Depending on how you want to remove arrows or dashes, do one of the following:

- **To remove stroke attributes from an object:** Select the object.
- **To remove stroke attributes from the current stroke:** Deselect all objects.

2 Press the Strokes icon in the Toolbox to open the Presets palette. Choose the Dash or Arrow tab, depending on the attribute you want to remove.

3 Choose "no arrow" on the Arrow tab to remove arrows from a stroke. Choose "no dash" on the Dash tab to remove dashes.

To use "no stroke" settings

Remove strokes entirely from objects, or use "no stroke" as the current setting for new objects.

1 Depending on how you want to remove strokes, do one of the following:

- **To remove the stroke from an object:** Select the object.
- **To make "no stroke" the current setting:** Deselect all objects.

2 Press the Strokes icon in the Toolbox and choose "no stroke" on the Pens tab.

Applying tapered ends to standard and neon strokes

This option can be applied to standard pen strokes and neon strokes; however, it is best viewed when a pen setting is larger than 3.00 pt.

To apply tapered ends to strokes



Neon stroke with tapered corners

1 Depending on how you want to apply tapered ends, do one of the following:

- **To add tapered ends to an object:** Select the object.
- **To add tapered ends to the current stroke:** Deselect all objects.

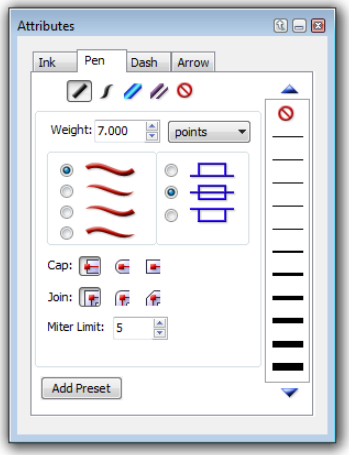
2 Click on the Strokes icon in the Toolbox to open the Presets palette.

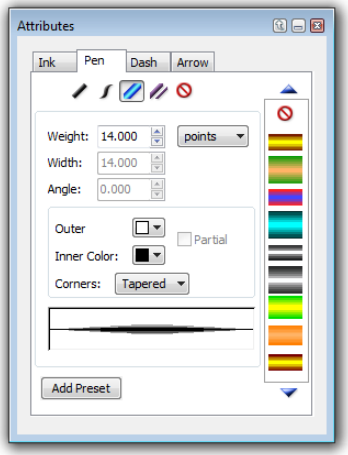
3 Click on the Pen tab and select either standard pen stroke or neon stroke.

4 Select a preset pen stroke and then click the Edit button to open the respective manager in the Attributes palette.

Use the Tapered End controls in the Standard Pen Stroke manager.

Select from no taper, end-to-end taper, left taper, and right taper.





In the Neon Stroke manager, open the Corners menu and select Tapered. Both ends of the stroke will be tapered.

Customizing strokes

Each stroke type and stroke attribute (arrows and dashes) in the Presets palette has its respective manager in the Attributes palette.

Use the managers to

- display the strokes settings of selected objects
- create custom pen, parallel, calligraphic, and neon strokes
- create custom arrowheads and dash sequences
- apply custom settings to objects or the current stroke
- store custom strokes as presets in the palette

Using the Attributes palette

You can open the Attributes palette by clicking the Stroke icon in the Toolbox to open the Preset palette. Then click the Edit button. You can also choose Window > Palettes > Attributes.

Select the stroke type or stroke attribute that you want to define. Its respective manager comes to the front.

- **To customize an object's stroke:** Select the object and open the Attributes palette. The appropriate manager comes to the front.

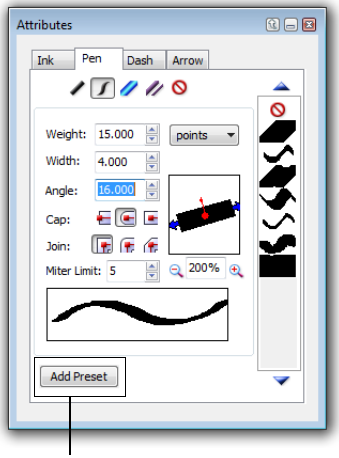
- **To use a preset stroke as the basis for a custom setting:** Apply the preset to an object and then select the object. Open the Attributes palette. The stroke settings are indicated in the appropri-

ate manager. You can also simply choose the preset in the scroll list; however, this also changes the current stroke or the stroke of any selected objects.

If you adjust the settings in a manager, and then select an object, the settings will change to reflect the object's settings. If you don't want to lose custom settings when no objects are selected, add them to the Presets palette (see "To add custom settings to the Presets palette," page 15.12.

To add custom settings to the Presets palette

You can add custom strokes, arrows, and dashes to the Presets palette. When you add custom items, they become presets that you can use the same as default preset items. You can apply a customized preset to objects or make it the current stroke.



Click this button to add a stroke or stroke attribute to the Presets palette.

- **To add custom settings from the Attributes palette:** Click the Add Preset button. The new stroke or stroke attribute is added to the appropriate stroke type or tab in the Presets palette.

- **To add settings from an object to the palette:** Select the object. The respective stroke type manager or stroke attribute tab opens in the Attributes palette. Click the Add Preset button.

When you end a Canvas session, the program stores each stroke type's or stroke attribute's presets with the program. Because Canvas stores the preset strokes and inks, the same presets can always be available, whether you work with new documents, documents you created, or documents created by another Canvas user.

If you create a custom stroke and want to apply it to more than one object, and especially if you want to use it in a later work session, you should add the custom settings to the Presets palette.

Customizing standard & calligraphic pen strokes

If you want to create custom standard pen or calligraphic strokes, use the respective manager in the Attributes palette.

Standard pen strokes have a uniform weight, specified offset, and may have tapered ends. Calligraphic pen strokes have a separate width, weight, and angle setting. For both stroke types, you can define the line joins (bevel, miter, or round) and end caps (flat, round, or square).

For basic information about setting pen size, see "Using standard pen strokes" on page 15.6.

✓ Tip

You can choose another unit of measurement instead of points as the pen size unit using the unit menu in the Attributes palette.

To create a standard pen

1 Click on the Pens tab of the Attributes palette.

2 Select the standard pen stroke type to access its respective manager.

3 Use the standard stroke manager controls to define the new stroke.

4 Click the Add Preset button to add this new stroke to the Presets palette.

Standard pen stroke controls

Use these options to define standard strokes.

A Weight. Enter the weight of the pen stroke. Strokes are normally defined in points but you can select another unit of measurement from the menu.

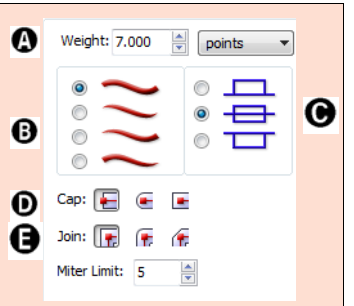
B Tapered End. Select either no taper, end-to-end taper, left taper, or right taper.

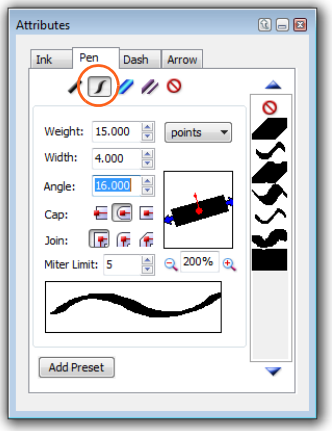
C Offset. Select above path, center of path, or below path.

D Cap. Select an endcap: flat, round, or square.

E Join. Select a line join style: miter, round, or bevel.

Miter Limit. This setting is measured in degrees. The miter limit indicates which corners are too tight to miter so Canvas will bevel them instead.





To create a calligraphic pen

The calligraphic manager lets you create a stroke with a custom weight, width, and angle.

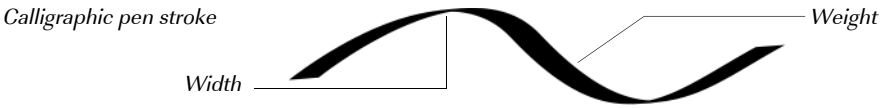
1 Enter a value in the Weight field or drag the blue arrows in the edit box. The Weight refers to the thickness of the stroke.

2 Enter a value in the Width field or drag the red arrow in the edit box. The Width refers to the thinnest part of the stroke. The Width should differ from the Weight.

3 Enter a value (in degrees) in the Angle field. You can also adjust the angle by moving the blue arrows or red arrows in a circular motion. Typically, the angle is set to 45 degrees.

4 Select endcaps and line joins for the pen stroke. For an explanation of the various cap and join choices, see “Standard pen stroke controls,” page 15.13.

5 Click Add Preset when you are completed.



Choosing line joins and end caps

For standard pen strokes and calligraphic strokes, you can specify the type of line joins and end caps. Line joins determine the appearance of two path segments that meet at a corner. End caps specify the shape of the endpoints of an open path.

Line joins

Canvas has three types of line joins: miter, round, and bevel. For preset pen strokes, Canvas indicates the type of line join in the respective manager in the Attributes palette.

Miter Joins path segments with sharp corners that extend to a single point. When you choose miter joins, the Miter Limit field is enabled. Enter the miter limit in degrees (5, 10, 30, 60, or 90 degrees).

The miter limit setting tells Canvas which corners are too tight to miter; Canvas bevels these corners instead; i.e., if the miter limit is set to 10°, and two path segments join at an angle of 9°, Canvas bevels the corner rather than creating a miter join. The miter limit lets you prevent long, spiked corners that might result as a combination of a wide pen size and a small angle.

Round Smooths corners, so the joint is rounded instead of pointed or flat.

Bevel Squares off path segment corners, so that the joint appears flat rather than rounded or pointed.



Miter join, miter limit = 10°



Bevel join



Round join



Miter join, miter limit = 20°

End caps

Canvas has three types of end caps. For preset pen strokes, Canvas indicates the type of end cap in the respective manager in the Attributes palette..



Flush with endpoint

Flat The end of the stroke is flush and square with the end of an open path or dash. By default, end caps use this setting.



Rounded at endpoint

Round A semi-circular cap extends half the pen width beyond the endpoint of an open path or dash.



Square at endpoint

Square The stroke tip is square, similar to the Flat option, but extends half the line width beyond the endpoint, like the Round option.

Customizing parallel line strokes

You can create custom parallel line strokes using the Parallel manager in the Attributes palette. Specify the number of lines, color, dash pattern, and pen size of each line, and line spacing.

To create custom parallel line strokes

1 Open the Attributes palette, if necessary.

2 Click the Pens tab.

3 Select the Parallel line as the stroke type. The Parallel manager comes to the front.

Parallel manager

Use these controls to create parallel line pen strokes.

A Total lines. Enter the number of parallel lines for the stroke. The minimum and maximum are 2 and 12, respectively.

B Orientation. Specify the placement of parallel lines relative to the object's path. Choose Center, Outside, or Inside.

C Line Attributes. Use these controls to define the appearance of the stroke.

Pen. Select a pen width from the palette.

Color. Select a color from the palette. You can also specify custom pen colors (see"Accessing the Color Editor" on page 14.9).

Dash. Select a dash if you want the stroke to contain one.

Spacing. Enter a number to specify the distance between the selected line and the one below it. For Line #1, this setting defines the space between this line and Line #2.

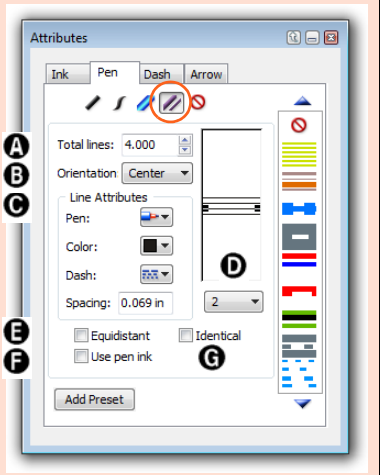
D Choose a number from the menu to edit the line. Line #1 corresponds to the bottom line. You can also click a line in the edit box to select it. The selected line is indicated with handles.

E Equidistant. Turn on this option to apply the spacing setting for the selected line to all lines.

F Use pen ink. Turn on this option to apply a color to the spaces between the parallel lines.

G Identical. Turn on this option to give all parallel lines the same appearance (pen width, color, and dash).

Click the Add Preset button when you have finished defining the stroke.



Customizing neon strokes

You can create custom neon strokes using the Neon manager in the Attributes palette. Specify the width, colors, line joins, and end caps as well as create uniform and calligraphic neon strokes.

To create custom neon strokes

1 Open the Attributes palette and select the Pens tab.

2 Select the Neon pen stroke type.

3 Use the Neon manager to define either a standard pen stroke or calligraphic stroke.

4 Select colors for the neon stroke from the pop-up palettes. Canvas blends these colors to create the neon effect.

✓ Tip
To make the stroke appear round, experiment with lighter inside colors and darker outside colors.



Neon stroke with square corners



Neon stroke with tapered corners



Neon stroke with round corners

Neon manager

Use these options to define a Neon pen stroke.

Weight. Enter a value in the Weight field. The Weight refers to the thickness of the stroke.

Width. Enter a value in the Width field. The Width refers to the thinnest part of the stroke. For a standard stroke, the Width is equal to the Weight. For a calligraphic effect, the Width should differ from the Weight.

Angle. Enter a value (in degrees) in the Angle field. For a calligraphic stroke, the angle is typically set to 45°.

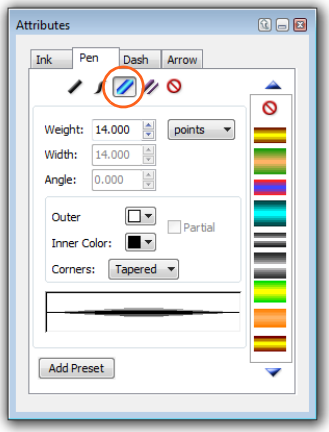
Outer. Select the color for the exterior portion of the neon stroke.

Partial. Select this checkbox to give the stroke a gradient effect.

Inner. Select the color for the interior portion of the neon stroke.

Corners. Define the appearance of the stroke's corners: Round, Square, or Tapered.

Click the Add Preset button when you have finished defining the stroke.



Creating custom arrowheads

You can create arrowheads using the Arrow manager in the Attributes palette. These arrowheads can be used as starting, ending, or double-sided arrowheads. Canvas has several preset arrowhead styles that you can use and edit, or you can use any vector, paint, or text object as an arrowhead.

To create an arrow

1 Click on the Arrow tab of the Attributes palette.

2 Select the arrow type (triangle, pie, diamond, circle, line, or custom) so you can access its respective manager.

3 Use the arrow manager controls to define the new arrow. You can even modify the arrow within the edit box.

4 Click the Add Preset button to add this new arrow to the Presets palette.

Creating custom arrows

Use these options to create a custom arrow using a selected vector or text object.

A Type. Select Custom from the menu.

Note: You can also customize existing arrows; however, the Arrow manager will have special controls depending on the arrow type selected.

B Edit box. Modify the arrowhead in this box.

C Click the Create button and the object appears in the edit box.

D Use these controls to select a right arrow, left arrow, or double-sided arrow. Click in the center for the double-sided option.

E Drag these control points to resize the arrowhead.

F Indicates the horizontal axis of the path's endpoint.

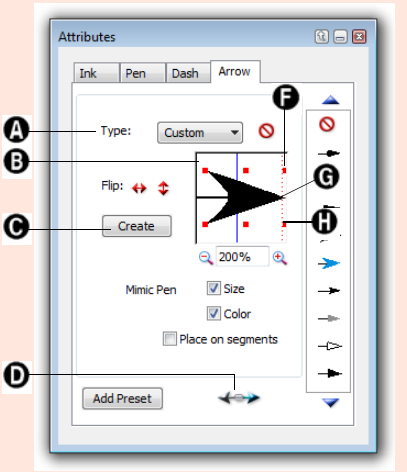
G Indicates the vertical axis of the path's endpoint.

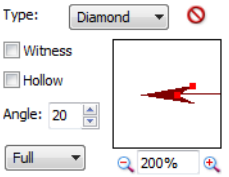
Mimic Pen. Turn Size and Color on to apply the pen width and ink to the arrow.

Place on Segments. Turn this option on to add arrows to each segment of an object.

Flip. Click the buttons to flip the arrow horizontally and vertically.

Click the Add Preset button to add this new arrow to the Presets palette.





To modify classic arrowheads

Classic arrowheads are triangle, pie, diamond, circle, and line. Select one of these from the type menu. Some options in the Arrow manager may not apply to the specified arrowhead.

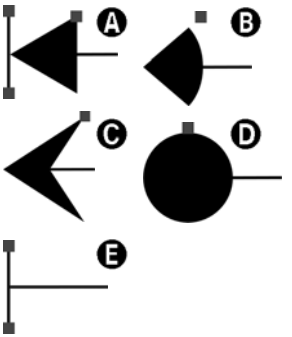
Witness Select this checkbox to add an adjustable witness line to the end of the arrowhead.

Hollow Select this checkbox to remove the fill ink from the arrowhead.

Full Select this option to draw the complete arrowhead.

Top Select this option to only draw the top of the arrowhead.

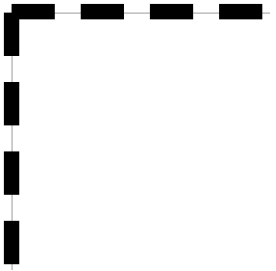
Bottom Select this option to only draw the bottom of the arrowhead.



Samples of classic arrows

A Triangle
B Pie
C Diamond
D Circle
E Line

Customizing dashes



Dash stroke

Dashes are composed of alternating solid and blank segments. Using the Dash manager, you can customize the length of up to 13 segments to create new, complex dash sequences.

You can design dashes interactively using the edit window. To precisely set the length of each dash segment, you can also specify an exact length. The ruler in the Dash manager displays inches; however, you can enter dash lengths in any unit of measurement available.

Dashes in the Presets palette always appear as 1-point wide, black and white segments. However, when you apply these dashes to an object's pen, the black segments adopt the color and size of the pen, and the white segments become transparent.

To create a dash

1 Click on the Dash tab of the Attributes palette.

2 Use the dash manager controls to define the new dash. You can even modify the dash within the edit box.

3 Click the Add Preset button to add this new dash to the Presets palette.

Creating custom dashes

Use these options to create a custom dash for your stroke.

A Dash/Gap controls. Enter the size of the dashes and gaps in points.

B Proportional. Tells Canvas to scale the length of the segments to match the pen width of the object. The length of segments in the Dash manager are based on a 1-point line. Therefore, if the pen width is 6 points and Proportional is selected, Canvas multiplies the lengths by six.

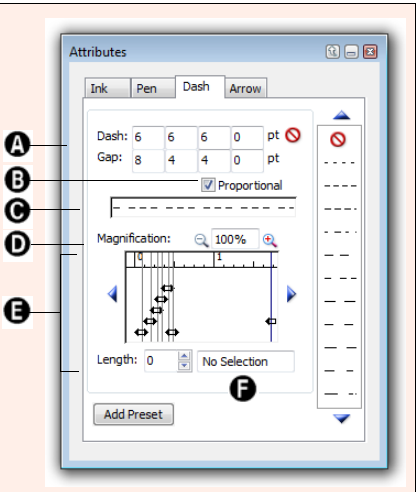
C Preview box. Displays a sample of the dash.

D Use the Magnification controls to zoom in and out. To zoom out, click the left button. To zoom in, click the right button. Select the Magnification checkbox to enable the Magnification area.

E To manually change the length of a dash, drag a dash editor. The selected dash editor is highlighted. The dash/gap length is indicated in the Length box.

F Shows the selected segment's number (its order in the sequence) and its color. "Black" indicates it will use the pen ink. "White" means the segment will be transparent (a gap).

Click the Add Preset button to add this new dash to the Presets palette.



CHAPTER 16

WORKING WITH OBJECTS

This chapter explains how to work with objects in Canvas. It tells you how to select objects with selection tools or the Find command. It describes common actions, including how to copy, group, lock, move, arrange, flip, and align objects, plus effects you can apply to all objects, including scaling, rotation, and skew. It also tells you how to use the object position data in the Object Specs palette.

Types of objects

An object is a distinct item such as a circle, an image, or a paragraph of text. There are different types of objects with unique properties, and some commands apply only to some types of objects. But objects in Canvas also share many properties. You can perform common operations, including selecting, moving, rotating, copying, and deleting, using the same methods for all types of objects.

The following object categories are used in Canvas:

Vector objects Geometric shapes such as lines, circles, rectangles, polygons, and smooth curves. Canvas defines them internally by formulas, and they print smoothly on all printers.

Paint objects Rectangular containers for pixel-based images, such as photos, screen captures, and scanned artwork. Each pixel that makes up an image has a color (or grayscale) value.

Text objects Containers for text that can be formatted at the character and paragraph levels. Text objects can be empty or contain up to a page of text, and they can be linked together.

Group objects Collections of objects that have been united with the Group command. A group object can be made from more than one type of original object.

Selecting objects

When you select an object, you distinguish it from other, unselected objects, so that when you choose a command or apply a color, Canvas knows to apply it to the selected object. In most cases, you select objects first, then apply a command or attribute. If you can't apply

an attribute, or a command is not available, check to be sure you have correctly selected an object first.

Canvas provides several tools and commands for you to select objects. Use the most convenient method for each situation. The Selection tools are the primary object-selection tools. You can also use the Select All and Find commands to select objects.

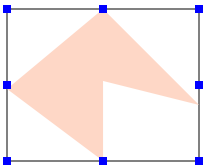
In some cases, you can select parts of objects; e.g., you can select an anchor point within a vector object, a word within a text object, and an image area within a paint object. Selection techniques for various types of objects are described in the drawing, text editing, and image editing sections of the manual.

Selection options

To select	Do this
A single object	Click the object with a Selection tool.
Multiple objects	Shift-click each object with a Selection tool.
Objects using a selection box	Drag a box around the objects with a Selection tool.
All objects touched by a selection box	With a selection tool, press Ctrl and drag out a box that touches the objects.
One object within a group object	Click the object with the Direct Group Selection tool (hollow arrow).
No objects (deselect all objects)	Click a Selection tool in a blank area, or press Esc.
All objects	Choose Edit > Select All.
The inverse of the current selection	Choose Edit > Invert Selection
An object behind another object	Tab-click the object's location until it is selected.
Unfilled object	Click the object's border, or press Tab and click inside the object.
An object on a layer other than the current layer, or an object on a master page	Tab-click the object with a Selection tool.
All objects created by a particular tool	Select the tool, then choose Edit > Select All.
Objects based on their attributes	Choose Edit > Find.

- **To select all objects:** Choose Edit > Select All to select every object in a single-layer document. To select all objects on all visible layers in a multi-layer document, change the default selection setting in the Configuration Center (see "General settings," page 12.2).

Selection indicators



A bounding box with handles surrounds a selected object

Canvas indicates that an object is selected by displaying the object's bounding box, a rectangle with solid blue squares, called handles, at each corner and side midpoint.

The first object selected is called the key object. The key object is indicated with solid blue squares in the bounding box. If several objects are selected, the other selected objects have solid white squares in their respective bounding boxes. The key object may affect alignment and distribution of the other objects (see "Aligning and distributing objects" on page 16.23).

Note: When an object is selected, its bounding box is visible even if it has attributes (the same color as the background, for example) that make the object itself invisible. Also, a selected object's bounding box is visible even if it's covered by other objects.

When selected, Canvas displays the object type at the right end of the Status bar. When more than one object is selected, the Status bar shows the number of selected objects.

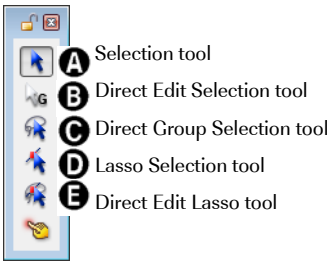


To change the key object

The key object in a selection can be changed via the context menu.

- **To switch the key object with multiple objects selected:** Select the objects and then right-click the object that you want to be the key object. Select Make Key Object in the context menu. Note that this change is only temporary.
- **To add the key object to a selection:** Select one object (by default it's the key object). Press Shift and right-click the object that you want to add to the selection but also designate as key object. Select Make Key Object in the context menu. The object becomes part of the selection as well as the key object.

Selecting objects with Selection tools



The Selection tool (a filled arrow) selects any object you click. It is the default tool when you start Canvas.

Selection tool Select this tool when you need to Select a single object. To select multiple objects, you can Shift-click.

Direct Edit Selection tool This tool allows you to select all curve-edit points of an object in one step. Merely select this tool and then click on a vector object to place that object into edit mode.

Direct Group Selection tool Using this tool, you may select individual objects within a group without the need to ungroup the object.

Lasso Selection tool Select this tool and then encircle or "draw" a line around an object or series of objects. Doing this will select all of the objects that are touching the selection. You can also use this tool to select objects by simply drawing a line through them.

Direct Edit Lasso tool You can quickly edit any path point of an object by enclosing it with this tool. This feature places the object or objects into edit mode and highlights the edit points that fall inside the selection area drawn by the Direct Edit Lasso Tool. Likewise, you may also draw a line through an object to allow editing of a path point.

- **To select one or multiple objects:** With the Selection tool, click an object. To select multiple objects, Shift-click each object you want to select. For Windows only, you can also hold down the right mouse button and click multiple objects to select them.

With the Selection tool, you can drag a selection box around objects to select them. Canvas selects all objects inside the selection box.

Editing objects

All types of objects in Canvas can be easily modified. In general, you place an object in *edit mode* to modify it.

Edit mode lets you use various features to edit each type of object; e.g., when a text object is in edit mode, use word-processing features to select, cut, copy, paste, and edit text. When a vector object is in edit mode, you can modify anchor points and segments to reshape its path. When a paint object is in edit mode, you can use painting tools and commands to modify the image it contains.

Some other objects, including spirals, EasyShapes, objects that have transparency masks, and SpriteEffects, have special editing modes (besides their standard edit modes); e.g., if you place a vector object in edit mode, you can edit the object's path. If the object also has a transparency mask, you can edit its path in path edit mode, or use the Sprite tool to edit its transparency mask in mask edit mode.

- **To place objects in edit mode:** Select an object and choose Object > Edit > Object to place it in object edit mode or double-click the object.

- **To exit edit mode:** Press the Esc key.

Selecting and editing objects with the context menu

Use the context menu to select an object or place an object in edit mode. The context menu can make it easier to select and edit objects that are covered by other objects.

- **To display the context menu:** Right-click the object.

To select objects using the context menu

1 When no objects are selected or in edit mode, point to the object you want to select. If the object is hidden behind other objects, point to its location.

2 Choose Select > *Object Name* in the context menu. Canvas selects the object whose name you choose in the Select submenu. Choose a vector, text, paint, or group object.

To edit objects using the context menu

1 When no objects are selected or in edit mode, point to the object you want to edit. If the object is hidden behind other objects, point to its location.

2 Choose Edit > *Object Name* in the context menu. Canvas places the object whose name you choose in the Edit submenu into edit mode. Choose a vector, text, or paint object.

Selecting objects based on their properties

Choose Edit > Find to select objects by type and attributes.

In the Find palette, use the Objects tab to set up selection criteria.

A To select objects by type, check Type and choose an object type icon in the menu. Selecting text or paint objects makes Fill, Stroke, and Pen options unavailable.

B To select objects by fill or pen ink, check these boxes and choose the inks in the menus. Only inks used in the document, plus process colors and white, appear in the menus.

To select objects by stroke, check Stroke and choose the stroke in the menu. Only strokes used in the document appear in the menu.

To select objects by name, select Object Name. Type the name in the text box. Select Object # and type a number in the box to select an object by its number.

SpriteLayers: Use this option to select objects that have transparency effects.

SpriteEffects: Use this option to select objects (including lenses) that have SpriteEffects.

Lens Objects: Use this option to select objects that have been converted to lenses.

Group Level. Select a value from the menu if you wish to search in grouped objects.

Search all visible layers: To select objects in the current layer only, uncheck this option.

Add result to selection: Check to select additional objects without deselecting objects that are already selected.

Use Selected Object's Attributes: When an object is selected, select this option to enter the object's properties in the Objects tab.

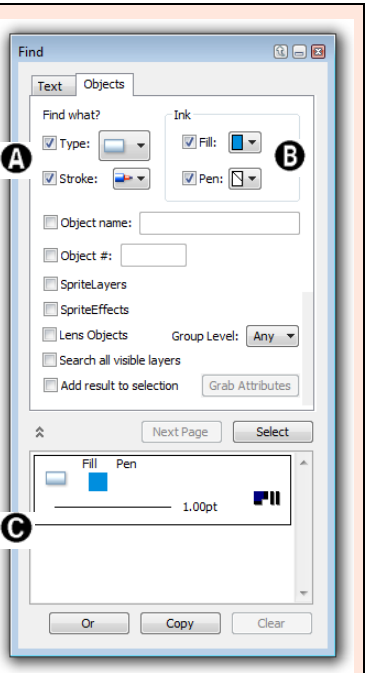
Grab Attributes: Click to select objects based on the current settings.

Using selection sets

Click the arrows to expand the palette to work with selection sets, which let you broaden a search.

C Selection criteria symbols make up a selection set. The current selection set is boxed. Changing selection options updates this selection set. Click a set to make it the current selection set.

Or: Click to create an empty selection set.



Copy: Click to duplicate the current selection set.

Clear: Click to delete the current selection set. With only one set, Clear is unavailable.

Copying, cutting, pasting, and deleting objects

Once you select one or more objects, you can perform various basic editing functions. The following are the basic editing commands in the Edit menu:

Command	Result
Copy	Copies a selection to the Clipboard
Cut	Removes a selection and places it on the Clipboard
Clear	Removes a selection without changing the Clipboard
Duplicate	Copies a selection into the same document without changing the Clipboard

Command	Result
Duplicate with Transform	Creates copies of objects that have been skewed, rotated, or offset.
Paste	Places the Clipboard contents into the active document
Paste and Place	Places the Clipboard contents into the active document with the upper-left corner at the point where you click

Copying objects to the Clipboard

The Clipboard is a part of the system that temporarily stores selected objects when you choose the Copy or Cut command. The Clipboard stores the results of one editing action (which can include multiple objects). Whatever is on the Clipboard is replaced by the next selection you place there, including a selection placed by using the Cut or Copy command in another application.

- You can bypass the Clipboard by using the Duplicate command to quickly copy a selected object in the same document without replacing the Clipboard contents.
- Using the Clear command or the Delete keyboard key does not replace the contents of the Clipboard.

When you paste objects into other programs, the Clipboard uses a format that the receiving program understands. However, special types of objects and special object attributes can be lost when pasting objects into other applications. If you can't transfer an object successfully using the Clipboard, consider using a compatible file format to import the object as a file into other programs.

Using Cut, Copy, and Paste commands

The Cut, Copy, and Paste commands let you make copies of objects using the Clipboard. Use Cut or Copy to place objects on the Clipboard, and then choose Paste to place copies in the same document, other open Canvas documents, and also into other programs.

You select one or more Canvas objects before choosing Cut or Copy. You can select text objects, paint objects, vector objects, specialized objects such as dimensions, and group objects. When you choose Cut or Copy, the selected items appear on the Clipboard.

- The Cut command removes selections from the document.

- The Copy command leaves selections in the document.

Using the Paste command to insert the Clipboard contents into a document does not erase the Clipboard. You can use Paste to insert the Clipboard contents as many times as you want. The Clipboard contents remain intact until you use the Copy or Cut command in any application to replace the Clipboard contents with a new selection.

To paste copied objects

1 Select the objects that you want to copy.

2 Choose Edit > Copy. Canvas puts the selected objects on the Clipboard.

3 If you want to paste the copied selection into another document, switch to that document. You can switch to an open Canvas document by choosing its name at the bottom of the Window menu.

4 Choose Edit > Paste. Canvas pastes the Clipboard contents into the active document. Pasted objects appear selected in the center of the document window.

Options for copying objects

✓ Tip
These options have no effect when you paste selections in Canvas.

The Copy Options dialog box lets you select formats when you copy objects to the Clipboard. This command is useful when you want to copy a selection using a format that can be pasted into another program

You can select the program into which you want to paste objects. Canvas selects the best format for copying the selection to the Clipboard. You can select common programs, such as Microsoft Word, Microsoft PowerPoint, and Microsoft Excel.

To use Copy Options

1 Select the items to copy and choose Edit > Copy Special > Copy Options.

2 Select options in the dialog box (see “Configuring copy options,” page 16.9).

3 Click OK and Canvas will copy the selection to the Clipboard.

Configuring copy options

In the Copy Options dialog box, select a program or configure the options yourself.

Preset For. Choose a program name. This sets up the dialog box so objects will be copied in the best format for pasting into the selected program.

If the program you want to use is not listed, use the other options to select the format for copying objects to the Clipboard.

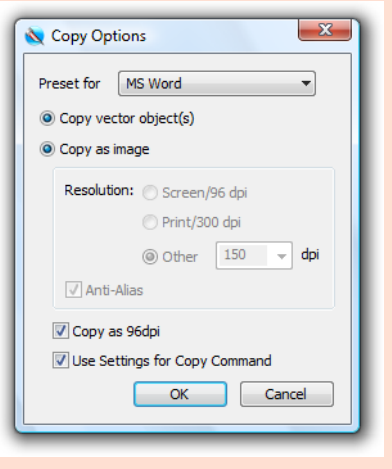
Copy vector object(s). Uses the standard format to copy objects to the clipboard in Windows (WMF). In most cases, this option is the same as using the standard Copy command. WMF does not support transparency; transparent Canvas objects are not rendered and will appear opaque when pasted into other programs.

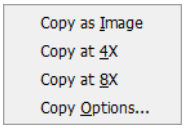
Copy as Image. Copies objects to the Clipboard as rasterized images. Select a resolution option, or select Other and enter the desired resolution. This option preserves transparency effects among Canvas objects. However, most programs don't support transparency, so Canvas objects pasted into other programs won't appear transparent relative to objects in the other programs.

Anti-Alias Softens the edges of objects copied to the Clipboard. Anti-Alias is available when you select Copy as Image.

Copy as 96 dpi. Select this checkbox to copy the object at 96 dpi.

Apply settings to normal copy command Applies the dialog box settings to the Copy command. When you select this option, you don't have to choose Edit > Copy Special > Copy Options to use the same settings again.





Special copy commands

Several commands let you perform special operations for copying objects to the Clipboard. To view these commands, choose Edit > Copy Special.

Copy as Image

When you want to copy an object, and then paste it into a document created in another application, use the Copy as Image command to enhance the printed appearance of the Canvas object you intend to paste. This procedure can smooth out jagged edges and help maintain the object's details.

- **To use the Copy as Image command:** Select the objects you want to copy, and then choose Edit > Copy Special > Copy as Image. When you choose Edit > Copy Special > Copy as Image, Canvas places the selected objects on the Clipboard. Then use another application's Paste command to place the Clipboard contents into a document.

✓ **Tip**
When copying and pasting within Canvas documents, these commands perform the same function as the standard Copy command. Using these commands is not recommended for copying paint objects, which are already rasterized at a specific resolution.

Copy at 4X, Copy at 8X

Use the Copy at 4X command or Copy at 8X command to place vector objects on the Clipboard as rasterized objects at specific resolution levels. You might want to do this if you are pasting Canvas vector objects into another program and the objects appear jagged when printed. This can happen when a program prints Canvas vector objects at the low resolution of the screen display.

The Copy at 4X and Copy at 8X commands place selected objects on the Clipboard at specific resolution levels: "4X" indicates resolution 4 times greater than screen resolution and "8X" indicates resolution 8 times greater than screen resolution. 4X approximates the resolution of a 300 dpi printer; 8X approximates the resolution of a 600 dpi printer. Choose the resolution level based on the printing device you are going to use.

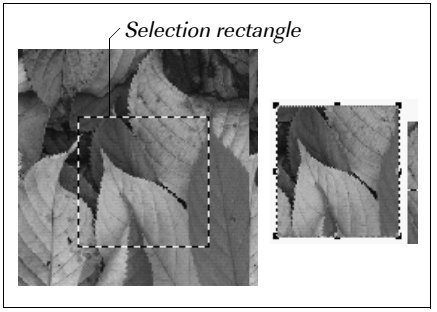
- **To copy vector objects at increased resolution:** Select the objects to copy and choose Edit > Copy Special > Copy At 4X or Edit > Copy Special > Copy at 8X. Canvas places the selected objects on the Clipboard. Then paste the Clipboard contents into other applications.

Copying selections in objects

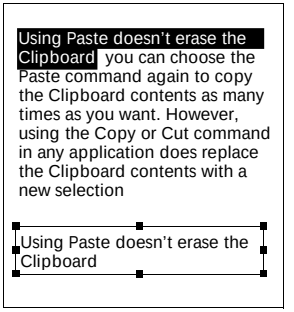
Besides using Cut or Copy to place entire objects on the Clipboard, use these commands to place selected parts of Canvas objects on the Clipboard.

Cut or copy the following parts of objects:

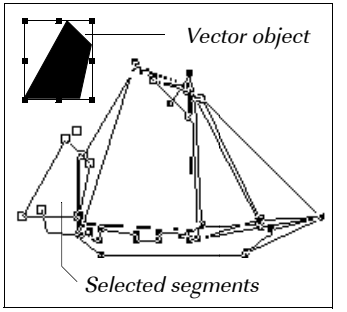
- text selections made by highlighting text in a text object
- image selections made by defining areas, ranges of colors, or loading alpha channels in a paint object
- segment selections made by selecting anchor points of vector objects in path edit mode



A selection copied from an image (left) creates a selected object (right) when pasted into a document



A text object (bottom) results from pasting a copied text selection (top)



A selected vector object (top) results from pasting copied segments of a path

Pasting selections and pasting into objects

When you paste a selection, the result depends on whether an object is in edit mode at the time:

- Pasting with no object in edit mode creates a new, separate object containing the selection.
- Pasting with an object in edit mode usually pastes the selection into the object.

For example, if you copy a highlighted text selection, and then choose Paste when no object is in edit mode, you create a new text object containing only the text you selected. If you choose Paste when a text object is in edit mode, the pasted text appears at the insertion point in the text object. If you choose Paste when a paint object is in edit mode, the selected text appears as a floating image selection in the paint object.

Pasting into text You can paste text into a text object in edit mode. This lets you insert new text cut or copied from another object, and move text from one place to another while editing a text object.

Pasting pixels into images You can paste an image selection into a paint object in edit mode. The pixels that you paste become a floating selection in the paint object.

Pasting objects into images You can paste a vector object or text into a paint object in edit mode. Canvas converts the object into pixels pasted as a floating selection in the paint object; i.e., Canvas rasterizes the Clipboard contents and then pastes an image selection into the paint object.

✓ **Tip**
To copy an object and paste it in the same position on a different page, you can do so by copying the object and then pressing Shift and choosing Edit > Paste.

Pasting and placing objects You can use the Paste and Place command to copy objects and position the copies anywhere in the document. Copy the objects to be pasted. Press Ctrl and choose Edit > Paste and Place. You must press the modifier key to make this command appear.

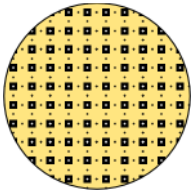
To paste the copy, do one of the following:

- Click to place the copy at full size.
- To set the dimensions of the copy, drag to create a bounding box to contain the selection.

Transferring object attributes

Transfer attributes from one object to other objects using the Paste Attributes command. Transferring attributes can help you maintain consistency between objects.

You can transfer attributes from a source selection — an object or text that has been copied to the Clipboard — to a target selection, which is one or more objects selected in the document. Or, you can retain the source selection attributes as the current attributes — those attributes that you can apply to new objects.



Vector object



Text object



Attributes pasted on text object

Use Paste Attributes to transfer inks and stroke settings, object dimensions, effects, and text attributes.

Depending on the source selection and target selection, choose options listed in the Paste Attributes dialog box.

An option is available if the attribute was copied from the source selection and can be applied to the selected target objects. The exception to this rule is the Text Style option. The Text Style option is available whenever the source selection is text, even if the target objects are not. In this case, no Text Style attributes will be applied to the target selection, but the Text Style attributes will be

retained as the current attributes and can be applied to new text objects.

To paste attributes

1 Select an object or text whose attributes you want to transfer.

- If you select multiple objects, you can only paste the dimensions of a bounding rectangle encompassing all the objects.
- If you select a group object, only attributes that apply to the entire group, including the bounding box size and transformations applied to the group object, will be available.
- If you select a text object, only the attributes common to the entire object will be available.

2 Choose Edit > Copy to place the selection on the Clipboard.

3 Select the one or more target objects to receive the attributes. If no objects are selected, the source attributes will be retained as the current attributes and can be applied to new objects.

4 Choose Edit > Paste Attributes. In the Paste Attributes dialog box, select the attributes to paste. Options that appear dimmed were not available in the source selection or cannot be applied to the target selection (see "Paste Attributes options," page 16.14).

5 Click OK to paste the attributes.

Paste Attributes options

Pen ink. Transfers the source selection's pen ink. You can transfer pen inks if the source selection is a vector object or text that has a pen ink, and the target objects are vector or text objects.

Fill ink. Transfers the source selection's fill ink. You can transfer fill inks if the source selection is a vector object or text that has a fill ink, and the target objects are vector or text objects.

Stroke. Transfers the source selection's stroke, including pen, dash, and arrow attributes. You can transfer strokes if the source selection is a vector object or text that has a stroke, and the target objects are vector or text objects.

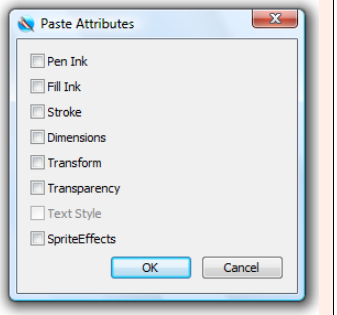
Dimensions. Transfers the dimensions of a rectangle "bounding box" that encompasses the source selection. You can transfer bounding box dimensions from any source object to any selected objects, but not to text selected within a text object. This makes all target objects the same size as the source.

If the source object has been rotated or skewed, you can transfer its original dimensions by selecting Dimensions. To transfer its transformed dimensions, select Transform.

Transform. Transfers rotation and skewing applied to the source selection's bounding box. You can transfer these effects to any selected objects.

Transparency. Transfers the transparency effects applied to the source selection.

Text Style. Transfers certain text attributes from a text source selection to a text target selection: font, type size, text style (bold, italic, and so on), leading, kerning, and justification. You can transfer text attributes when a particular attribute is uniform in the source selection; e.g., if different kerning values are applied to characters in the source text, kerning will not be available for transfer to the target text.



SpriteEffects. Transfers filters and adjustments that have been applied with the SpriteEffects palette from the source to the target objects.

Making multiple copies

Use the Copy and Paste commands to make multiple copies of selected objects through the Clipboard. If you want more control over placement, number of copies, scaling or rotation, use the Duplicate and Replicate commands to make multiple copies.

- With a selection on the Clipboard, choose Paste to insert the selection in the center of the active document's current view. Repeat the Paste command to make multiple copies.
- The Duplicate command copies selections immediately and lets you space copies evenly. The Replicate command lets you scale, rotate, and offset multiple copies.

Duplicating selections

The Duplicate command quickly copies selected objects into the same document, without affecting the contents of the Clipboard.

The Duplicate command offsets copies a preset distance horizontally and vertically from the original. You can move the copy (without deselecting it) to adjust the offset distance and direction and

then repeat the Duplicate command to make more evenly-spaced copies.

You can change the Duplicate command's preset offset values (see "Offset for duplicating objects" on page 12.10).

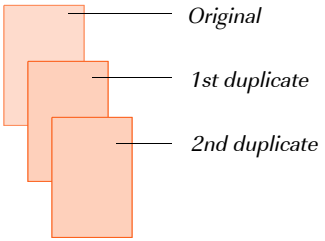
To duplicate and space copies evenly

1 Select one or more vector, text, paint, or group objects to copy.

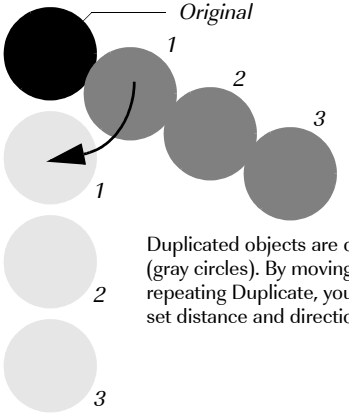
2 Choose Edit > Duplicate. Canvas duplicates the selection and offsets the copy a preset distance from the original.

3 The copy must remain selected as you drag it or use the keyboard arrow keys to move it into position. The new position establishes the offset distance and direction from the original selection.

4 Choose Edit > Duplicate again. Canvas creates the next copy using the offset defined from the original selection to the first copy. Repeat this step to create additional evenly-spaced copies.



Canvas offsets and stacks duplicates, placing the newest copy in front of the stack.



Duplicated objects are offset a preset amount (gray circles). By moving the first copy and repeating Duplicate, you can set a custom offset distance and direction (light gray circles).

To duplicate selected objects with modifier key

You can duplicate an object by pressing a modifier key as you drag the object. When an object is selected, press a modifier key to duplicate and resize it as you drag a handle. In Freeform mode, you can press a modifier key to duplicate while rotating or skewing an object.

1 Select the objects you want to duplicate.

2 Press Ctrl as you drag the objects.

- **To make multiple copies while dragging:** Select the objects you want to duplicate. Press Ctrl+Alt as you drag the objects.

To duplicate while resizing

1 Select an object to duplicate.

2 Begin to drag a handle on the object's bounding box to the size you want the duplicate to be.

3 As you drag, press and hold Ctrl. When you release the mouse button and the modifier key, the duplicate object appears in front of the original.

To duplicate while rotating or skewing

1 Select an object and choose Effects > Freeform to put the object in Freeform mode.

2 Point to a handle and press Ctrl as you drag the handle.

- **To rotate the object:** Drag one of the four corner handles.
- **To skew the object horizontally:** Drag a horizontal skew handle to the left or right.
- **To skew vertically:** Drag a vertical skew handle up or down.

The duplicated object rotates or skews depending on which handle you drag. You cannot rotate and skew the object at the same time. When you release the mouse, the duplicate is in front of the original.

Duplicate with Transform

You can now create duplicates of objects that have been skewed, rotated, or offset.

1 Select the original object.

2 Duplicate the object.

3 Select the duplicate and apply a transformation, such as rotation, to the duplicate object.

4 Choose Edit > Duplicate with Transform.

The duplicate object is then duplicated as well as transformed.

Remember that each time you choose Edit > Duplicate with Transform, the duplicate object is duplicated and transformed once again; e.g., duplicate an object and then rotate the duplicate by 20°. Choose Duplicate with Transform and the new duplicate is transformed by another 20°.

The multigon above was duplicated and then rotated 20°. Each time Duplicate with Transform was applied, the resulting duplicate would rotate an additional 20°. The final duplicate had a rotation of 200°.

To create multiple duplicates

After you duplicate an object using a modifier key, make more copies with the same offset distance, angle of rotation, or skew factor.

1 Select the duplicated object.

2 Choose Edit > Duplicate. Canvas creates another duplicate and applies the same offset distance, angle of rotation, or skew factor.

Scaling, rotating, and offsetting copies

The Replicate command offers powerful capabilities for duplicating objects. Use the Replicate dialog box to set the number of copies and to rotate, scale, and position copies with one command.

To replicate a selection

1 Select one or more objects to copy and choose Edit > Replicate.

2 In the Replicate dialog box, specify the number of copies. Enter the scaling, rotation, and offset values you want to apply. For information on these settings, see “Options in the Replicate dialog box” on page 16.18.

- To preview the replication, click Apply. Canvas draws the copies and the dialog box stays open. You can change settings and click Apply to preview the new settings.
- To cancel the replication, click Cancel. Canvas closes the Replicate dialog box and erases preview copies.

3 Click OK to copy the selection and close the Replicate dialog box. The original object is deselected and the copies are selected.

Options in the Replicate dialog box

The Replicate dialog box lets you rotate, scale, and duplicate selected objects.

Copies. Enter the number of objects you want to create.

Rotate. To rotate each copy relative to the preceding object, select Rotate. Type the rotation amount from (minus) -359.0 to 359.0 degrees. The center of rotation is shown in the "Around" box by a hollow handle; click to select another handle as the rotation center.

Scale by. To incrementally change the size of each copy, select Scale by. In the pop-up menu, choose Percentage, Length, or Ratio. In the text boxes, enter horizontal and vertical scaling factors.

Percentage scales each copy by the specified percentages of the proceeding object's dimensions. Enter whole numbers from 1% to 999%.

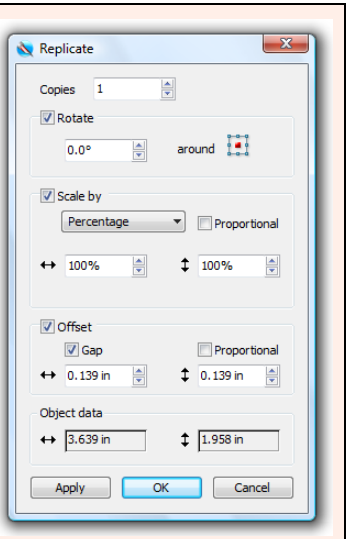
Ratio lets you resize copies by fractional amounts. Canvas scales each copy to ratios of the previous object's horizontal and vertical dimensions.

Type ratios with whole numbers from 1 to 999. The left number represents the copy; the right number represents the previous object. A 1/1 ratio maintains dimensions; 1/2 halves dimensions; 2/1 doubles dimensions.

Length increases or decreases by a fixed amount each copy of the object using the values in the horizontal and vertical text boxes.

Proportional. If selected, Canvas makes the vertical value in the Scale by or Offset area equal to the horizontal value.

Offset. Check this option to place copies a specified distance from the previous object. In the text boxes, enter the horizontal and vertical offset distance. Positive numbers offset copies up and right; negative numbers offset objects down and left.



Object data. Displays the selection's height and width. These values can't be edited.

To replicate and position objects

You can replicate objects and then strategically position them according to specified X/Y coordinates.

- **To replicate and position an object:** Select an object and then choose Edit > Replicate and Position.

Replicating & positioning

A Coordinate space. The Length radio button must be selected to position objects according to X/Y coordinates. To enable the Angular radio button, you must first configure your world with the GIS palette (see "GIS palette" on page 39.4).

B Bounding box icon. Canvas performs the positioning according to the selected handle. By default, the center handle is selected. Select another handle, if necessary.

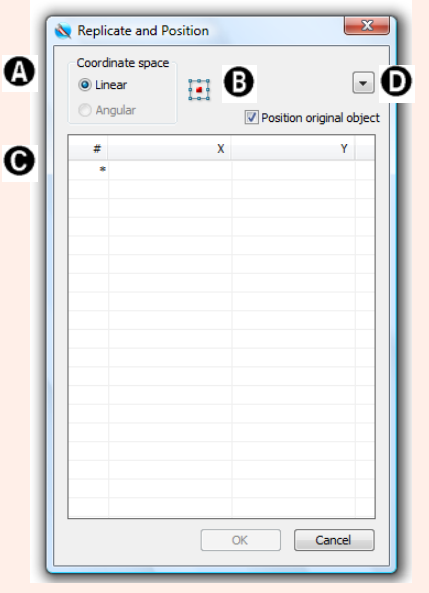
C Coordinate table. Enter the X/Y coordinates in the appropriate fields. The # column lists the replicates in sequence.

Position original object. If selected, the coordinates for the first replicate correspond to the original object; i.e., the original object will move to the coordinates entered for replicate #1.

D Menu icon. Click to access the Paste and Load commands.

With the Paste command, you can paste points that have been copied to the Clipboard.

With the Load command, you can open .txt, .csv (comma delimited), and .prn (space delimited) files that contain points.



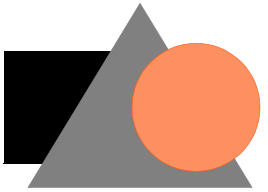
Grouping and ungrouping objects

Use the Group command to unite objects that you want to keep together as one unit. You can group individual objects as well as already-grouped objects. When you no longer want to keep a group together, separate the original objects with the Ungroup command.

Grouping and stacking order

Grouping objects can change the stacking order of the objects relative to objects outside the group; e.g., you have three overlapping objects. If you group the front and back objects, the group moves to the back and the middle (not grouped) object becomes the frontmost object.

The square is behind the triangle, which is behind the circle in the stacking order



After selecting the square and circle and grouping them, the group goes behind the triangle in the stacking order



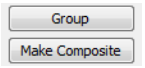
✓ **Tip**
After you group objects, you can select individual objects in the group with the Direct Selection tool.

To group objects

1 Select the objects that you want to group.

2 Choose Object > Group or click the Group button in the Properties bar. Canvas replaces the bounding boxes of the individual objects with a single bounding box.

When you apply a command to a group object, the effect in most cases is the same as if you applied the command to each object in the group individually.



To ungroup objects

1 Select one or more grouped objects that you want to separate.

2 Choose Object > Ungroup or click the Ungroup button in the Properties bar. Canvas separates the group and leaves the individual objects selected. If any of these objects are group objects, ungroup them by choosing Object > Ungroup again.

Moving objects

Move objects by dragging them, using the Properties bar, or using the keyboard arrow keys. You can also use the Move command to specify a position change, and the Object Specs palette to specify exact coordinates.

When you drag an object, the Properties bar and Status bar shows the change in the object's X/Y position.

Make precise positioning easier by turning on the autogrid so that objects you drag snap to preset ruler increments. You can also place alignment guides that objects will snap to in a document.

- **To move an object using the Selection tool:** Position the pointer on the object and drag. If you drag as soon as you press the mouse, an outline of the object follows the pointer. To see the entire object as you drag, pause after you press the mouse button, and then drag.

Press modifier keys as you drag objects to constrain movements and perform other functions.

To	Do this
Constrain movement to 45° increments	Press Shift while dragging
Copy objects by dragging	Press Alt while dragging

To	Do this
Leave a trail of object copies	Press Ctrl + Alt while dragging

Tip
You can change the default distances that keyboard keys move objects (see "Offset for moving objects" on page 12.10).

- **To move objects using the arrow keys:** To move objects left, right, up, or down, press the corresponding arrow key. Use the modifier keys shown in the following table to move greater distances.

To move objects	Do this
1 pixel to the left, right, up or down	Press an arrow key
10 pixels to the left, right, up or down	Press Alt and an arrow key
50 pixels to the left, right, up or down	Press Ctrl and an arrow key

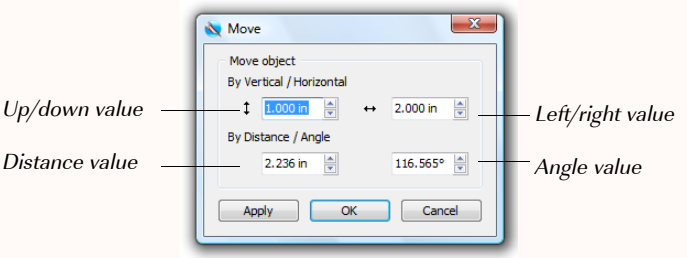
To move objects a specified distance

Use the Move command to specify distance and direction.

Tip
You can specify angular movement in 0.01° increments.

1 Select the objects and then choose Object > Move.

2 In the Move dialog box, enter values in the first or second row of text boxes. Use negative numbers to move up and to the left. Use positive numbers to move down and to the right.



3 Click Apply to preview or OK to implement the Move settings.

Arranging objects in the stacking order

Each object in a Canvas document is part of a stack of objects on the same layer. Each object has a position in the stack. Unless you rearrange objects, the newest object, created or pasted, is in front of the stack and the oldest object in the back.

Stacking order affects the appearance of objects when you view and print them. Like actual objects placed in a stack, the front object in the stack blocks objects behind it. An object's position in the stack also is a factor in alignment and combining operations.

Commands in the Object > Arrange menu let you change an object's position in the stack. Move objects to the front or back, and move objects one level at a time toward the front or back of the stack.

- **To change an object's position in the stack:** Select the object and choose a command in the Object > Arrange menu.

Command	Result
Bring to Front	Moves selected objects to the front of the stack
Send to Back	Moves selected objects to the back of the stack
Shuffle Up	Moves selected objects one step toward the front
Shuffle Down	Moves selected objects one step toward the back

Arranging objects on layers and pages

Commands in the Object > Arrange menu let you move and copy selected objects to other layers on the same page and to layers on other pages.

To send or copy objects to another location

1 Select the objects, and then do one of the following:

- Choose Object > Arrange > Send to Layers to move objects to new locations.
- Choose Object > Arrange > Copy to Layers to copy objects to new locations.

2 In the Layer Select dialog box, click one or more layers to designate them as the destination for the selected objects.

✓ **Tip**
The destination layer for the objects cannot be locked.

3 Click Select. Canvas copies or moves the selected objects to the destination layer or layers.

Locking and unlocking objects

When you want to secure objects from unintentional changes, you can lock them. Once an object is locked, it can only be selected by Tab-clicking the object. However, if the "Canvas 6-style object locking" option in the Configuration Center is selected, you can select locked objects by clicking on them. Locked objects can be copied, but the copies won't be locked.

To lock or unlock objects:

1 Select the object(s) that you want to lock or unlock.

2 Choose Object > Lock or Object > Unlock (Unlock All, if no objects are selected).

How commands affect locked objects

If you apply the Align command to several selected objects, and one object is locked, the other objects align to the locked object.

If you group several objects and one of the objects is locked, all the objects are positioned behind the locked object in the stacking order.

Aligning and distributing objects

Use the Align menu and Align palette to quickly and precisely position objects. The Align menu lets you quickly align selected objects. The menu includes these common alignment commands: Top, Left, Bottom, Right, Center, Center Vertical, and Center Horizontal.

To use the Align menu

1 Select two or more objects.

2 Choose Object > Align and select an alignment option.

Note: The Align options are also available in the Properties bar when multiple objects are selected.

✓ **Tip**
The Align menu is also in the context menu when multiple objects are selected.

Using the Align palette

The Align palette provides additional alignment and distribution options.

- **To open the palette:** Choose Object > Align > Show Palette.

Apply alignment and distribution options to vector objects, group objects, paint objects, and text objects. You can align and distribute objects in separate or combined operations. As the reference point for alignment and distribution, you can choose points on the objects or the document.

Aligning objects When aligning objects, Canvas lines up key points on the objects in relation to the key object. Choose left, right, top, bottom, or center alignment.

Distributing objects When distributing objects, Canvas spreads them out over a specified area and equalizes the space between the key points. Choose inside, top, center, bottom, and outside as methods for distribution; e.g., if you choose left edges for distribution, the left-most point in each object is an equal distance from the left-most point in each of its neighbors.

If one of the objects you select for alignment is locked, other objects align relative to it. When distributing objects, Canvas may place all objects relative to the option selected in the Distribute to menu.

Align palette

Choose Object > Align > Show Palette to open the palette. Select the objects you want to arrange. Click Apply to implement the current settings.

In the Vertical and Horizontal areas, click buttons for alignment and distribution options. Active buttons are recessed.

You can select an alignment or distribution option in each area.

A For no change in position, click the first button in either the Vertical or Horizontal area.

Vertical Align. (Left to right)

A None

B Top

C Center

D Bottom

E Edge to Edge (Top to Bottom)

F Edge to Edge (Bottom to Top)

Vertical Distribute. Inside, top, center, bottom, and outside.

Horizontal Align. (Left to right)

G Left

H Center

I Right

J Edge to Edge (Top to Bottom)

K Edge to Edge (Bottom to Top)

Horizontal Distribute. Inside, top, center, bottom, and outside.

Selection Rectangle. Select this option to ignore the stroke of the objects when aligning or distributing objects. Deselect the option to use the outside edge of objects' strokes .

Arrange Z-Order. This option is most applicable to distribution. When you select Arrange Z-Order, the command Arrange > Bring to Front is performed on each object. In the end, the objects are stacked on top of each other in the same order in which they were distributed. Results are most notable when the operation results in overlapping objects). Only available when either horizontal or vertical alignment/distribution is selected. Both cannot be selected. Horizontal and vertical sorting may differ and the result of rearranging would then not be clearly defined

Edge-to-edge alignment (horizontal & vertical). When applying either horizontal or vertical edge-to-edge alignment, the order of the aligned objects depends on the order in which the objects were created; i.e., the object furthest to the left or at the very top in an edge-to-edge alignment was created first.

Both Edge to Edge options have the same effect. They align all the remaining objects edge to edge with the key selection object.

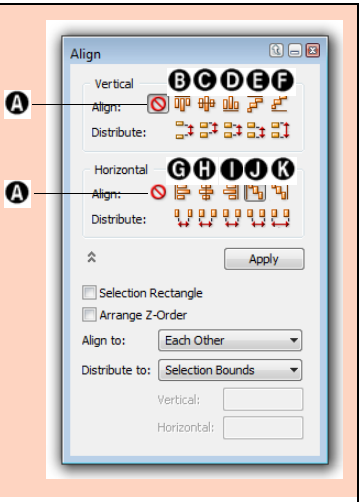
Align to: Choose a reference for alignment:

Key Selection Object. Aligns all the objects in relation to the key selection object. Key selection object does not move.

Grid. Aligns all objects to the grid. If no grid is defined, the objects don't move. The key selection object has no effect.

Printable Area. Aligns all objects with the edge of printable area. If no printable area is defined, the entire document is selected.

Document. To a specified location in the document. If you center an object in a multi-page illustration, portions can appear on multiple tiles.



Distribute to: Choose a reference for distribution.

Selection Bounds. Distributes all the objects over the area defined by current selection bounds. Key selection object may move.

Document. Distributes all objects over the entire area of the document. Key selection object may move.

Fixed Amount. Distributes all objects over a fixed distance. Key selection object doesn't move and remaining objects are positioned accordingly within that distance. Enter the amount in the Horizontal and Vertical fields below the Distribute to menu.

Spacing. Distributes all objects so the distance between each object is the amount indicated in the Vertical and Horizontal fields below the Distribute to menu. The key selection object doesn't move and the remaining objects are positioned accordingly. The amount of spacing may be a negative number.

Rotating, skewing, and flipping objects

You can rotate Canvas objects clockwise or counter-clockwise, flip them on one or both axes, and skew their bounding boxes. Rotate and skew around an object's center, or move the centerpoint to any location.

When you rotate an object, the object's bounding box also rotates. If you drag a selection handle of a rotated object, the bounding box changes shape in the rotated orientation, so you can resize an object without distorting its basic shape. If you need to, you can also return the rotated bounding box to its original orientation by choosing Object > Paths > Convert To Paths.

- **Removing effects:** After you rotate, skew, or flip objects, you can return them to their original orientation and shape. Select the objects and choose Effects > Remove Effects.

Rotating and skewing in freeform mode

When you put an object in freeform mode, you can rotate and skew it by dragging special handles.

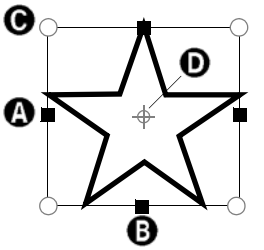
- **To put an object in freeform mode:** Select the object and choose Effects > Freeform. Rotation and skewing handles and the object's centerpoint appear.

You can also put a selected object in freeform mode by clicking it. This depends on a setting in the Configuration Center (see "General settings" on page 12.2).

- **To end freeform mode:** Click away from the object, or press Esc.

Freeform mode

A Vertical skew handle
B Horizontal skew handle
C Rotation handle
D Rotation center



Rotating objects in freeform mode

In freeform mode, the circular handles at each corner of the bounding box are rotation handles. The circle and crosshair in the center of the object is the point around which the object rotates.

- **To rotate an object in freeform mode:** Drag one of the four corner handles. An outline of the object rotates as you drag a handle.
- **To set the center of rotation:** Drag the centerpoint to a new location anywhere on the screen. To make the centerpoint snap to one of the handles or the center, press Shift as you drag.

Rotating objects

The Horizontalize command rotates a selected object along a defined horizontal line. This command is useful when trying to straighten image objects.

To apply the Horizontalize command

1 Select the object.

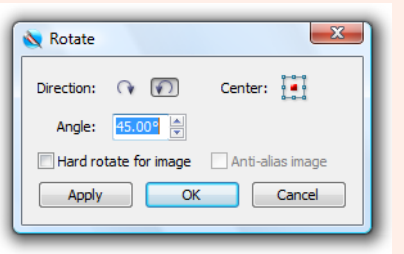
2 Choose Effects > Horizontalize. The cursor changes to a crosshair.

3 Click the crosshair to establish the start point of the horizontal line.

4 Click the crosshair again to indicate the end point of the horizontal line. The Rotate dialog box opens.

5 Select a handle in the bounding box icon to define the center of rotation.

6 Enter the direction and angle of rotation.



7 Click Apply to see the effect and then OK to close the dialog box.

Hard rotate for image. Choose this option to render and rotate the background area of the image.

Anti-alias image. Select this option to have a smoother, better quality image.

Skewing objects in freeform mode

When an object is in freeform mode, slant its shape by dragging the horizontal and vertical skew handles. Skewing an object reshapes it by changing the relationship of the horizontal and vertical axes to the skew centerpoint.

Canvas skews objects around a centerpoint that you can position to achieve the desired effect. Drag the centerpoint to any position inside or outside the object. The location of the skew centerpoint changes the effect of dragging a skew handle on the object.

To position the centerpoint on one of the freeform handles or in the center of the object, Shift-drag the centerpoint to place it.

✓ Tip

You can also skew objects by clicking the Skew button in the Properties bar. Select a skew option, then enter a degree value in the field, and press Enter.

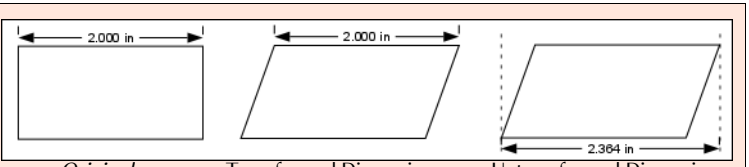
- **To skew an object horizontally:** Drag a horizontal skew handle to the left or right.
- **To skew vertically:** Drag a vertical skew handle up or down.

Transformed Dimensions vs. Untransformed Dimensions

If you plan on transforming objects, you have the option of maintaining the object's original dimensions or allowing the object's dimensions to be altered after the transformation.

Click on the Transform icon in the Properties bar and select either Transformed Dimensions or Untransformed Dimensions.

If you select Transformed Dimensions, the object's original dimensions will be retained after being transformed.



Original Transformed Dimensions Untransformed Dimensions

If, however, you select Untransformed Dimensions, the object's dimensions will change when the transformation is applied.

In the example above, a 2" x 1" rectangle is horizontally skewed by 20°.

When Transformed Dimensions is applied, the rectangle maintains its original width when horizontally skewed.

When Untransformed Dimensions is used, the rectangle's width changes.

Freeform editing of floating image selections

Use the Freeform command to place floating image selections in freeform edit mode. When you put an image selection in freeform mode, rotate and skew it by dragging special handles.

To float a copy of a selection

1 With a paint object in edit mode, make a selection with the Marquee or Lasso tool. The selection can encompass the entire paint object.

2 Do one of the following:

- Choose Image > Select > Float.
- Ctrl-drag the selection. This moves the selection and puts it in freeform mode.



You can also paste an object into an image in edit mode. The object pastes into the image as a floating selection.

For more information on image selections, see "Working with image selections," page 25.9.

- **To put a floating image selection in freeform mode:** While a floating image selection is active, choose Effects > Freeform. Handles appear on the corners and sides of the floating selection.

- **To move a selection in freeform mode.** Place the pointer inside of the selection. The pointer becomes an arrow head. Drag to move an outline of the selection.

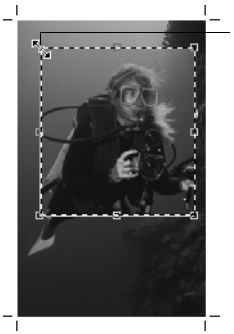
Rotating selections in freeform mode

In freeform mode, while the pointer is outside of the selection, the pointer is a curved line with an arrow at both ends. This is the rotation pointer.

Drag around the selection in the direction you want it to rotate. An outline of the selection rotates as you drag.

Rotation pointer





Scale pointer

✓ Tip
Press the Shift key to constrain the rotation to 15° increments.

Scaling selections in freeform mode

You can scale a floating selection in freeform mode by dragging the corner or side handles.

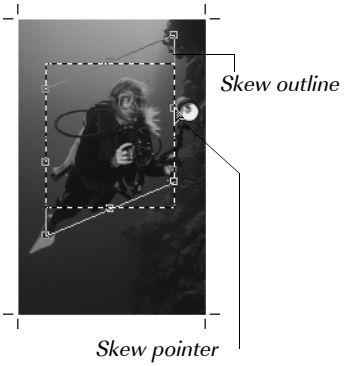
- **To scale a selection:** Point to one of the handles at the edges of the selection. The pointer changes to a straight line with an arrow at each end. Drag any of the handles. The selection scales as you drag.

    - If you drag a side handle, the scaling is constrained to the direction of the arrows in the pointer – the direction perpendicular to the handle side.

- If you drag a corner handle, the scaling is unconstrained unless you press the Shift key.
- Press the Alt key to mirror the scale on the opposite side of the selection.

Skewing selections in freeform mode

When a selection is in freeform mode, you can slant its shape by dragging the side handles with the Ctrl key pressed. Skewing a selection reshapes it by changing the relationship of the sides of the selection.



- **To skew a selection:** Press the Ctrl key and move the pointer over one of the side handles. The pointer changes to an arrow head. Drag the handle to skew the selection freely.
  - Press the Shift key to constrain the skew along the axis of the handle side.
  - Press Alt to have the opposite side of the selection skew to maintain its relationship to the side you are skewing around the center of the selection.

The modifier keys can be combined to produce both skewing effects simultaneously.

- **To end freeform editing:** Double-click inside the selection or press Enter twice. The floating selection is still active. Then double-click outside the paint object or press Enter twice to paste the pixels as defined by the floating selection into the image.

If you do not want to change your original image, press Esc to leave freeform mode. Canvas makes no changes to the image.

Rotating objects with the Rotate command

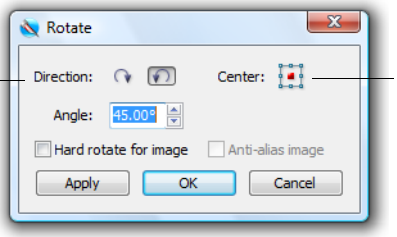
✓ Tip
You can also rotate objects by clicking the Rotate button in the Properties bar. Select a rotate option, then enter a degree value in the field, and press Enter.

For precise rotations, use the Rotate command to rotate selected objects in 0.01° increments around a specified center of rotation. This command is useful if you need to rotate multiple objects an exact amount.

1 Select the object you want to rotate.

2 Choose Effects > Rotate Right/Left > Other to open the Rotate dialog box.

Clockwise and counter-clockwise rotation buttons



Center of rotation edit box

3 In the Rotate dialog box, click the clockwise or counter-clockwise button to choose a rotation direction.

4 Enter the rotation angle in degrees in the Angle text box.

5 The Center edit box shows the center of rotation as a gray handle. To change it, click one of the black handles on the bounding box; the gray handle snaps to the new location.

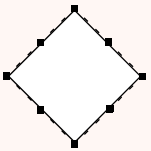
6 Click Apply to preview the settings, or click OK to implement the settings and close the dialog box.

Editing rotated objects

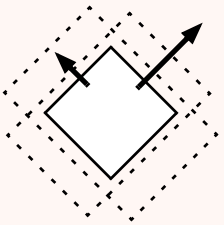
When you rotate an object, the object's bounding box also rotates, so you can reshape and resize the object in rotated space. If you drag a handle, the object's sides keep their rotated orientation. This prevents distortion of the original shape.

Rotated bounding box

The bounding box of a rotated square has the same orientation as the rotated object...

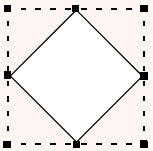


... so the object maintains its rectangular shape, shown by the dotted lines, when you drag the bounding box handles.

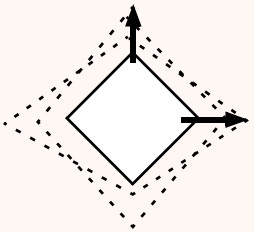


Unrotated bounding box

If you choose Convert to Paths, Canvas re-orients the bounding box of a rotated object...



... so the object's rectangular shape distorts when you drag a handle on the bounding box, as shown by the dotted lines.



Flipping objects

Flip objects horizontally, vertically, and both horizontally and vertically, with the Flip commands. You can flip individual objects, multiple selected objects, or grouped objects. When you flip a group object, objects included in the group flip around the axes of the group's bounding box.



Original



Flip > Horizontal



Flip > Vertical



Flip > Both Axes

- **To flip a selected object from top to bottom:** Choose Effects > Flip > Vertical. The Vertical command flips the selection's vertical coordinates over its horizontal axis.
- **To flip a selected object from left to right:** Choose Effects > Flip > Horizontal. The Horizontal command flips the selection's horizontal coordinates over its vertical axis.
- **To flip a selection around both axes:** Choose Effects > Flip > Both Axes. Canvas flips the selection's horizontal coordinates over its vertical axis and its vertical coordinates over its horizontal axis.

Scaling objects

The Scale command provides several options for enlarging or reducing objects. Scale by a percentage or ratio, horizontally and vertically. You can also scale text and stroke weights when you scale objects.

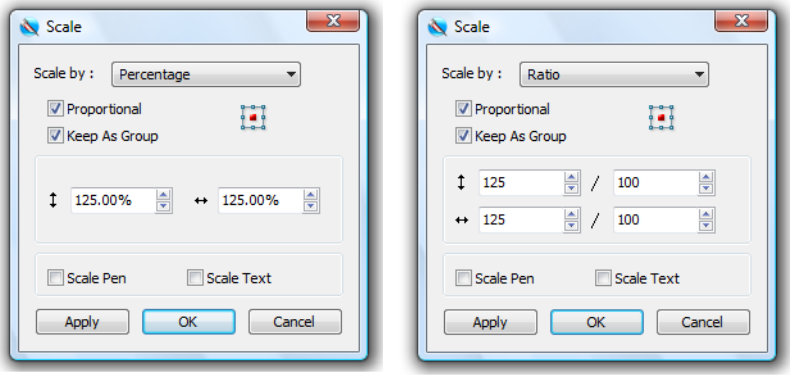
To scale an object

1 Select one or more objects.

2 Choose Object > Scale to open the Scale dialog box.

3 Select a scaling method in the Scale By menu. The configuration of the dialog box depends on the chosen method.

Depending on the Scale by method, the Scale dialog box may display different options.



Percentage Specify vertical and horizontal percentages. Scaling an object 150% is the same as increasing the object's size by a factor of 1.5.

Ratio Specify horizontal and vertical scaling factors as ratios by entering numbers in each set of two boxes; e.g., to scale an object to one-third its original height, enter "1" in the first text box, and "3" in the second.

✓ Tip
You can also scale an entire document when you print it, without changing the objects in the document, by specifying a scaling factor in the Print dialog box.

- **To scale an object vertically and horizontally by the same amount:** Select Proportional.
- **To maintain the proportion between an object's pen size and the overall size of the object:** Select Scale Pen.

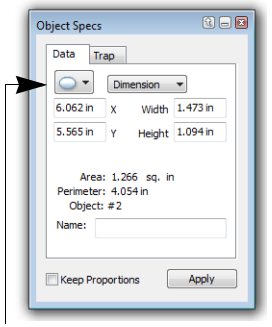
4 If one of the selected objects contains text, select Scale Text to change the size of the characters. Otherwise, text remains the same size.

5 Click Apply to implement the settings.

6 Click OK to scale the object.

Using the Object Specs palette

The Object Specs palette provides several important features for working with objects. It displays data for selected objects and lets you modify settings for selected objects.



Press to open Object Type palette

The Object Specs palette contains tabs labeled Data and Trap.

Tab	Use
Data	Create objects, and edit the size, position, and other data for a selected object.
Trap	Set printing options, including overprinting and trapping for color separations.

- **To display the Object Specs palette:** Choose Object > Object Specs. Change coordinates, dimensions, or other settings, and then click Apply to implement them.

To edit an object

Click on the Data tab to view and edit data for selected objects. The Data tab displays information for a selected object or group object. If you select a group object, you can change the group's size and coordinates, but not an individual object within the group.

1 On the Data tab, choose an object type from the Object Type palette. You can select rectangles, ovals, arcs, polygons, and lines.

2 Enter values for the object's size and position in the text boxes. The type of data you can enter depends on the object type.

3 Click Apply.

✓ Tip

When more than one object is selected, the boxes on the Data tab are not available. You can't edit the position or dimensions of multiple selected objects.

Data tab settings

This tab includes object size and position data and related options. Additional options are shown for text objects. The text options let you change the shape of a text object or change the way text wraps in its bounding box.

A For a selected object, shows the object type, usually an icon of the tool that created the object. To modify an object, select oval, rectangle, arc, line, or polygon.

B Select the type of data to display (see "Data display options," page 16.35).

When an object is selected, change the values in the text boxes to resize or reposition the selected object. If Keep Proportions is checked, Canvas maintains the proportion of the object if you change either the height or width.

C Position data. The type of data that appears in the boxes, and their labels, depends on the selected data display option (see "Position data," page 16.36).

Area. Shown when Canvas can calculate the area occupied by a selected object's bounding box. When you select text, the horizontal insets text box replaces the Area text box.

Perim. Shown when Canvas can calculate the perimeter, or distance around, a selected object's bounding box. When you select text, the vertical insets text box replaces the Perim text box.

Object name. Type a name for the object.

Object #. The object number assigned by Canvas.

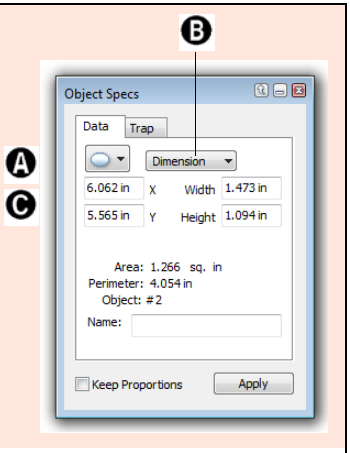
Keep Proportions. Select this option to keep an object's height and width proportional when you are editing the object's dimensions.

Apply. Click to apply the current settings. The Apply button changes to Create when no object is selected and you choose an object type to create.

Text object settings

Insets. Change the proportions of a text object's background. Type values, in pixels, in the text boxes to specify the horizontal and vertical size of the text object's background.

Change the shape of the text object's background to a rectangle, round rectangle, oval, or diamond.



Caption. Select or deselect to change the way text wraps in its bounding box. Text that is not captioned wraps to the next line based on the boundaries of the text's bounding box.

You can't use the Caption or Insets options with text that you created using the Path Text tool, or text that you converted to paths.

Data display options

Choose the data to display. Select Height/Width or Top/Bottom for all objects except lines. For lines, select Start/End, Delta V/H, or Length/Angle.

Height/Width Type values in the text boxes to specify the vertical and horizontal dimensions of the object.

Top/Bottom Type values in the text boxes to specify the position of the top, bottom, left, and right edges of the object, relative to the document rulers.

Start/End Type values in the text boxes to specify the position of the first and last endpoints of a line.

Delta V/H Type values in the text boxes to specify the position of the first endpoint, and the distance from the first endpoint to the last endpoint of the line.

Length/Angle Type values in the text boxes to specify the position of the first endpoint, and the length and angle of the line.

Position data

The type of data that is displayed depends on whether you choose Height/Width or Top/Bottom, Start/End, Delta V/H, or Length/Angle.

Left Type the horizontal distance from the ruler's zero point to the left edge of the object.

Top Type the vertical distance from the ruler's zero point to the top edge of the object.

Height Type the height of the object, relative to the top edge of the object.

Width Type the width of the object, relative to the left edge of the object.

Bottom Type the vertical distance from ruler's zero point to the bottom edge of the object.

Right Type the horizontal distance from the ruler's zero point to the right edge of the object.

St V Type a value to position the first endpoint of a line, relative to the vertical ruler's zero point.

St H Type a value to position the first endpoint of a line, relative to the horizontal ruler's zero point.

End V Type a value to position the last endpoint of a line, relative to the vertical ruler's zero point.

End H Type a value to position the last endpoint of a line, relative to the horizontal ruler's zero point.

Delta V Type a value to position the last endpoint of a line, relative (vertically) to the first endpoint of the line.

Delta H Type a value to position the last endpoint of a line, relative (horizontally) to the first endpoint of the line.

Length Type a value to specify the length of a line.

Angle Type a value to specify the angle of a line.

X Type a value to position a handle of a polygon, relative to the horizontal ruler's zero point.

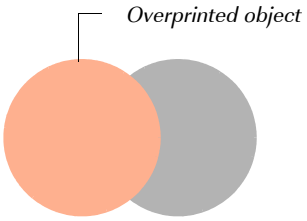
Y Type a value to position a handle of a polygon, relative to the vertical ruler's zero point.

Start Type a value to specify the starting point of an arc in degrees.

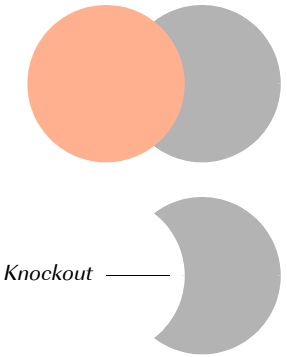
Delta Type a value to specify the length of an arc segment in degrees.

Diag Type a value to specify the roundness of the corners of a rounded rectangle.

Setting print properties for objects



Overprinting produces a color mixture where the orange circle overlaps the gray circle. This effect isn't visible on screen.



Without overprinting, the orange circle knocks out part of the gray circle.

Click on the Trap tab of the Object Specs palette to view the overprinting and trapping options for color separations. Click Apply to apply the settings to selected objects.

Overprinting in color separations

When you output color separations in Canvas, you can specify that an object should overprint, rather than knock out, objects behind it.

In color separations designed for commercial printing, a front object usually *knocks out* a hole where it overlaps other objects; however, you can apply the Overprint Object option to an object to prevent it from creating knockouts in objects behind it. This can compensate for registration problems on some printing presses.

For example, if you draw a cyan circle on a yellow background, Canvas knocks the circle out of the background in color separations so cyan and yellow don't mix in the circle. If you select the circle and use the Overprint Object option, the circle prints over a solid yellow background, and the cyan in the circle mixes with the background yellow, resulting in a green circle.

The effect of the Overprint Object option is not visible on screen. This effect is visible only in the printed output when you produce color separations. Verify the settings for a particular object by viewing the Trap tab in the Object Specs palette and then selecting the object.

Color mixing as described previously is not the primary reason for overprinting. It's more common for designers to overprint dark objects on lighter backgrounds as a way to prevent a gap from appearing between the colors if the press registration (alignment) isn't perfect.

To specify overprinting for objects

1 Select the vector or text objects to be overprinted.

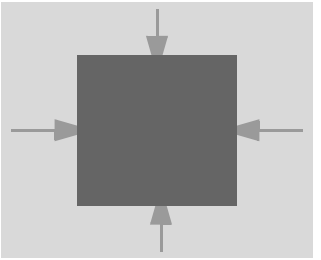
2 Select the Overprint Object checkbox on the Trap tab.

3 Click Apply. The appearance of the selected objects does not change on screen, but the objects will be overprinted in color separations.

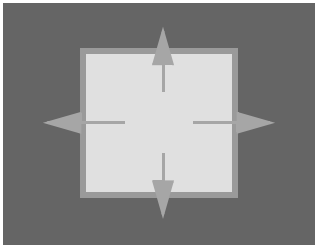
• **To remove overprinting:** Select the objects and deselect the Overprint Object checkbox. Then click Apply.

Trapping in color separations

When objects of different colors touch, there is the potential for an unsightly gap to appear between the colors if the piece isn't printed precisely aligned, or *in register*.



Choke trapping reduces the background knockout slightly to trap into a dark foreground object.



Spread trapping enlarges the stroke of a foreground object slightly to trap into a dark background object

Trapping is a technique that purposely distorts the shapes of objects in color separations where different colors meet. The slight distortion creates tiny areas called *traps* where colors overlap. The trap areas can help avoid the appearance of gaps if the page is printed slightly out of register.

Before you use trapping in color separations, determine how likely it is that the piece will not be printed in register. Consider how beneficial it will be to distort the shape of some objects to compensate for possible misregistration; e.g., trapping type can ruin the appearance of the text, and probably isn't necessary.

Trapping choices

Canvas lets you specify two types of trapping, Choke and Spread.

Choke trapping is used to make light background colors trap to dark foreground objects. Canvas creates a choke trap by slightly reducing, ("choking") the knockout area in the light background object; e.g., if a dark blue "A" is printed on a pale yellow background with choke trapping applied to the "A," the "A" remains exactly the same, but the knockout area in the yellow background becomes a slightly smaller "A" shape. The result is that some of the yellow overlaps the edges of the dark blue "A."

Spread trapping is used to make light foreground objects trap into dark backgrounds. The trap is created by slightly enlarging the foreground object without changing the knockout in the background color; e.g., if a light circle is printed on a dark background with spread trapping applied to the circle, the circle expands

slightly to overlap, or trap into, the circle knockout in the dark background.

Trapping limitations

Whenever possible, design illustrations to avoid certain trapping problems, and always discuss trapping with your service bureau and printer to avoid unnecessary expense and inferior results.

In Canvas, trapping is best applied to vector objects that use a solid pen stroke and solid pen ink color. The following limitations apply to trapping:

- Canvas will not create a choke trap for text.
- Canvas will not create a choke trap for a vector object that has no stroke or has a stroke that is not a solid pen stroke.
- Canvas will not create a choke trap for an object that has a gradient pen ink.
- Canvas will not create a spread trap for a paint object.

To specify trapping for objects

1 Select the object you want to trap. In most cases, this will be a foreground object that touches a highly contrasting color.

2 Click the Trap tab.

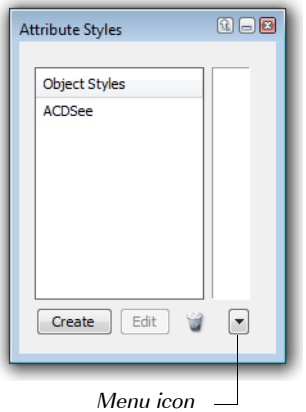
3 Select the Trap Object checkbox, and then click the Choke or Spread radio button (see "Choke trapping," page 16.38 and "Spread trapping," page 16.38).

4 Click Apply to set the trapping option for the selected object. No change is apparent in the object on screen, because the trap is created only when you print color separations.

- **To apply trapping to selected text:** You can apply trapping options to text that you select within a text object using the Overprint and Spread options in the Text > Style menu.

- **To adjust the trap size:** Before printing color separations, specify the trap size. Select the Separations options in the Print dialog box to change the trap size value.

Creating attribute styles



Illustrators and designers may often find themselves applying the same attributes to various vector objects within a layout. An attribute style is a set of attributes that you save and then apply to other objects. These styles help you maintain consistency and facilitate applying attributes.

Attribute Styles palette

With the Attribute Styles palette, you can create attribute styles and edit saved attribute styles and then reapply them to objects, rather than editing each individual attribute. You can even share attribute styles with others.

- **To open the Attribute Styles palette:** Choose Window > Palettes > Attribute Styles.

To create an attribute style

1 Open the Attribute Styles palette.

2 Select an object on which you want to base a style.

3 Click the Create button. The Define Style dialog box opens.

4 Enter a name for the style.

5 Select all the attributes that will be included in the style.

6 Click OK to save the style.

To apply an attribute style

1 Open the Attribute Styles palette.

2 Select the vector object to which you wish to apply the style.

3 Click on the style name in the palette to apply it.

To save attribute styles

1 Open the palette menu and select Save Styles.

2 Enter a name for the file.

3 Select a folder.

4 Click Save.

To load or append attribute styles

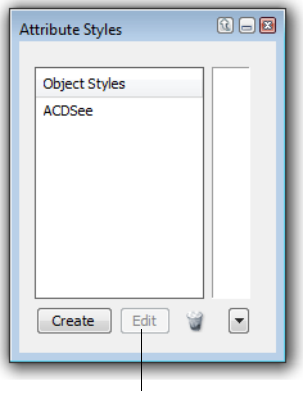
1 Open the palette menu and select Load or Append Styles.

2 Navigate to the folder and select the file.

3 Click Open.

To modify an attribute style

Note: Press Esc twice to ensure that no object is selected.



Edit icon

1 Select the style in the Attributes palette.

2 Click the Edit icon. The Edit Style dialog box opens.

3 Modify the existing attributes. Selected checkboxes indicate an existing attribute.

4 Define and add other attributes by first selecting their checkboxes and then using the popup palettes.

5 Click OK when finished.

To delete an attribute style

Note: Press Esc twice to ensure that no object is selected.

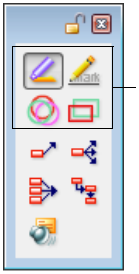
1 Select the attribute style to be deleted.

2 Click the trash can icon.

Attaching comments to objects and using Markup tools

Use the Comments & Markup function to attach written notes called *comments* to any object in a Canvas document. This can be useful for individuals and coworkers who share documents. Anyone who works on a document can use the Markup tools and attach multiple comments to any object, including paint, vector, and text objects.

Marking up a document


Markup tools

To facilitate group work or revision, Canvas has a complete palette of tools that you can use to mark up documents, the Markup & Redline tools. This functionality keeps the markups and comments with the original document, yet separate. Using the Markup tools doesn't alter the original document at all. Markups and comments can be easily created on another layer.

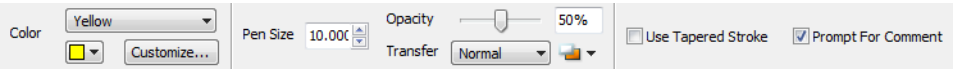
The Markup tools consist of four tools:

- Markup Pen tool, which creates a freeform line.

- Markup Highlighter tool, which creates a thick Bézier curve.
- Rectangle Redline tool, which creates a rectangle bounding box.
- Circle Redline tool, which creates an oval-shaped bounding box.

To use a Markup tool

1 Select the Markup Pencil tool, Markup Highlighter tool, Rectangle Redline tool, or Oval Redline tool. The tool settings appear in the Properties bar.



Color. Select a defined color ink from the menu for the pen stroke. You can also select an ink from the popup palette. To define color inks for the menu, click Customize. Name the ink to add it to the menu.

Note: If an ink from the popup palette is selected, Custom appears in the menu.

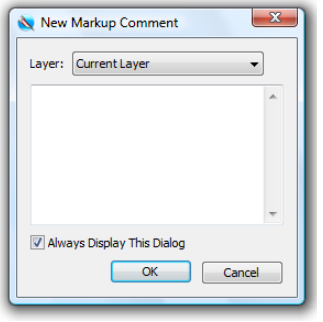
Pen Size. Select a pen stroke width (only available for Markup Highlighter, Rectangle Redline, and Oval Redline tools).

Opacity. Adjust the transparency of the markup object.

Use Tapered Stroke. Gives the stroke tapered ends.

Prompt For Comment. By default, this checkbox is selected to enable the New Markup Comment dialog box. Deselect the option if you don't want the dialog box to appear when using these tools.

Note: If you disable the New Markup Comment dialog box, you must use the text field in the Properties bar to enter your comment, if any.



2 Click-drag the crosshair where you want to create your markup.

3 Release the mouse and the New Markup Comment dialog box opens.

4 Open the Layer menu and select an option:

Current Layer The markup object will be on the current layer.

Markup Layer This option creates another layer named Markup Layer. The markup object will be on this layer.

My Markup Layer This option creates another layer with the initial of the user. This information is retrieved from the User Info in the Configuration Center.

5 Enter your comments, if any, in the field.

6 Click OK. The markup object is selected and its settings appear in the Properties bar.

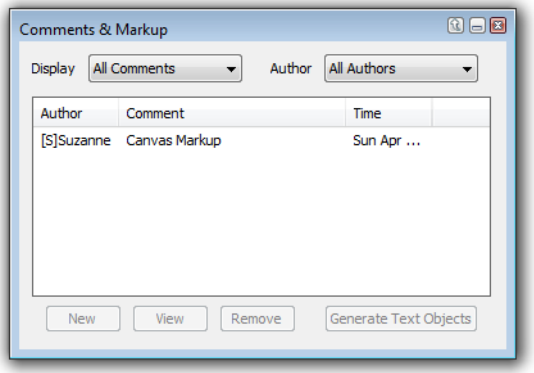


If you deselect Always Display This Dialog, the New Markup Comment dialog box doesn't appear when you create a markup. To enable this dialog box again, select the Prompt For Comment option in the Properties bar when a markup object is selected or created. Click the Display Palette button to open the Comments & Markup palette.

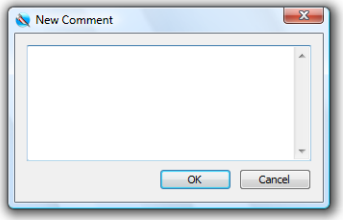
To attach comments to objects

1 Select an object.

2 Choose Object > Options > Comments & Markup to display the Comments & Markup palette.



3 Click the New button. The New Comment dialog box opens.



4 Type the comment text. When you finish, click OK to attach the comment to the selected object. The comment appears in the Comments & Markup palette.

5 Click New in the Comments palette to attach additional comments to the selected object.

A comment can contain up to 64 KB of text (about 65,500 characters). The text appears in a fixed size and typeface.

When you create comments, you can select, copy, cut, and paste text using the standard keyboard shortcuts. Spell checking, text formatting, and text colors cannot be applied to comments.

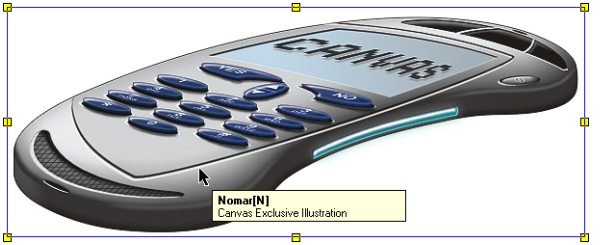
Viewing and editing comments

✓ **Tip**
Be sure that Show information tooltips is selected in the Functionality Options manager in the Configuration Center.

When you open a document, you can view all comments attached to objects and markup objects.

Note: You can edit comments that you create, but not those made by others.

When you select an object that has one or more comments attached to it, the object displays yellow selection handles. You can view comments by pointing to objects. When the pointer is on an object, the object's comments appear in a pop-up window.

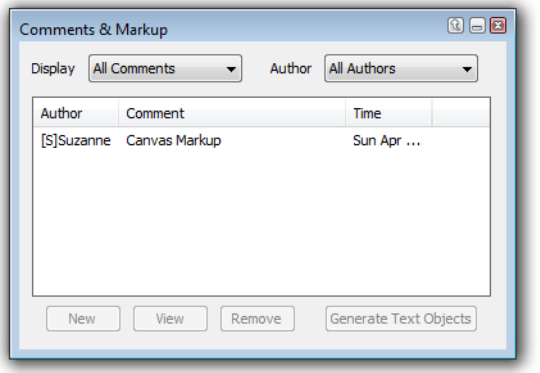


Object with comments

✓ **Tip**
If you select a markup object, click the Display Palette button in the Properties bar to open the Comments & Markup palette.

To view, edit, and delete comments

1 Choose Object > Options > Comments & Markup to display the Comments & Markup palette. All comments attached to objects and markup objects in a document appear in this palette.

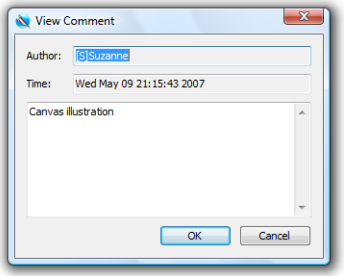


2 Open the Reviewer menu and select an author's name to display only that author's comments in the list. The scrolling list displays the first lines and the author's initials for each comment. The initials preceding comments are retrieved from the User Info in the Configuration Center.

- **To show all comments:** Choose All Reviewers.

3 Click a comment to select it. When you select a comment, Canvas selects the commented object or markup object in the document. Yellow selection handles appear around the object to indicate that the object has one or more comments.

- **To view, edit, or remove a selected comment:** Choose one of the following options:



View To view a selected comment, click View. The comment text appears in the View Comments dialog box. Select text and copy it to the Clipboard using standard keyboard shortcuts. You can edit your own comments in the View Comments dialog box, but you can't edit or remove others' comments.

When you view a comment that you can't edit, the dialog box appears grayed out.

If you changed a comment, click OK to save the changes or click Cancel to discard them and close the dialog box.

Note: If you select a markup object with an attached comment, you can view the comments in the Properties bar. You can edit your own comments in the Properties bar.

Remove Select a comment you created. Click Remove to delete the comment from the object and the Comments palette.

Comments remain attached to objects until you remove them. However, comments are not preserved by operations that convert objects to different forms. These operations include Knife, Combine, Extrude, Fractalize, Join, Make Composite, Convert to Paths, and Insert Picture.

Generate Text Objects Click this button to create text objects of any comments that are attached to objects or markup objects. The Comment Attributes dialog box appears.

Comment attributes

A Font

Name. Select a font family.

Size. Enter a value or use the scrollbox.

Color. Select a color ink for the text object.

Adjust the attributes using the Bold, Italic, and Underlined options.

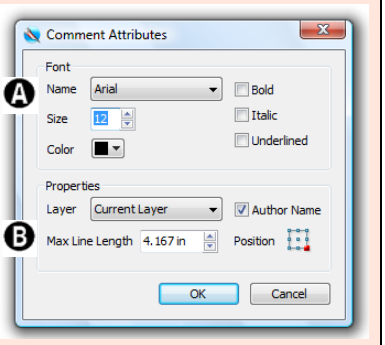
B Properties

Layer. Open the menu and select an option. Current Layer places the text object on the current layer. Markup Layer places the text object on another layer named Markup Layer. My Markup Layer places the text object on another layer with the initial of the user. This information is retrieved from the User Info in the Configuration Center.

Author Name. Select this checkbox if you want the author's name to appear beside the comment.

Max Line Length. Enter a value or use the scrollbox. The default is 2 inches.

Position. The position is in relation to the commented object's bounding box. Select an anchor point.



Object Properties



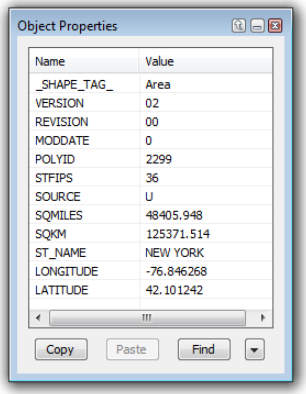
For many years, professional engineers and designers have used Canvas to create technical schematics, blueprints, and complex illustrations. Aerospace, biomedical, and other industries rely on the micron-precise measurements and CAD-like tools found within our integrated application. While the Canvas tool set and features have won praise from the technical illustrator, we have also listened to the needs of people involved in the manufacturing end of their respective business.

Canvas contains the ability to attach specific user-definable data to any object. This information is stored with the objects and can be viewed or edited from within Canvas.

Assigning Object Properties

The Object Properties function allows you to assign specific information to each component of a complex object. The properties of an object can include information that will allow you to efficiently track cost, inventory, location, and availability. As a result, those who design and manufacture items such as fuel pumps, jet engines or other sophisticated components can better manage production workflow.

Note: If you are working with GIS vector files, such as Shapefiles or Tigerfiles, the attribute information is available in the Object Properties palette. Click on an object and its information appears.



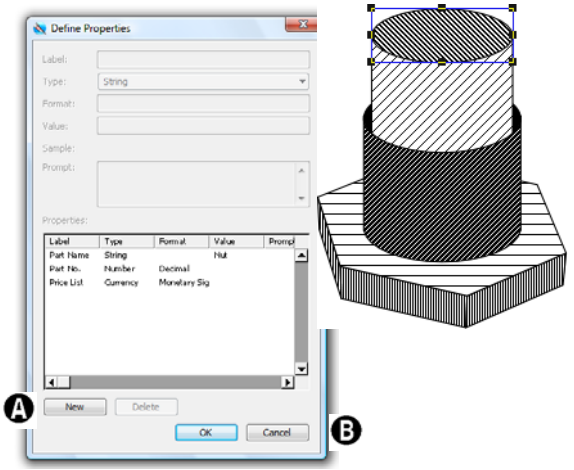
Attaching information to an object does not affect the size or appearance of the item. All data remains attached to the object and may be edited at any time within Canvas. Therefore, if the object is shared or used in another project, then the properties of that object are carried over into the new project.

- **To open the Object Properties palette:** Select a Canvas object and choose Object > Object Properties.

If the selected item does not have any properties assigned to it, then you will need to create some properties.

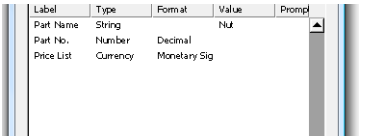
- **To assign properties to an object:** Open the palette menu and select Define Property to open the Define Properties dialog box. In this dialog box, click the New (A) button so that you can begin to define the properties of the object.

Let's begin by assigning values to components of a valve that will be manufactured.



Note: If the object is grouped, then you will need to ungroup it. This allows you to select the various individual items to which you wish to assign a property.

Once you complete each label, then click OK (B) to accept your entries. When created, all of the labels are listed in the Properties Panel. At any time, you can access and edit your entries by clicking on any of the properties that are listed in the Properties Panel.

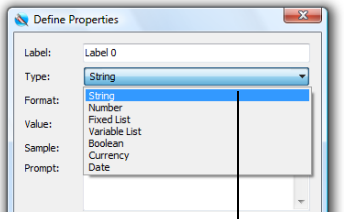


Label

In this field, you may enter the name of the property; e.g., Size, Weight, Location, Part Number, Tracking Code.

You can also attach multiple labels to each object. Doing so allows you to identify the object by using one of the assigned labels.

Next, select an option in the Type menu. This allows you to choose the search value for the object.



Type Drop Down Menu

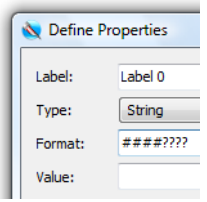
Type

The Type field has the following options: String, Number, Fixed List, Variable List, Boolean, Currency, or Date.

Once you choose a Type from the above options, you must establish the correct Format. The Format section provides details for each of the Type choices and its associated Format options.

Format

Assigning a format depends on which of the previously mentioned types were selected.



String - You can place just about anything that you want in this field. If a Format field is used, then it is possible to impose limits on what is entered, use only numbers, or specify n-number of characters. The following format modifiers are available for String:

"#" indicates number

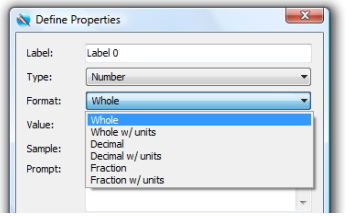
"X" indicates character

"?" indicates that you can assign any character

[any other character] indicates that this character will appear in the value string at that exact position and exactly as it is entered in the format.

An example would be assigning the value of:
"XXXXX XXXXX" to the handle of the object "Water Valve."
This value would not apply to "Gas Valve."

Using the symbols "####.##" means that "1234.12" is a valid entry; however, "1234.123" would not be a valid value for the object. It will return incorrect results during a search for an item. If a format is not entered, then any string will be accepted.



Format field in the Object Properties dialog box.

Number This option allows you to enter a numerical value for an object. To do so, you must use one of the following formats:

- Whole (e.g., 1)
- Whole with units (e.g., 1 kg)
- Decimal (e.g., 1.5)
- Decimal with Units (e.g., 5.1 kg)
- Fraction (e.g., 1/2)
- Fraction with Units (e.g., 1/2 kg)

To define a unit

1 When the Define Properties dialog box is open, set "Number" as the type.

2 Set the format to be one of those with units.

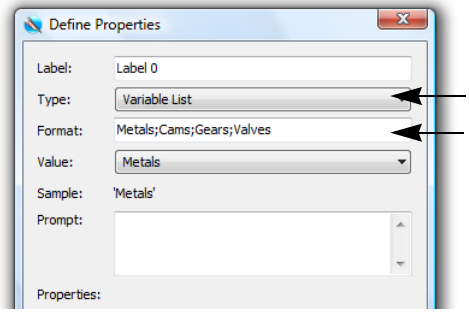
3 Enter a number followed by unit as a value; e.g., "100 kg". The unit will become the default for that property.

This means that if you were to enter the setting of "100 cm", then "cm" will become your default setting. Therefore, when you enter a new value for the property in the Object Properties palette, you will only have to enter the number for that property. The unit will automatically be appended to reflect the unit "cm." If you enter both a number and a unit and the unit differs from the default, then the entry will be rejected.

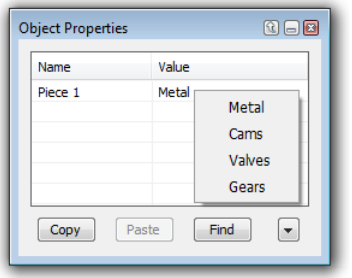
Note: If you do not specify a default unit for the property, then you will need to enter a number and a unit each time that you change the value. The advantage of not having a default unit is that you can enter a different unit without being constrained by the default setting.

Fixed List You can think of this as assigning a key word that can be used to search for items. Be certain to separate each word with a semicolon (;); e.g., "earth;wind;fire". After setting this property type, you should define a set of items that appear on the list of available values for the property.

Enter the desired values in the Format field; e.g., you may enter values such as "Earth;Wind;Fire" in the Format field. These entries will then appear on the list in the Object Properties palette.



You may add values to a Variable Option list. To do this, merely click on a table that has Variable List assigned as a format type, then type in the new value.



Variable List This option is the same as a fixed list except that you can enter new values at the time of assignment to the object.

After you define a set of values, you may want to add a new value to the set that appears in the Object Properties menu. To make these changes, you need only to enter a value in the Object Properties palette.

Boolean This is used when the value will be Yes or No. You may change the value to True or False, Positive or Negative, 0 or 1, etc.

Currency There are two format types for the currency property. They are Monetary Sign Leads (e.g., USD 100.00) and Monetary Sign Follows (e.g., 100.00 USD).

The default setting for the currency property is Monetary Sign Leads. This property is set in the same manner as the previously described numbers with units. You need only to enter a value and a monetary sign in the Value field to have a default monetary sign set. The sign that you enter will then become the default setting. It will be automatically added each time that you change a value.

If you enter a value and a monetary sign that differs from the default, then the change will be rejected. If the default sign was not defined, then you have to enter a number and a monetary sign each time that you change the value of the property. An advantage of not having a default monetary sign is that you are not constrained to the use of the default setting when entering a different sign.

Note: A monetary sign must always be present in the value when working with currencies. If there is not a default setting, you must enter a number and the monetary sign.

Date The Date property can be set in any of six different formats. They are grouped into two major format types:

- **Full Date formats** - This setting forces you to set a date which consists of a two-digit day, two-digit month, and four-digit year; e.g, for February, you must enter "02" instead of "2". Therefore, February 7th, 2001 could be entered as 02/07/2001.
- **Short Date formats** - Using this setting the date will consist of either a one-digit or two-digit day and a one-digit or two-digit month. A two-digit year will always be required. This means that zero ('0') will not be used as the first number for month or day; e.g., February should be represented as "2" (not as "02"); however, zero will be accepted as the first number of a year. This means that you may enter 2001 as "01". Therefore, February 7th, 2001 could be entered as 2/7/01.

Each of the previously discussed sets have three separate formats:

month/day/year (represented in the palette as "03/29/1999" and "3/29/99" respectively)

day/month/year (represented in the palette as "29/03/1999" and "29/3/99" respectively)

year/month/day (represented in the palette as "1999/03/29" and "99/3/29" respectively)

Use the forward-slash (/) to separate the month, day, and year; however, typing the forward-slash is not required; e.g., you may enter a the following string of numbers, "03291999," and Canvas will automatically separate them and create string value "03/29/1999" as long as it conforms to the format. However, you should be aware that a confusing situation can occur when using short date formats; e.g., if you wish to enter a date of January 23rd, 1999, and expect it to appear as "1/23/99", enter at least one forward-slash character in the string so that Canvas can resolve the entry. In our example, typing the entry as "12399" will resolve entry as "12/3/99". In such a case at least one forward-slash character (/) should be typed; e.g., "1/2399"). Dates not conforming to format rules will be rejected.

Value

Allows you to enter a default value for an object.

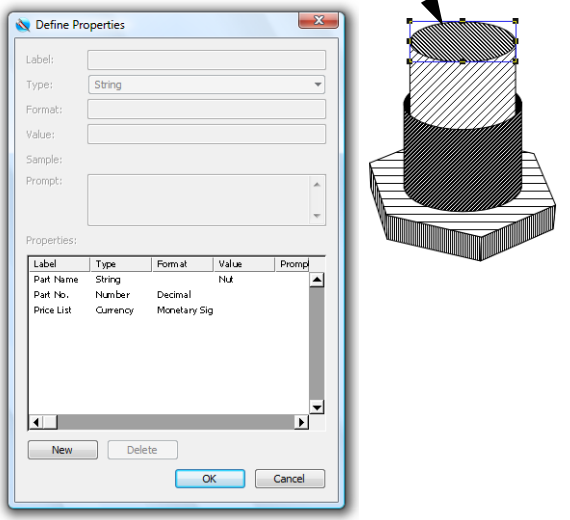
Prompt

A message or other data that is entered here will be displayed whenever you place the pointer over the property name in the Object Properties palette.

Once you have completed entering all of the properties to the object, click OK. When the Object Properties palette is active, all assigned properties will appear in the palette whenever you select the object.

> **✓ Tip**
> To use this feature, select the Show Information Tooltips checkbox in the Functionality options in the Configuration Center.

Selected object properties list



Adding, modifying, and deleting properties

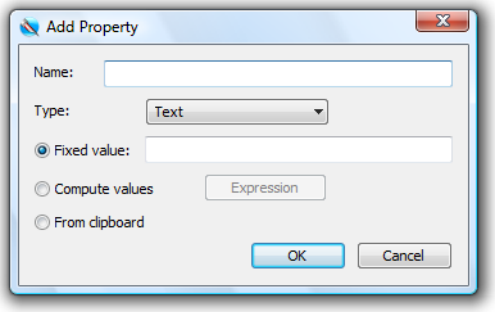
You can modify, delete, or add new properties. Although it is possible to add a property to two or more selected objects, you can only delete or define properties while one object is selected.

To add a property to an object or objects

1 Open the palette menu and select Add Property to open the Add Property dialog box.

✓ Tip

If you have Canvas GIS+, the palette menu contains additional options: Select by Property, Table View, Statistics, and Calculate Value (see "GIS+" on page 39.1).



2 Enter a name in the Name field. In the Object Properties Table View palette, a new column is created with this Name.

3 Select either Text or Numeric from the Type menu.

4 Enter the appropriate value in the Value field field.

Note: The Compute values and Expression feature are for users that have Canvas GIS+ (see "GIS+" on page 39.1).

Compute values. Select this checkbox if you want to create an expression.

5 Click the Expression button to open the Expression Builder dialog box (see "Expression Builder" on page 39.44). If you select Numeric, the result of the expression must be numeric as well.

To delete a property

1 Open the Object Properties palette

2 Select the property in the palette.

3 Open the palette menu and choose Delete Property.

To create common properties for objects

When two or more objects are selected, the list of properties that are common for all of those objects is shown. Working with common properties is similar to working with a list of properties from one object.

1 Select two or more objects to which you want to assign common properties.

2 Open the palette menu and select Add Property to open the Add Property dialog box (see "To add a property to an object or objects" on page 16.52).

To modify object properties

1 Select an object that has already defined properties.

2 Open the Object Properties palette menu.

3 Select Define Property to open the Define Property dialog box (see "Assigning Object Properties" on page 16.46).

To find all objects that share an identical property

1 Select the property item in the Object Properties palette that objects share.

2 Click the Find button and all objects that contain that property item are selected.

To copy property items to another object

1 Select the object whose properties you want to copy.

2 Then, click the Copy button.

3 Select the other object and click the Paste button. The objects now share identical properties.

II

DRAWING & VECTOR EFFECTS

CHAPTER 17

DRAWING BASICS

This chapter describes how to draw and resize vector objects. The Canvas drawing tools let you easily draw basic shapes — lines, rectangles, ovals, and arcs — and create precise squares, circles, and straight lines. Specialized tools let you draw grids, stars, polygons, concentric circles, cubes, and spirals.

Drawing basic shapes

You can use the same basic technique with most Canvas drawing tools. See the table titled "Basic drawing procedures" on page 17.2 for the procedures you use to draw basic shapes. Instructions for the tools that let you draw grids, stars, polygons, concentric circles, cubes, and spirals appear later in the chapter.



A Line
B Rectangles
C Paths
D Ovals and arcs
E Markup

Applying inks and strokes

When you draw a vector object, Canvas applies the current ink and stroke settings to the objects you draw. The inks and stroke icons in the Toolbox show a preview of the current settings. Change these attributes before or after you draw an object (see "Inks: colors & patterns" on page 14.1 and "Strokes: outline effects" on page 15.1).

Selecting tools in the Toolbox

Tools for drawing lines, rectangles, ovals, and arcs are grouped in various tool palettes in the Toolbox. The current tool is selected in the Toolbox (see "Tool palettes," page 9.6).

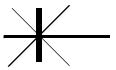
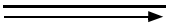
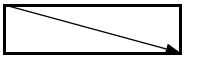
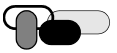
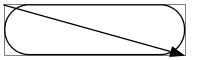
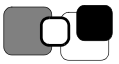
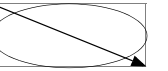
- **To open a tool palette to select another tool:** Click the current tool icon.
- **To float a tool palette:** Press Shift and drag it away from the Toolbox (see "Viewing the Smart Toolbox," page 9.5).

Drawing objects from the center

You can draw many vector objects starting from the object's center by pressing a modifier key as you draw. Position the pointer where you want the object's center to be, press Ctrl and drag away from the center to draw the object.

When you draw an object from the center, press Shift at the same time if you want to also constrain the object's bounding box to a square. Use this technique to draw a perfect square or circle from the center outward.

Basic drawing procedures

Object		Tool	Procedure	
	Lines	Line tool	Drag from the starting point to the end point in any direction	
	Lines at a 45° angle (horizontal, vertical, or diagonal)	Line tool	Press Shift and drag from the starting point to the end point	
	Rectangles	Rectangle tool	Drag from one corner to the opposite corner	
	Squares	Rectangle tool	Press Shift and drag from one corner to the opposite corner	
	Rounded rectangles	Rounded Rectangle tool	Drag from one corner to the opposite corner	
	Rounded squares	Rounded Rectangle tool	Press Shift and drag from one corner to the opposite corner	
	Ovals	Oval tool	Drag from one corner to the opposite corner of the oval's bounding box	
	Circles	Oval tool	Press Shift and drag from one corner to the opposite corner of the circle's bounding box	
	Arcs	Arc tool	Drag from one corner to the opposite corner of the arc's bounding box	
	Circle-segment arcs	Arc tool	Press Shift and drag from one corner to the opposite corner of the arc's bounding box	

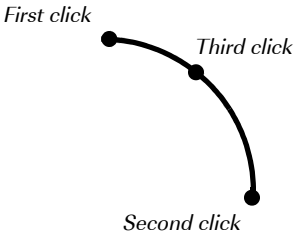
Drawing arcs by radius and by 3 points

The Arc Radius tool draws an arc based on a center point and radius that you set. The Arc 3 Points tool draws an arc through

three points that you set. Both tools draw arcs with the current fill ink, pen ink, and stroke.

To edit arcs, see "To change the length of an arc" on page 17.5.

The Arc Radius tool and Arc 3 Points tools are located with the Oval and Arc tools.



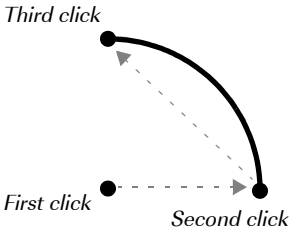
To draw arcs by 3 points

1 Select the Arc 3 Points tool. Click in the document to set one endpoint of the arc.

2 Move to the second endpoint of the arc. A line extends from the first endpoint. Click to set the second endpoint.

3 Move to a point on the perimeter of the arc. A line indicates the chord from the second point, while the arc expands or contracts as you move the pointer.

4 Click to set the perimeter point and finish the arc.



To draw arcs by radius

1 Select the Arc Radius tool. Click in the document to set the center of the arc.

2 Move to one endpoint of the arc. A line extends from the center and indicates the arc's radius. Click to set the endpoint.

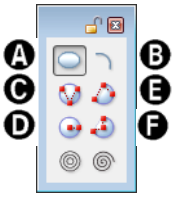
3 Move to the second endpoint of the arc. An arc segment extends from the first endpoint and indicates the arc's length.

4 Click to set the second endpoint and finish the arc.

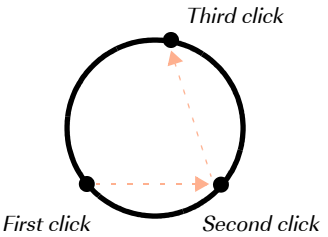
Drawing circles by radius and by 3 points

The Circle Radius tool draws a circle from a center point and a radius that you set. The Circle 3 Points tool draws a circle through three points that you set. Both tools draw circles with the current fill ink, pen ink, and stroke.

The Circle Radius and Circle 3 Points tools are located with the Oval and Arc tools.



A Oval
B Arc
C Circle 3 Points
D Circle Radius
E Arc 3 Points
F Arc Radius



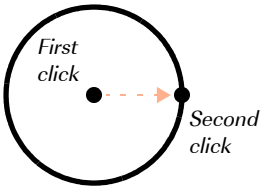
To draw circles by 3 points

1 Select the Circle 3 points tool. Click in the document to set a first point on the circle's circumference.

2 Move to a second point on the circle's circumference. A line indicates the chord from the first point as you move the pointer. Click to set the second point.

3 Move to a third point on the circumference. A line indicates the chord from the second point, while the circle expands or contracts as you move the pointer.

4 Click to set the third point and complete the circle.



To draw circles by radius

1 Select the Circle Radius tool. Click in the document to set the center of the circle.

2 Move to anywhere on the circumference of the circle. A line extends from the center and indicates the radius, while the circle expands or contracts as you move the pointer.

3 Click to set the circumference and complete the circle.

Resizing and reshaping vector objects

You can resize and reshape a vector object by changing the size and shape of the object's bounding box. You can also change the length of arc segments and the corner radius of rounded rectangles. These techniques are described in the following section.

You can also edit most vector objects by changing the anchor points and segments that form their paths. For information on these editing techniques, see "Editing object paths" on page 18.7.

To resize an object's bounding box

When you drag a handle on a vector object's bounding box, you change the height or width (or both) of the bounding box. This also changes the size (and possibly the shape) of the object; e.g., if you select a circle and drag a side handle to make the bounding box wider, the circle becomes an oval that is wider than it is tall.

1 Choose a Selection tool.

- Use the filled arrow to select a single object (including a group object).

- Use the hollow arrow to select an individual object within a group object.

2 Click the object to select it. Handles appear on the object's bounding box.

3 Drag a handle, as described below, to resize the object.

To change	Do this
Height	Drag the top or bottom handle
Width	Drag a side handle
Height and width	Drag a corner handle
Height and width proportionally	Press Shift and drag a corner handle
Symmetrically (from center)	Press Ctrl and drag a handle
Symmetrically and proportionally	Press Ctrl-Shift and drag a corner handle

Maintaining object proportions

When you resize vector objects and want to maintain the object's height-to-width ratio, you have three options:

- Press Shift and drag a corner handle to resize the object proportionally.
- Use the Scale command and select the Proportional option in the Scale dialog box. This keeps the vertical and horizontal scaling factor in the dialog box equal.
- Use the Scale control in the Properties bar. Click the Scale button and select Scale Proportional. Then enter a value in the width or height field.
- Use the Objects Specs command and select the Keep Proportions option in the Object Specs palette. Canvas keeps the object proportional if you change an object dimension in the Object Specs palette.

To change the length of an arc

1 Select the arc. Round handles appear near the beginning and end of the arc segment.

2 To shorten the arc, drag the round handle back over the arc. To lengthen the arc, drag the round handle to continue the arc segment.

You can also adjust the length of an arc by changing its Start angle and Δ values in the Properties bar or Object Specs palette.

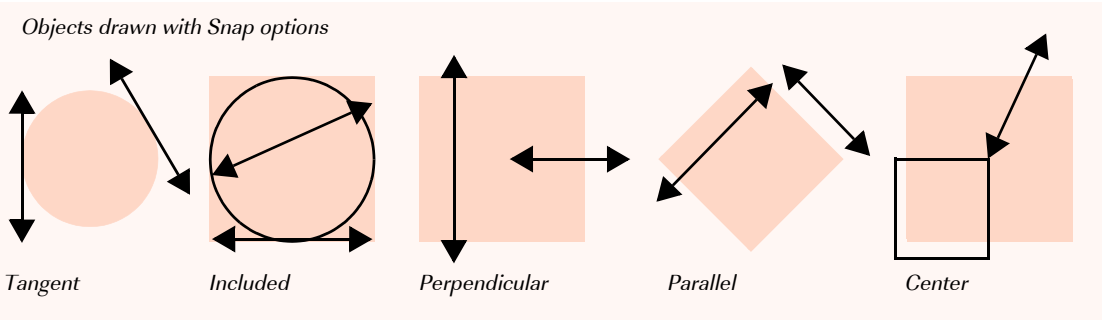
To change the corner radius of a rounded rectangle

1 Select the rounded rectangle. A round handle appears near the lower-right corner of the rectangle.

2 Drag the handle to change the corner diameter. You can also adjust the corner radius in the Properties bar or use the Diag setting in the Object Specs palette.

Drawing with Snap options

Snap options can help you draw objects in precise positions relative to other objects; e.g., use Snap options to draw lines that are parallel or perpendicular to other lines, to draw circles contained inside other objects, and to start drawing from the center points of objects. You can also draw guide lines that run to a vanishing point for illustrating perspective.



Snap options appear in the context menu, in a Snap submenu. You can select Snap options when you use the following tools: Line, Smart Lines, Oval, Circle 3 Points, Circle Radius, Rectangle, Rounded Rectangle, Arc, Arc 3 Points, Arc Radius, Curve, Polygon, Text, Spiral, GridMaker, and Annotations.

Snap options are most useful when you draw with the Line tool. You can draw lines to be parallel, tangent, or perpendicular to

other objects. You can also snap lines to start at the center of an object, and constrain lines to the interiors of objects.

Snap options (especially the Center and Included options) are also useful for drawing ovals, rectangles, and arcs. For these objects, some Snap options constrain the first point you draw; other Snap options constrain the start and end points when you draw an object.

To use Snap options

1 Select the Line tool or another tool (the available tools are listed previously).

2 Point to the object to which you want to snap. (To use the Vanishing Point option, skip this step; you do not need to point to an object.)

- **To draw parallel to a line:** Place the pointer anywhere on the line.
- **To draw parallel to a rectangle or polygon:** Point to the side to which you want to draw parallel.
- **To draw perpendicular to an object:** Point to the side to which you want to draw perpendicular.
- **To snap to the center of an object:** Place the pointer anywhere inside the object.

3 Right-click to open the context menu and choose an option (described below) in the Snap submenu.

4 If you chose Parallel or Perpendicular, a reference line appears. Move the mouse and then click to set the reference line.

    - For the Parallel option, a dialog box appears. You can accept or change the indicated offset from the object, and then click OK to continue.

5 Move the pointer to where you want to start drawing. Depending on the tool you are using, either drag to draw an object, or click to set the points of the object.

Note: Objects that should be two-dimensional might appear one-dimensional if you try to draw using certain Snap options; e.g., if you snap a rectangle to a line using the Included option, two opposite corners of the rectangle will snap to the line. If the line is vertical or horizontal, the rectangle will appear as a line.

Snap submenu options

To choose a Snap option, make sure the pointer is on the object or the object side that you want to use as a reference, then open the context menu and choose an option in the Snap submenu.

Parallel Lets you set a reference line parallel to a line or the side of an object. After selecting this option, move the mouse to position the reference line, then click to set it. In the dialog box that appears, you can enter the distance you want the reference line to be offset from the object. Click OK to continue. Begin drawing and the object will snap to the reference line.

Perpendicular Lets you set a reference line perpendicular to a line or the side of an object. After selecting this option, move the mouse to position the reference line, then click to set it. Begin drawing and the object will snap to the reference line.

Tangent Lets you set a reference line tangent to a circle, an oval, or an arc. After selecting this option, move the mouse to position the reference line, then click to set it. Begin drawing and the object will snap to the reference line.

Included Snaps an object's start and end points to the outline of an object or to a line. For example, you can use this option to snap the bounding box of a circle to the inside of a rectangle.

Center Snaps the first point you draw to the center of an object or a line.

Vanishing Point Snaps the first point of an object to the document's vanishing point. If you draw with the Line tool, the line will snap to the vanishing point and run to the location of the pointer when you begin dragging.

There is one global vanishing point in a document. The vanishing point is used by the commands in the Effects > Perspective submenu as well as the Snap > Vanishing Point command. The default vanishing point is at ruler coordinates 0,0. You can use the Effects > Perspective > Vanishing Point command to apply perspective to selected objects and establish the vanishing point. Using the 1 Side and 2 Sides commands will also affect the location of the document's vanishing point.

✓ **Tip**
You can draw perspective lines with the Vanishing Point option, and make the lines into alignment guides with the Object > Make Guide command.

Drawing by numbers

Several drawing tools give you the option of entering dimensions to draw objects precisely. This method can be easier than dragging

the mouse and watching data in the Properties bar to draw objects to precise dimensions.

✓ Tip
You can also enter values in the Properties bar for some Path tools.

You can enter dimensions in the Properties bar when you use the Oval, Arc, Rectangle, Rounded Rectangle, Line, Annotations, Multigon, Concentric Circles, and Spiral tools. You can enter the X/Y coordinates, width, height, or other values, and then click Create in the Properties bar to draw the object. With these tools, you can still drag the mouse to draw interactively.

Note: You can also establish precise dimensions and locations for any object in a document with the Data tab in the Object Specs palette.

To draw objects with the Properties bar

1 Select one of the previously mentioned tools. The related value fields appear in the Properties bar.

Properties bar with Arc tool selected.



Click a handle



2 Select a reference point by clicking a handle in the bounding box icon; e.g., to center an oval where you clicked in a document, for example, click the center handle in the bounding box illustration.

3 Enter dimensions or other values in the Properties bar (see "Using specialized drawing tools," page 17.10 for the related dimensions and values).

Ovals and rectangles Enter height and width values. For rounded rectangles, also enter the corner radius.

Lines Enter the distance and angle from the point you clicked to the second point. Or, enter the horizontal (X) and vertical (Y) distance to the second point.

Arcs Enter the width and height, the starting point in degrees, and the angular length of the arc.

4 Click Create to draw the object.

Using specialized drawing tools

Several specialized drawing tools let you quickly create complex shapes in Canvas. Drawing grids, stars, polygons, concentric circles, cubes, and spirals is as easy as drawing rectangles.

The tools shown in the following table create specialized vector objects.

Use this tool	to draw this
Concentric Circles	Nested circles or ovals
Cube	Square and rectangular boxes in isometric views
GridMaker	Rows and columns of boxes
Multigon	Stars and complex polygons
Spiral	Lines in spiral patterns
Annotations	Callouts and charts

In most cases, you can treat these vector objects like all others. You can move them and resize their bounding boxes. They can be rotated, flipped, and scaled. You can apply strokes, pen inks and fill inks to them; however, most of these objects are compound objects, which means that they are made up of separate objects. Therefore, some inks and other effects appear differently when applied to these objects than to simple vector objects like rectangles and ovals.

Some of the specialized objects have unique editing features. For example, you can twirl the points of a star, star outline, or framed star by dragging special handles. You can also specify the number of points of a star, the number of rows and columns in a grid, the number of rings in concentric circles, and the number of revolutions in a spiral. You can draw a cube with or without a perspective effect. Methods for drawing and modifying all of the specialized objects appear with the individual tool descriptions on the following pages.

You can also convert most specialized vector objects to paths, which lets you edit the objects' anchor points and segments (see "Converting objects and text to paths" on page 18.24).

Concentric circles

The Concentric Circles tool draws nested rings of ovals or circles. Set the number and spacing of the rings before or after you draw concentric circles.

To use the Concentric Circles tool



1 Select the Concentric Circles tool.

2 Drag to draw a bounding box that defines the size of the concentric circles object. A rectangular bounding box creates concentric ovals; a square bounding box creates true circles.

3 When you finish, the concentric circles object is selected.

- **To draw true concentric circles:** Press Shift to constrain the bounding box to a square when you drag the Concentric Circles tool.

- **To draw from the center:** Press Ctrl to draw from the center outward with the Concentric Circles tool. Press Shift also to draw perfect circles outward from the center.

To edit Concentric Circles object

You can change the number of rings as well as spacing of an existing Concentric Circles object.

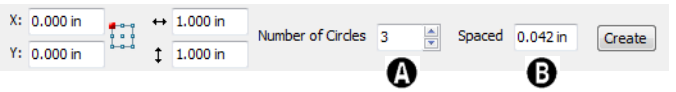
1 Select the Concentric Circles object. The related values appear in the Properties bar.

2 Adjust the settings as described in the next section. Press Enter to apply the settings to the object.

To configure the Concentric Circles tool

Before you draw an object, select the Concentric Circles tool to make the settings appear in the Properties bar. Use these settings to configure the Concentric Circles tool before you draw with it, or to change the configuration of an existing Concentric Circles object.

Properties bar with Concentric Circles tool selected.



A Enter the number of circles you want in the Concentric Circles object.

B Enter the number of points between each circle. Zero will evenly space the circles.

Drawing cubes



The Cube tool draws 2D cubes using the current object attributes.

To draw a cube

1 Select the Cube tool.

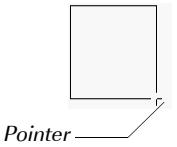
2 Drag to draw the rectangular back face of the cube. To constrain the faces of the cube to perfect squares, hold down the Shift key while drawing the back face.

3 Release the mouse button when the back face of the cube is set as you want; an unanchored cube then follows the pointer.

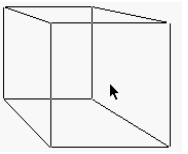
4 Position the cube so it appears at the length and angle you want, and then click to anchor it.

- **To give the cube a perspective effect by enlarging the front face:**

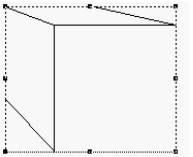
Hold down the Alt key before you anchor the cube.



Drawing the back face of the cube

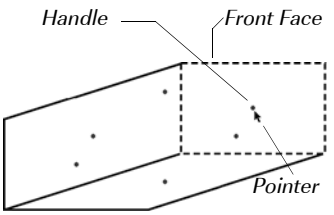


Positioning the front face of the cube



Finished cube selected

To edit cubes



A cube in edit mode

To change the height or width of a cube, click the cube to select it, and then drag a corner handle. To reshape a cube by moving a side, double-click the cube to place it in edit mode. A black circular handle appears on each of the six faces of the cube.

When you point to a handle, the outline flashes on the corresponding side of the cube. You can drag the handle to move that side. Click outside the cube to leave edit mode.

Drawing spirals



The Spiral tool draws a smooth, spiraling curve. You can set the number of spiral turns before or after you draw a Spiral object.

1 Select the Spiral tool.

2 Drag diagonally to specify the size of the spiral curve.

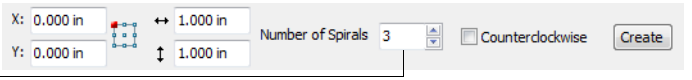
- **To create a circular spiral:** Press Shift and drag.

To configure the Spiral tool

1 Select the Spiral tool. The settings appear in the Properties bar.

2 Set the number of spirals and the spiral direction.

Set the number of turns (maximum 35) in the spiral



- **To change the number of spirals in an object:** Select the Spiral object. In the Properties bar, change the number of spirals and press Enter.

Drawing grids

The GridMaker tool draws grids of rows and columns. Set the number of rows and columns before or after you draw a grid object.



1 Select the GridMaker tool.

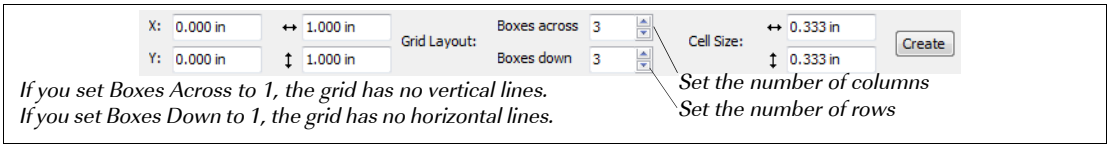
2 Drag diagonally to define the grid's bounding box.

- **To create a square grid:** Press Shift and drag.

To configure the GridMaker tool

1 Select the GridMaker tool. The settings appear in the Properties bar.

2 Set the number of boxes comprising the grid as well as the cell size.



- **To modify grid object:** Select the Grid object to make the settings appear in the Properties bar. Change the number of boxes or cell size and press Enter.

To separate a grid into lines

Adjust the individual lines that comprise a grid by converting it to a path and then ungrouping it.

1 Select the Grid object and choose Object > Path > Convert to Paths.

2 Choose Object > Ungroup. The grid object separates into individual lines.



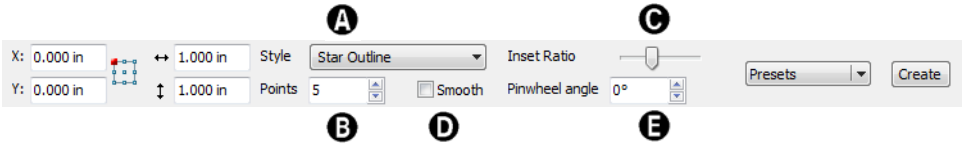
Drawing with the Multigon tool

Use the Multigon tool to draw all types of multi-sided objects, including triangles, hexagons, pentagons, octagons, stars, circular starbursts, and similar shapes. To set the number of sides and the style of a multigon, configure the Multigon tool before you draw.

- **To draw with the Multigon tool:** Select the Multigon tool. Drag diagonally to define the multigon's bounding box. To make the bounding box square, press Shift and drag.

- **To configure the Multigon tool:** Select the Multigon tool. The settings appear in the Properties bar. Set the multigon style and other options (described next) and press Enter.

Style	Appearance
Frame	No interior lines
Framed Star	Combination of Frame and Star objects
Spoke	No sides connecting the spoke points
Star	Points connected by interior lines
Star Outline	Multiple points with no interior lines
Wheel	Combination of Frame and Spoke objects



Multigon settings

The available options depend on the selected multigon style.

A Choose a preset style in the pop-up menu.

B For stars, framed stars, and star outlines, enter the number of star points from 3 to 100. For other styles, enter the number of sides from 3 to 100.

C Drag the slider to change the interior area of stars, framed stars, and star outlines.

D Turn this option on to smooth the object's angles.

E For stars, enter a value of more or less than 0 degrees to bend the points. Negative values bend the points counterclockwise.

To save custom Multigon settings

Save Multigon settings so you can use them later. In the Properties Multigon dialog box, press the triangle at the lower-left to save, select, and delete custom multigon styles.

- **To save multigon settings:** Choose Save Shape. Type a name for the shape and click OK. The name appears in the pop-up menu.

- **To delete a style:** Choose Delete Shape. In the dialog box, choose the shape name you want to delete and Click OK. You can't delete any of the built-in styles.

Note: When you save and delete styles, they remain saved or deleted whether you click OK or Cancel to close the Multigon dialog box.

To edit Star Multigon objects

You can interactively edit Star Multigons (framed star, star, and star outline styles) to adjust the twirl and radius of the object's points. The following procedures do not apply to frames, spokes, or wheels.

1 Double-click the Star Multigon to put it in interactive mode. An outer handle and inner handle appear on one point of the star.

- **To change the length of the star points:** Drag the outer handle inward or outward from the center of the star.

- **To twirl the points:** Drag the handle clockwise or counterclockwise.

- **To change the position of the inner points:** Drag the inner handle inward or outward from the center.

2 Press Esc or double-click outside the object to end interactive editing.

Making manual registration marks



Use the Registration Mark tool to manually enter registration marks around a graphic for which you intend to print separations. Use the Registration Mark tool for the following reasons:

- The size of the graphic occupies the printable area, therefore preventing the print separation marks from appearing.
- You layout different graphics on a single sheet and plan to print each graphic individually.

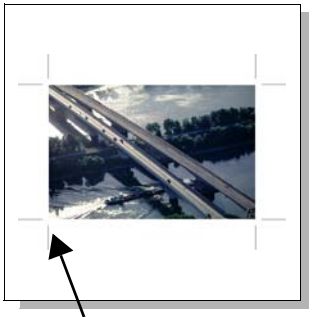
Define the appearance of the registration marks via the settings in the Properties bar. Select the Registration Mark tool to make these settings appear.

Appearance options (the default appearance is White fill)



Size selector (the default size is 72 pts)
Minimum size is 8 pts &
Maximum size is 288 pts

Placing crop marks



Crop marks

For print production, you can place crop marks around specific objects in your document. This is useful when you want to control the exact placement of crop marks, or you want to output several illustrations with crop marks around each illustration on one page.

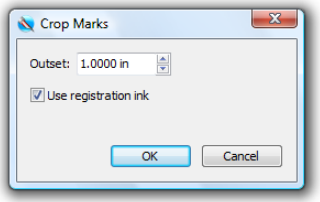
Crop marks are short vertical and horizontal lines that indicate the border where an illustration or page can be trimmed.

When you use the Crop Marks commands, Canvas draws the crop marks as vector lines on the current layer in the document. Each crop mark consists of two lines. You can select the lines and perform operations on them as you would other vector objects.

To place crop marks

1 Select the objects you want to place crop marks around. You can select one or more objects of any type.

2 Choose Object > Options > Crop Marks.



3 The Crop Marks dialog box appears. In the Outset box, enter the distance you want the crop boundary to be from the selection.

- If one object is selected, the selection boundary is the object's bounding box.
- If more than one object is selected, the selection boundary is the smallest rectangle that would enclose all the selected objects.

4 Select the Use Registration Ink option to assign Registration ink color to the crop marks. Registration ink appears black, but it prints on all plates when you output color separations. This option should be selected if you want the crop marks to print on all plates.

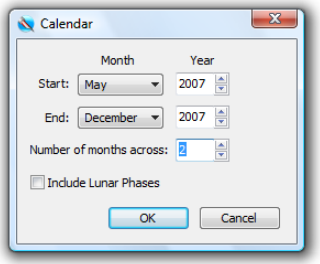
5 Click OK to create the crop marks.

Creating calendars with the Calendar tool



To use the Calendar tool, you must define at least a 1-inch x 1-inch rectangle. Select the Calendar tool and the cursor changes to a crosshair. Drag the crosshair to form at least a 1-inch x 1-inch rectangle and the Calendar dialog box opens so you can define your calendar.

To create a calendar



1 Enter the starting month and year. The default month is the current month and year.

2 Enter the ending month and year. The default month is the current month and year.

3 Enter the number of columns; e.g., if your calendar is for 8 months and you enter 4 in this field, your calendar would have 4 columns and 2 rows.

Note: Select the Include Lunar Phases checkbox if you want lunar phases to appear on your calendar.

Annotations tools

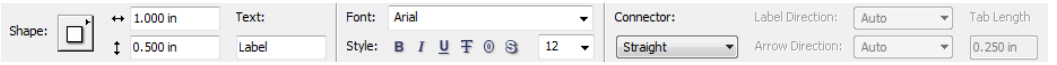


A Basic
B Multiple Sources
C Multiple Notes
D Flowchart

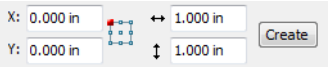
Use these tools to add labels or callouts to your diagrams or illustrations or even create a dynamic flowcharts.

When you click in the drawing area with these tools, Canvas creates an object shape complete with connector lines. You can even select the type of connector line (see "Connecting objects with Smart Lines," page 17.20). The EasyShapes™ tool only creates an object shape, but you can combine this tool with Smart Lines to create dynamic flowcharts.

When using Annotations tools A-D, you should select the object shape from the Label Shape popup palette on the Properties bar before you begin designing; however, you can change the object shape after it has been drawn, if necessary (see "To change object shape" on page 17.19). When you use the EasyShapes tool, you first select an object shape from the EasyShapes popup palette.



Properties bar - Annotations tools A-C selected



Properties bar - EasyShapes tool selected

To add a callout

Depending on your needs, select tools **A** to **C**.

1 Click in the drawing area where you want the first callout to appear.

2 Follow the prompts as indicated.

3 Press Esc when you have finished creating the callout(s). You can also double-click after completing the last item.

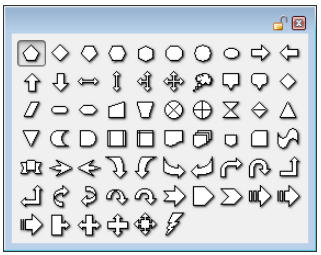
To use the EasyShapes tool

Draw all kinds of shapes, including arrows, flow chart boxes, dialog balloons, symbols, and banners, using EasyShapes™.



1 Select the EasyShapes tool. The EasyShapes popup palette appears.

Note: The EasyShapes popup palette is only available if the EasyShapes tool is selected.



2 Select an EasyShapes from the palette. The cursor switches to a crosshair in the drawing area.

3 Drag the cursor in the drawing area. The new object appears with the current fill ink, pen ink, and stroke properties, and is selected.

Note: You can also create an EasyShapes by entering values in the X/Y and width/height fields in the Properties bar and then clicking the Create button. By default, the X/Y coordinates are set at 0,0.

To enter text in an EasyShapes If the EasyShapes tool you used is one that creates a preset text object, an insertion point appears inside the shape. Type the text. When you finish, press Esc to end text edit mode.

If the EasyShapes tool you used does not create a preset text object, Canvas will create a text object if you begin typing. When you finish typing, press Esc.

Text you type into EasyShapes appears with the current character and paragraph settings and text color.

4 To deselect the EasyShapes object, press Esc.

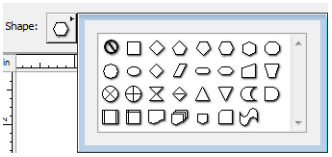
To create a chart

You have the choice of using either the EasyShapes tool or Flowchart tool. With the Flowchart tool, the object shape and connector line are created simultaneously. If you use the EasyShapes tool, you will have to create your connector lines afterwards with a Smart Lines tool (see "Connecting objects with Smart Lines," page 17.20).

1 Select either tool.

2 Follow the prompts for the Flowchart tool. For the EasyShapes tool, select and create an object shape (see "To use the EasyShapes tool" on page 17.18).

To change object shape



1 Select the object shape so the Type icon appears in the Properties bar.

2 Click on the icon to open the Shape popup palette.

3 Select another object shape. The object shape changes immediately.

To change the text

Before you create the annotations object, enter the text in the text field in the Properties bar. If you have already created your object(s), select the Text tool and click on the text in the object to enter text edit mode. Edit the text as needed using the text settings in the Properties bar and then exit text edit mode.

Connecting objects with Smart Lines

The Smart Line tool draws dynamic links between objects. Smart Lines are useful for creating organizational charts, flow diagrams, and other illustrations with linked objects (see "Annotations tools," page 17.18).


Basic


Kinked


Smooth Kinked


Dogleg Connector


Connection Point

Use Smart Lines to link one or more objects to a single object. Draw multiple Smart Lines between objects and link Smart Lines to other Smart Lines. Smart Lines change length and angle to maintain connection to the linked objects.

The Smart Line tools consist of the Basic, Kinked, Smooth Kinked, Dogleg Connector, and Connection Point tools.

To use a Smart Line tool

1 Select a Smart Line tool.

2 Drag from one object to another object. When you release the mouse button, Canvas creates the Smart Line.

To change Smart Line type

1 Select the Smart Line with the Selection tool. The Type menu appears in the Properties bar.

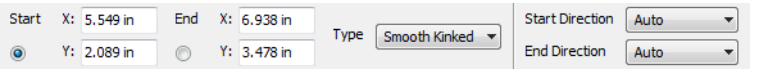
2 Choose another Smart Line type from the menu. You can select Basic, Kinked, Smooth Kinked, or Dogleg. The line changes immediately.

To change the position of start and end points

1 Select the Smart Line with the Selection tool. The Properties bar displays the X/Y values coordinates for the start and end points.

2 Enter new values in these fields and press Enter. The Smart Line shifts accordingly.

Properties for Smart Line



If the Dogleg Connector or a Kinked or Smooth Kinked Smart Line is selected, the Properties bar contains additional information, which is not applicable to Basic Smart Lines.

Start Direction For Kinked Smart Lines, select either Auto, Horizontal, or Vertical to change the slope of the Start direction. For Dogleg connections, select either Auto, Left Always, or Right Always to change the direction of the dogleg portion.

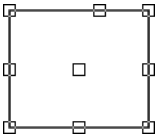
End Direction Select either Auto, Horizontal, or Vertical to change the slope of the End direction.

Tab Length This value refers to the horizontal portion of a dogleg connection created with the Dogleg Connector tool. Enter a value in this field and press Enter. The angled portion of the connection does not change.

- **To unsmooth a Smooth Kinked Smart Line:** Select the line and choose Kinked from the Type menu in the Properties bar.
- **To smooth a Kinked Smart Line:** Select the Kinked Smart Line and choose Smooth Kinked from the Type menu.

To use the Connection Point tool

This tool is used to move the anchor points of a vector object. You can also add and remove anchor points.



1 Select the Connection Point tool. The cursor changes to a crosshair.

2 Click the tool on an existing vector object. The anchor points should appear as shown to the left. When you place the crosshair on an anchor point, the anchor point is emphasized.

3 Click the crosshair on an anchor point and drag it to its new location. You cannot move an anchor point beyond an object's bounding box.

- **To add an anchor point:** Ctrl-click the crosshair anywhere within the vector object.
- **To remove an anchor point:** Press Control+Shift and click the crosshair on the existing anchor point that you want to delete.

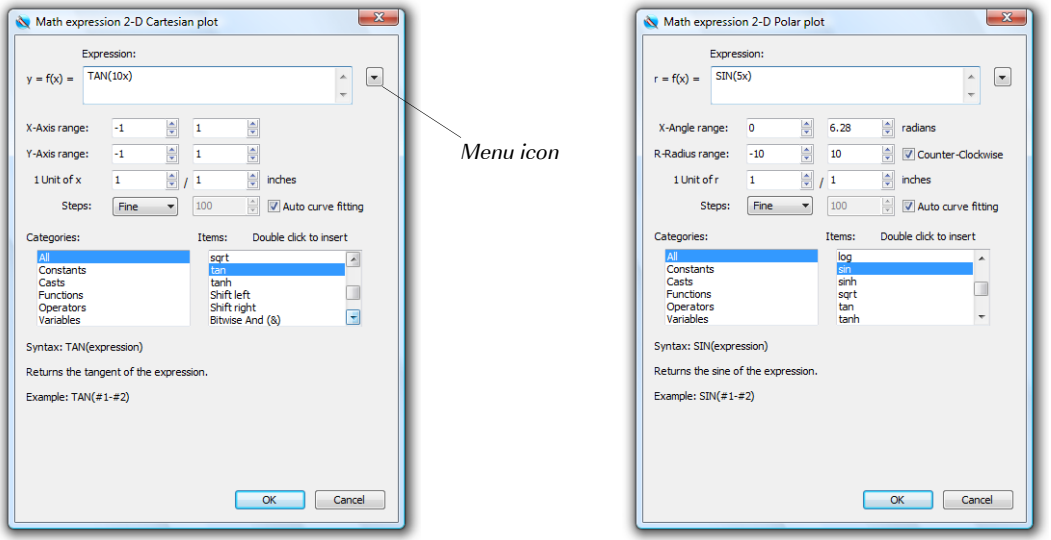
Math Expression 2-D Plot commands

Canvas has included commands that can be used to obtain a visual representation of an equation. Combine these commands with Canvas' export capabilities to quickly create either a presentation or PDF version of technical or scientific reports. You can even export as HTML.

- **To open the Math expression 2-D Cartesian Plot dialog box:**

Choose Object > Math Expression 2-D Plot > Cartesian.

- **To open the Math expression 2-D Polar Plot dialog box:** Choose Object > Math Expression 2-D Plot > Polar.



To use the Math Expression 2-D Plot commands

1 Define the mathematical equation using the Categories scrollbox and their related items.

2 Double-click on an item to make it appear in the Expression field.

Note: The lower portion of the dialog box indicates the correct syntax and shows an example of the expression.

3 Enter values in the range fields. The maximum range must be greater than the minimum range. You can also enter a value in the "1 Unit of" fields to set a scale.

4 Use the Steps menu to control the quality of the curve.

5 Click OK to create the visual representation.

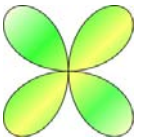
Examples of objects created using the 2-D Polar Plot dialog box

The visual representation is created as a vector object that use the current pen and fill inks. You can also apply any vector object effect as well as change the fill and pen inks.

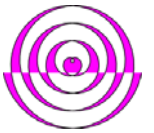
These objects can also be rendered and exported as an image.



Formula: r=1-sin(θ)
Expression: r=1-sin(x)
x: 0 - 6.29
r: -10 - 10
Counterclockwise
1/1



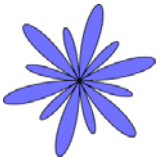
Formula: r=sin(2θ)
Expression: r=sin(x)
x: 0 - 6.29
r: -10 - 10
Counterclockwise
1/1



Formula: r=2θ
Expression: r=2*x
x: -31.4 - 31.4
r: -50 - 50
Counterclockwise
1/40

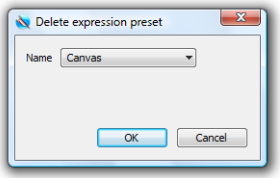


Formula: $r=\theta\sin^2(\theta)$
Expression: r=x*(sin(x))^2
x: 0 - 6.29
r: -10 - 10
Counterclockwise
1/3



Formula: r=sin(6θ)+log(1.5)
Expression: r=sin(6*x)+log(1.5)
x: 0 - 6.29
r: -10 - 10
Counterclockwise
1/1

✓ Tip
Saved expressions appear at the bottom of the menu list.



- **To save an expression:** Click on the menu icon and select Save expression as. The Save expression as dialog box opens. Enter a name for the expression and click OK.
- **To load a saved expression:** Click on the menu icon and select the expression's name from the list. The equation appears in the Expression field.
- **To delete a saved expression:** Click on the menu icon and select Delete expression. The Delete expression preset dialog box appears. Select the expression from the Name menu and click OK.

CHAPTER 18

DRAWING & EDITING PATHS

Path tools let you draw and edit vector object paths of any shape. This chapter explains how to draw paths, edit paths, and edit curves segments using the control points that define them.

Drawing with the Path tools



Path tools

Curve, Polygon, Smooth Polygon, Freehand, Push, Reshape, Auto Curve

You can use the Curve, Polygon, Smooth Polygon, Freehand, and Auto Curve tools to draw vector objects as open or closed paths. When you use the Curve, Polygon, Smooth Polygon, and Auto Curve tools, you set anchor points to define path segments. With the Freehand tool, you simply drag to draw a path. The Reshape and Push tools let you edit paths.

The Polygon tool draws paths with straight segments. The Smooth Polygon tool draws paths with smooth line segments. The Curve and Auto Curve tools can draw paths with straight and curved segments. Paths drawn with the Freehand tool generally are made of curved segments based on the movement of the pointer.

When you draw with the Path tools, Canvas uses the current pen ink, fill ink, and stroke settings for the vector objects you create.

Drawing polygons

When you use the Polygon or Smooth Polygon tool to draw an object, you set anchor points that define a path of straight line segments or smooth line segments, respectively. You can later curve the straight segments, as with any path object. For editing information, see “Editing object paths” on page 18.7.

1 Select the Polygon tool or Smooth Polygon tool.

2 Click to set the first anchor point, shown as a small square.

3 Click where you want to place the second anchor point.

- You can press the pointer to display the segment, drag to position it, and then release the mouse button.
- To constrain placement of a segment to 45° intervals, press Shift while drawing the segment.

4 Repeat the last step to draw more segments.

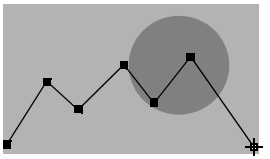
- **To remove the last segment you drew:** Press Delete.

5 To complete the polygon:

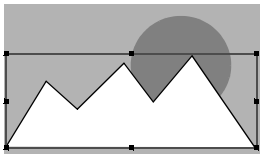
- For an open polygon, after you place the last anchor point, press Esc or double-click to place the last anchor point.
- For a closed polygon, click the starting anchor point, and then press Esc or double-click the starting anchor point.



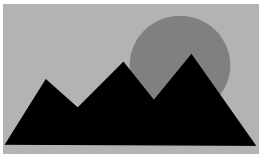
Click to place first point



Click additional points, double-click last point



Completed polygon (selected)

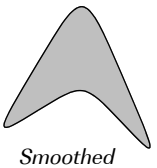


Polygon finished with solid black fill ink

Smoothing polygons with straight segments



Polygon



Smoothed

If you created a path object with the Polygon tool, use the Smooth command to convert a straight-segment polygon to a path with smooth curves. You can smooth any paths made of straight segments, including rectangles and paths drawn with the Curve tool, as long as they have only straight segments. The Smooth command is a convenient way for those who haven't mastered curve drawing to create smooth shapes.

Note: If you require that the polygon object have smooth curves, you should use the Smooth Polygon tool if you haven't yet created the object.

- **To smooth a straight-segment polygon:** Select the polygon and choose Object > Path > Smooth. Canvas converts the polygon's corner points into smooth points, which changes the path's straight line segments into curved segments. For more information about editing smooth points and curved segments, see "Reshaping paths by editing anchor points" on page 18.21.

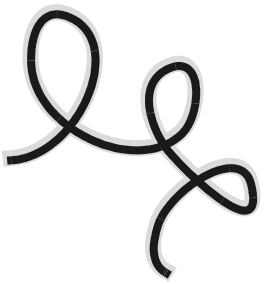
Use the Unsmooth command to restore the straight segments of a polygon that was smoothed with the Smooth command. However, you can use Unsmooth only if the smoothed polygon wasn't edited after it was smoothed.

- **To unsmooth a smoothed polygon:** Select the smooth polygon and choose Object > Path > Unsmooth. Canvas restores the polygon's straight line segments.

Drawing freehand paths



You can draw objects with the Freehand tool by simply dragging the pointer. The Freehand tool creates paths with curved segments based on the movement of the pointer.



Paths drawn with the Freehand tool

As with any path object, you can later edit the path and reshape its segments; see "Editing object paths" on page 18.7.

- **To draw a freehand path:** Select the Freehand tool in the Path Tools toolbar. Position the pointer where you want the path to begin. Drag to create a path. To create a closed path, release the mouse button when the pointer is on the starting point.

- **To set the curve tolerance:** You can tell Canvas to use relatively more or fewer anchor points to represent a curve. Select the Freehand tool and the Set Tolerance box appears in the Properties bar. In the text box, type a value from 1 to 5, where a value of 5 tells Canvas to use as few anchor points as possible.

If you have difficulty drawing smooth curves with this tool, try lowering the speed setting for your mouse (or other pointing device). Refer to your system documentation for information on these settings.

Drawing curved paths

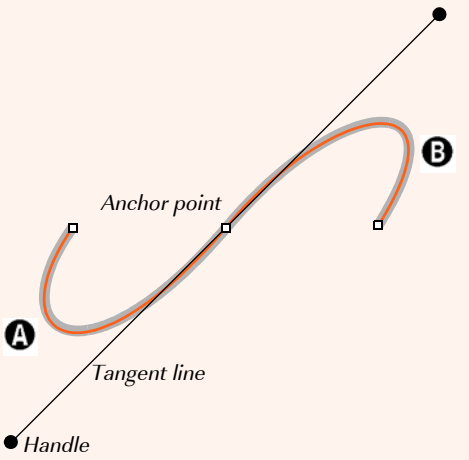


The Curve tool is the most versatile of the path tools. You can use it to draw precise paths with straight and curved segments. When you draw curved segments, you place an anchor point and a tangent line at the start of each segment. The position and length of the tangent line controls the shape of the curved segment.

Defining curves

Anchor points determine where path segments (A and B) start and end. Tangent lines at each anchor point control the shape of curve segments.

A tangent line affects the adjacent segment. The tangent line of a segment's other anchor point (not shown) also affects the segment's shape.



You can also draw straight paths by clicking with the Curve tool, similar to the way you use the Polygon tool (see "Drawing polygons" on page 18.1).

To draw a path with curved segments

1 Select the Curve tool.

2 Where you want the path to begin, do one of the following:

- Click to set the anchor point and, before releasing the mouse button, drag to position its tangent line.
- Click to set the anchor point without creating a tangent line.

When you release the mouse button, the anchor point appears.

3 Where you want the segment to end, do one of the following:

- Drag to simultaneously set an anchor point and position a tangent line.
- Click to set the anchor point without creating a tangent line.

This finishes the first curve segment.

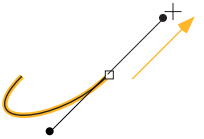
4 Repeat the previous step to draw additional segments.

5 To complete the path, use one of the following options:

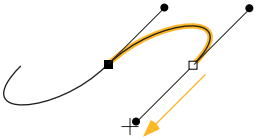
- For an open path, after you place the last anchor point, press Esc. You can also double-click to place the last anchor point.
- For a closed path, click the starting anchor point, and then press Esc. You can also double-click the starting anchor point.



To draw the curve shown in gray, press and drag to set the first anchor point and tangent line.



Press and drag to set the next anchor point and tangent line. The first segment (highlighted) grows as you draw out the tangent line.



Press and drag to set the third anchor point; the second segment (highlighted) grows as you drag the tangent line.

Shaping and editing segments as you draw

As you draw with the Curve tool, you can use modifier keys to constrain and edit the path segments.

- **To place an anchor point at a 45° interval relative to the previous one:** Press Shift as you set the second anchor point.
- **To create a straight segment:** Press Ctrl as you click to set the segment's endpoint.
- **To remove the last segment:** Press Delete. You can continue to remove segments in the reverse order you created them, until you delete the entire object.
- **To constrain a tangent line to 45° increments:** Press Shift as you drag the tangent line.

Drawing auto curves



The Auto Curve tool draws and edits curved paths. This tool makes it easy to draw smooth curves because it automatically curves path segments as you simply click or drag the mouse.

When you use the Auto Curve tool, you don't have to position tangent lines that control the shape of curves. Instead, you simply click to set anchor points and smooth curve segments appear. You can

drag the mouse to see how the path will curve before you set each anchor point.

Like the other path tools, you can use the Auto Curve tool to draw new paths and to add segments to paths as you edit them.

To use the Auto Curve tool

1 Select the Auto Curve tool.

2 Click in the drawing area to set the beginning point of a path. If you are editing a path, click to set the path's next anchor point.

3 Move the mouse and click to set the second anchor point. A straight segment connects the first and second points.

- You can press Shift when you click to snap the first segment to a 45° angle.

4 To set the third anchor point, do either:

- Click to set the anchor point. This completes a smooth curve from the first anchor point to the new anchor point.
- Hold down the mouse button and move the mouse to preview the curve. You can see the segments bend as you move the pointer. Release the mouse to set the new anchor point.

5 Repeat the previous step to continue adding anchor points to the path. You can also select other path tools (Curve, Polygon, Push, and Reshape) to continue adding segments to the path.

6 To finish drawing the path, do either:

- Press Esc.
- Double-click to set the final anchor point. You must double-click on the starting point to complete a closed path.

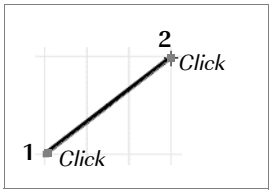
When you finish drawing, the path object is selected. Canvas applies the current pen ink, fill ink, and stroke to the path. You can use path editing tools and techniques to modify the path.

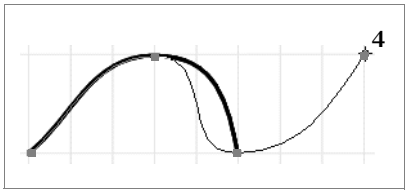
Drawing Auto Curves

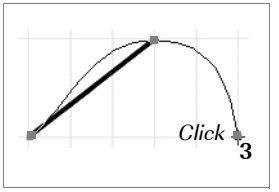
With the Auto Curve tool, click to set anchor points 1 and 2 to start a path.

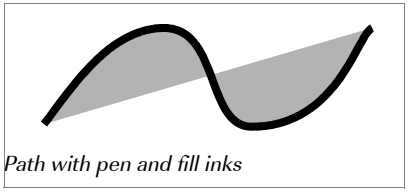
Click to set point 3. The first and second segments bend to form a smooth curve.

You can click to set more anchor points and draw additional curved segments. Press Esc to finish the path.








Path with pen and fill inks

Editing object paths

Most vector objects in Canvas are paths. Whether you draw with Path tools (Curve, Freehand, Polygon, Smooth Polygon, Auto Curve) or other shape tools (Rectangle, Oval, Line, Arc), you create paths, and you can use the same path-editing techniques to modify them.

Of course, you can also change a path object by using handles on the bounding box when the object is selected (see "To resize an object's bounding box" on page 17.4).

Displaying inks and strokes

Canvas has two display modes you can use when you edit paths. You can display the fill inks, pen inks, and stroke on paths, or you can hide the attributes while you work in path edit mode.

- **To display attributes on paths:** Be sure that the command Object > Path > Live Curve Editing is selected. To hide attributes in path edit mode, select the command again.

You can change the path-editing display at any time. To use the Live Curve Editing command, objects do not have to be selected or be in path edit mode.

Editing paths with the Reshape tool



The Reshape tool provides an easy-to-use, interactive way to edit paths. Using the tool is as simple as dragging the mouse. The tool will reshape the parts of a path that you drag over.

To use the Reshape tool

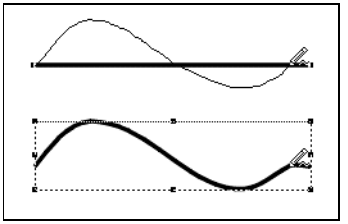
1 Select an object to edit. To use the Reshape tool, one vector object can be selected or be in path edit mode.

2 Select the Reshape tool.

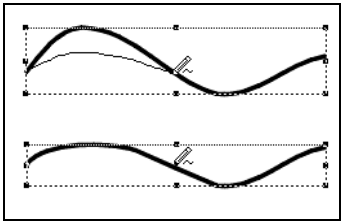
3 Move the pointer close to the path and a reshape symbol (~) will appear at the pointer. The symbol indicates that you can drag to reshape the path.

4 Drag to draw a new segment in the shape you want. When you release the mouse, Canvas applies the segment you drew to the path.

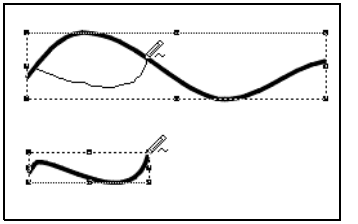
After you use the Reshape tool, the object remains selected or in edit mode. Continue to use the Reshape tool to modify the path.



Reshaping a straight line into a curved path

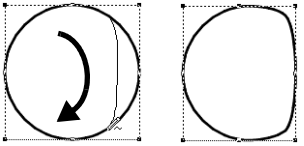


Changing the shape of a curve segment

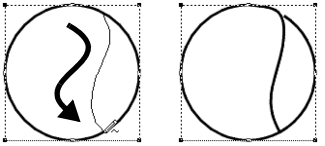


Dragging to reshape a segment and shorten the path

Reshape techniques



Dragging in one direction reshapes the circle



Changing direction adds a segment and opens the path

When you drag the Reshape tool, the direction that you drag affects the way the tool modifies the path.

If you drag in one direction and finish on the path, the tool will reshape the path to match the line that you draw.

If you finish dragging away from the path, the Reshape tool can create a new segment that opens a closed path. If you drag the tool on an open path, you can draw a new segment that closes the path. You can also drag the tool so it reshapes part of a path and removes the rest.

In general, if you drag in one direction along a path, the tool will change the shape of a segment without removing the rest of the path or opening the path. For example, if you follow the curve of a circle as you drag from the top toward the bottom, you can make the circle narrower. If you drag from one part of the circle and change direction, you can create a segment that changes the circle to an open path.

Experimenting with the Reshape tool is the best way to learn the various techniques you can use to modify paths.

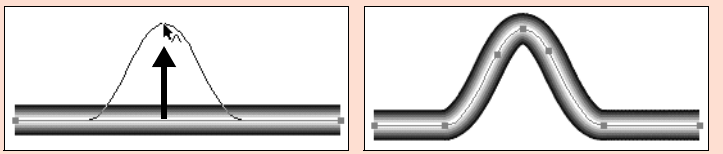
Editing paths with the Push tool



The Push tool provides an alternative way of editing paths. The tool lets you form curves without having to edit anchor points and tangent lines. The Push tool is useful for people who are not experts at editing paths and who want to simply drag on path segments to bend them into shape.

The Push tool bends a path where you “push” (drag) on it. Imagine that a rope is laid out straight on a table. If you push your finger against the middle of the rope, you form a curve at that point. Using the Push tool has a similar effect on a straight segment of a path.

Dragging a path with the Push tool bends the path. The Range setting controls the width of the effect.



You can adjust the range of the Push tool effect. A smaller range results in sharper bends, and a larger range results in smoother bends.

To use the Push tool

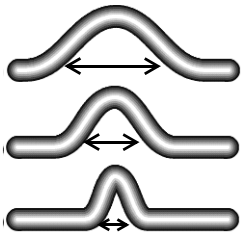
1 Select an object to edit. One vector object can be selected or be in path edit mode.

2 Select the Push tool. If you want to change the Range of the Push tool, enter a value in the text box in the Properties bar.

3 Drag on the path where you want to push a segment into a curve shape. When you release the mouse, Canvas reshapes the path.

After you use the Push tool, the object remains selected or in edit mode. Continue to use the Push tool to modify the path.

Push tool Range



Range (top to bottom): 3 in., 2 in., 1 in.

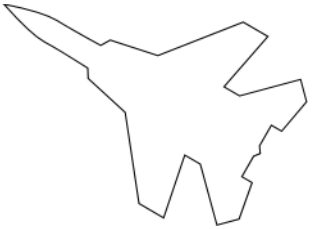
To change the Range of the Push tool, use the Range settings in the Properties bar when the tool is selected. The Range value is expressed in the rulers' measurement units.

To specify the Range value, enter a value in the Range text box. You can type an abbreviation for the measurement units following the range value; e.g., to set the Range to 10 picas when the ruler units are inches, enter "10p" in the text box.

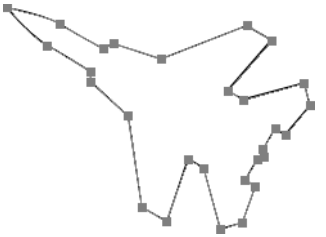
Depending on the Range setting, editing a path with the Push tool can add or remove anchor point from the path; e.g., when the Range value is low, the Push tool is likely to add anchor points where you push a path. However, when the range is high and a path is not straight, the Push tool can smooth out a part of the path, which can result in fewer anchor points.

Working with objects in edit mode

To edit points and segments of a path, place the path object in edit mode. In edit mode, a path's anchor points appear as small squares along the path. Every path has at least two anchor points.



Object path drawn with Curve tool



Object in edit mode, with anchor points visible

When an object is in edit mode, you can select one or more anchor points. You can even select anchor points and segments on more than one object at once, as long as the objects are in edit mode.

To place an object in edit mode

Do one of the following to place a path object in edit mode:

- Select the object with the Direct edit selection tool.
- Double-click the object with the Selection tool.
- Select the object and choose Object > Path > Edit Path or choose Object > Edit > Object.
- Select the Selection tool after placing an anchor point while you are drawing a path.

- **To place multiple objects in edit mode:** Place two or more objects in edit mode by selecting them with the Direct edit lasso selection tool or by selecting them with the Selection tool and then choosing Object > Path > Edit Path.

- **To return from edit mode:** When you finish editing an object, click outside the object with either the Direct edit selection tool or Direct edit lasso selection tool. You can also double-click outside the object with the Selection tool. In addition, you can press the Esc key to leave edit mode.

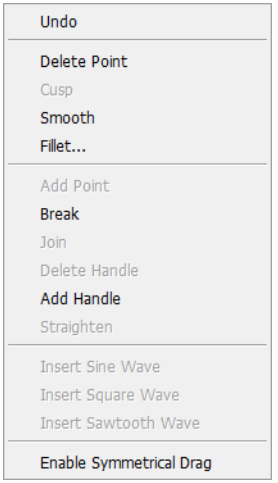
To edit special vector objects

Some Canvas drawing tools create specialized objects. When you double-click one of these objects to place it in edit mode, Canvas displays special editing handles or configuration options, rather than the anchor points and segments of a regular path object.

The tools that create special vector objects are the Concentric Circles, Cube, Polygon, Grid Maker, Multigon, or Spiral. Also, when you modify objects with the Envelope or Extrude commands, Canvas creates specialized objects.

If you want to use path-editing techniques to modify these objects, convert them to paths. This usually produces a group of objects. After you ungroup these objects, you have regular paths that can be edited using the techniques in this chapter. You can also convert text characters to paths so that you can edit the shapes of individual characters (see "Converting objects and text to paths" on page 18.24).

Editing paths with the context menu



When a path is in edit mode, use the context menu to quickly add, delete, and change anchor points and tangent lines. To see this menu, right-click with at least one object in path edit mode. The available options vary depending on the location of the pointer. Each option is described next.

Delete Point Available when the pointer is on an anchor point and appears as a crosshair. Removes the anchor point from the path, and connects the adjacent anchor points with a new segment.

Cusp Available when the pointer is on a tangent line handle or an anchor point. On anchor points, this option deletes the point's tangent lines. On tangent line handles, this option makes the path either smooth or cornered at the anchor point. To be smooth, the anchor point must have both sides of a tangent line. When smooth, the halves of the tangent line are always 180° from each other and rotate around the anchor point like a propeller. When the anchor point is a corner, the tangent line segments can move independently around the anchor point, like the hands of a clock.

Smooth Available when two or more points of an object are selected. You can smooth any paths made of straight segments.

Fillet Available when the pointer is on a corner point (with less than two tangent lines between two segments. Fillet creates a radius corner between the two segments. When you choose Fillet, a dialog box appears. Enter a radius value in the text box and click OK. The larger the radius value, the larger the curved segment. A message appears if the radius value is too large for the angle of the segments.

Add Point Available when the pointer is on a path segment and appears as a gray arrowhead. Inserts an anchor point with a tangent line where you click.

Break Available when the pointer is a gray arrowhead on a path. Splits the path segment at that location, and adds anchor points to the ends of the resulting segments.

Join Available when you select two anchor points that are not connected. Connects the selected points with a straight segment.

Delete Handle Available when the pointer is on a tangent line handle and appears as a crosshair. Removes the handle and the effects of the tangent line on the path (see "To delete tangent lines," page 18.22).

Add Handle Available when the pointer is on an anchor point and there are fewer than two tangent line segments at the anchor point. Adds one or two tangent line segment to the anchor point (see "To add a tangent line," page 18.22).

Straighten Available when the pointer is on a path segment and appears as a gray arrowhead. Makes the path segment straight by removing tangent lines from the segment's anchor points.

Enable Symmetrical Drag Available when an object is in path edit mode. You can easily create a symmetrical design from a circle, rectangle, or a complex group of objects (see "To symmetrically resize path points," page 18.27).

Selecting anchor points and segments

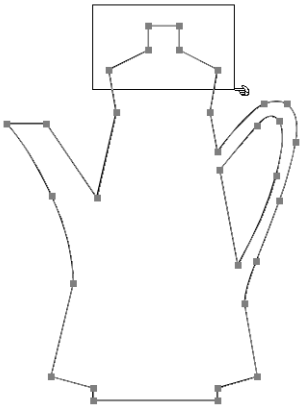


When you edit paths, you need to select particular anchor points or segments before you can delete, move, or reshape them. Before you can select anchor points and segments, a path object must be in edit mode (see "To place an object in edit mode" on page 18.11).

When a path is in edit mode and you point to an anchor point with a Selection tool, the pointer becomes a crosshair. When you point to a segment, the pointer becomes a gray arrowhead. The Selection tools are explained in "Selecting objects with Selection tools," page 16.3.



When an anchor point is selected, the Properties bar displays settings for angle and length. You can even add/delete handles or adjust the point to smooth or cusp.



Use the Selection tool to select multiple anchor points.

You can select points in more than one path. When you move any selected point, all points in the selection move the same way. (If all the points in a path are selected and you drag one, the entire path moves.) This also works for segments belonging to separate paths.

- **To select anchor points and segments:** With the path object in edit mode, click an anchor point or segment to select it. To select multiple points or segments, use either the Direct edit selection tool or the Selection tool to drag a selection box around them or Shift-click each point or segment.

- **To select all anchor points:** With the path object in edit mode, choose Edit > Select All.

- **To select parts of separate paths:** Place the paths in edit mode, and Shift-click the point or segments.

- **To inverse a selection:** Choose Edit > Invert Selection. The other points are selected and the current one is deselected.

When an anchor point is selected, it changes from a solid to hollow square. If the anchor point has tangent lines, they appear when the anchor point is selected. All tangent lines that affect the segments that touch the selected anchor point also appear. When you select a segment, the anchor point at each end is selected.

Adding and deleting points and segments

If a segment's anchor points are too far apart for you to adjust the shape as needed, add more. If you create or add more anchor points than you need, delete unnecessary ones.

Keep in mind that the more points on a path, the more complex and system resource-intensive it becomes. In particular, too many anchor points can cause printing problems. It's best to use the fewest possible anchor points placed as far apart as possible to create a path.

- **To add an anchor point:** With an object in edit mode, right-click a segment to which you want to add an anchor point. In the path Context menu, choose Add Point. You can also Ctrl-click a segment to add a point.

- **To delete an anchor point:** With an object in edit mode, right-click the point you want to delete. In the path Context menu that appears, choose Delete Point. You can also Ctrl+Shift-click a point to delete it, or select points and press the Delete key.

- **To delete a segment:** Select the anchor points at each end and press Delete. Deleting a segment of a closed path does not open the path; the remaining segments are joined and the path remains closed.

To add segments to an open path

Add segments to the end of an open path using the Curve tool or Polygon tool.

✓ **Tip**
If you create the open path with the Smooth Polygon tool, use the Smooth Polygon tool to add segments.

1 With the object in edit mode, select the endpoint where you want to add a segment.

2 Select the Curve tool (to add straight or curved segments) or Polygon tool (to add straight segments).

3 Click to add a straight segment beyond the selected endpoint. With the Curve tool, add a curved segment by clicking the mouse to establish the new anchor point and then dragging to position the tangent line.

4 To add additional segments, repeat the previous step. When you finish, press Esc to leave edit mode.

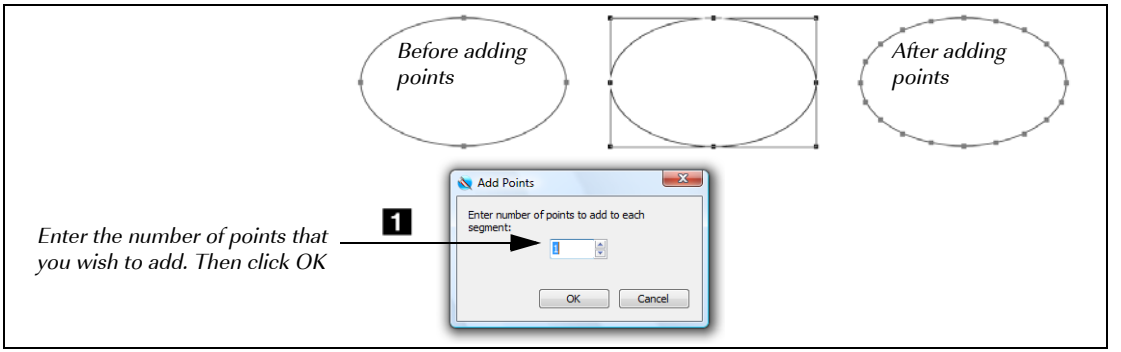
To add points to a curve

Often technical illustrators need to quickly add more editing points to a Bézier curve.

1 Select the object.

2 Choose Object > Path > Add Points. This operation will activate the Add Points dialog box (**1**), which will allow you to enter the number of points that you wish to add to the object.

3 Click OK to accept your choice.



Closing and opening paths

A closed path is one that starts and ends at the same anchor point. An open path has separate starting and ending points. You can close an open path by letting Canvas create a new segment to join the path's two endpoints. Open a closed path by breaking the path.

- **To close an open path:** With the path in edit mode and the Curve or Polygon tool selected, click one of the endpoints. Canvas closes the path by connecting the endpoints with a new segment. If the adjacent segments are curved, the new segment follows the curve.

- **To break a closed path:** With the object in edit mode, right-click an anchor point or segment to open the path Context menu. In the menu, choose Break; Canvas inserts segment end points to open the object at that location.

Using the Scissors tool to open and divide paths



Use the Scissors tool to open a closed path and divide a path into two objects. Splitting a path opens the path at the point where the scissors clip the path.

1 Select the Scissors tool. The pointer changes to a pair of scissors.

2 Point to the path where you want to split it (you don't need to select the object first). The pointer becomes a crosshair when it is on a point or segment that can be split.

3 Click the path when the crosshair is displayed. Canvas adds two endpoints where you click the path, and the path opens.

4 If the path is closed and you want to split it into two paths, click the path again where you want to split it.

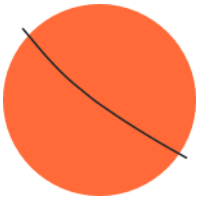
Dividing objects with the Knife tool



Divide vector objects into separate pieces using the Knife tool. When you drag the Knife tool, it draws a cutting path. If the cutting path divides an object into two parts, the result is two new objects. If the cutting path crosses itself, the area inside the path becomes a new object.

The Knife is similar to the Scissors tool; both tools divide vector objects. The Scissors tool divides an object with a straight line between the two points that you click. The Knife tool slices objects

along a freeform cutting path. Therefore, use the Knife tool to cut curved edges.



Drag the Knife tool...



...to slice an object

Use the Knife tool on open and closed vector objects. If you slice one or more open paths, the resulting objects are open paths.

If you slice an open path that crosses itself, the path separates where it crosses itself and where you slice it.

- **To use the Knife tool:** Select the Knife tool. Drag in the document to draw a cutting path that intersects the objects you want to divide. The cutting path must intersect at least two points on an object's perimeter. To constrain the path of the Knife tool to 45° increments, press Shift as you drag. Release the Shift key to drag freely.

Partial cuts If you stop dragging before the cutting path intersects a second point on an object's perimeter, the cutting path appears but the object stays intact. To use this cutting path to divide the object, drag a second cutting path so it intersects the perimeter of the object and the first cutting path. Or, you can intersect the cutting path with other cutting paths to create a closed shape. The part of the object that falls within the closed shape becomes a separate object.

Cutting holes Cut out pieces of a vector object by dragging inside the object and creating a closed path. The parts of the object that fall within the closed cutting path become separate objects. To create a closed cutting path, the path must cross itself.

Gradient inks If an object's fill ink is a gradient, and the style is Radial, Directional, Rectangular, or Elliptical, the gradient remains intact across the separated objects. However, if the gradient style is Shape, the gradient fills each divided object separately.

Knife tool options

To configure the Knife tool, use the settings in the Properties bar.

Cut Only Selected Objects Select this option to make the Knife tool slice only vector objects that are selected and intersected by the cutting path. This setting can prevent unintentional changes to nearby objects.

Cut All Objects Select this option to make the Knife tool slice any vector objects that the cutting path intersects, whether the objects are selected or not.

Cropping vector & image objects



Canvas contains a Page Crop tool that can be used to crop several objects at once. This tool can be used on both image and vector objects.

Note: If some vector objects contain SpriteEffects, you should render those objects before applying the Page Crop tool.

Any objects that are outside of the cropping rectangle will be deleted after completing the crop. After applying the Page Crop tool, images remain paint objects. Vector objects, however, become Bézier curves. The pen stroke, if any, becomes a composite object.

✓ Tip
You cannot crop text objects or images to which a soft rotate effect has been applied.
If you plan on using or editing the original file in the future, ensure that you save a copy of the file before applying the Page Crop tool.

To use the Page Crop tool

1 Select the Page Crop tool. The cursor changes to a crosshair.

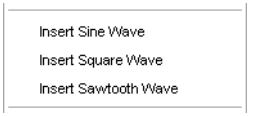
2 Drag the crosshair diagonally across the objects to form a cropping rectangle.

3 Move the cropping rectangle, if necessary. Place the cursor on the border of the cropping rectangle and a hand appears.

4 Resize the cropping rectangle, if necessary.

5 Place the cursor within the cropping rectangle and click to complete the crop.

Periodic waveforms



In Canvas, you can easily add a sine wave, sawtooth wave, or square wave to a Bézier or polygon segment that is in curve edit mode.

Note: This command can be applied to one segment at a time.

To create a waveform

1 Ensure that the Bézier curve or polygon is in curve edit mode.

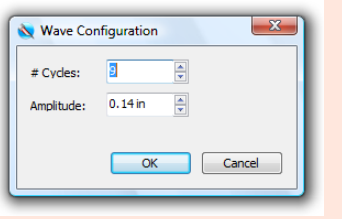
2 Right-click on the path segment to access the context menu.

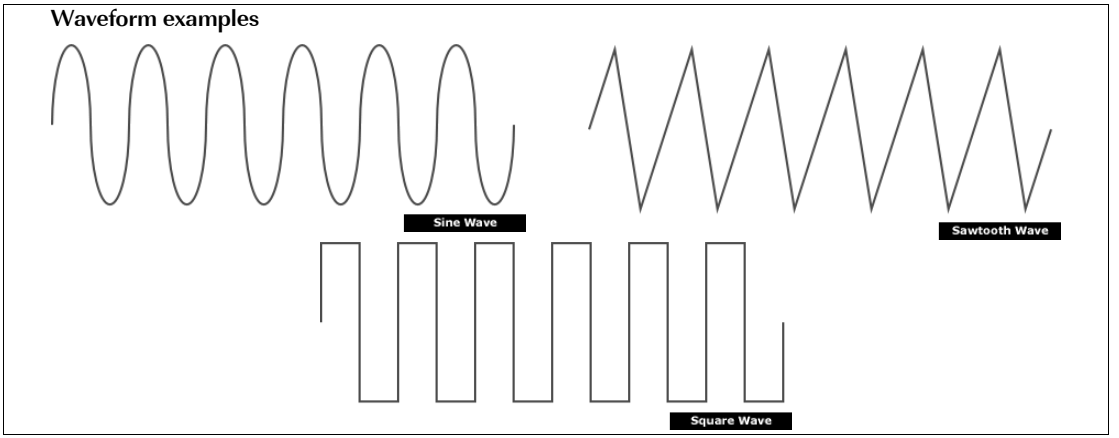
3 Select one of the wave options: Insert Sine Wave, Insert Square Wave, or Insert Sawtooth Wave. The Wave Configuration dialog box opens.

4 Enter a value for the frequency in the # Cycles field.

5 Enter another value for the Amplitude.

6 Click OK.





Joining two paths

Use the Join command to create one path from two separate, open path objects.

- **To join two paths:** Select the two open path objects that you want to join. Choose Object > Path > Join. Canvas connects the two paths by extending the existing segments or creating a new segment.

To join paths at selected endpoints

Canvas, by default, joins paths at the closest endpoints; however, you can select which endpoints to join.

1 Place an open object or multiple open objects in edit mode.

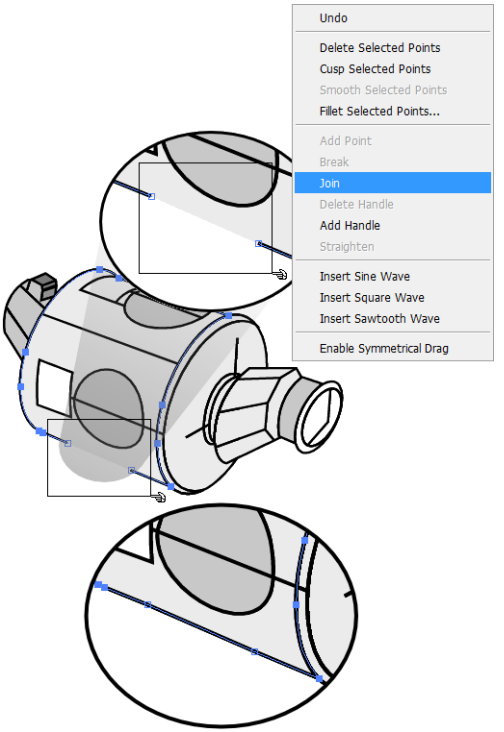
2 Click an endpoint you want to join to another path. The endpoint becomes hollow to indicate that it is selected.

3 Shift-click another endpoint. The endpoint also becomes hollow to indicate that it is selected.

4 Choose Object > Path > Join or right-click one of the selected points. In the context menu, choose Join.

✓ Tip
Remember that the object must have an open path. If the object's path is closed, you must break it (see "Break," page 18.13).

✓ Tip
You can also draw a selection box around the object's endpoints with either the Selection tool or Direct edit selection tool.



Moving anchor points and segments

With a path in edit mode, you can move points and segments to alter the shape of the path.

Drag an anchor point or segment to move it. You can also press the keyboard arrow keys to move selected points and segments. Moving reshapes the segments you drag or the segments attached to the points that you move.

When you begin to drag a segment, the anchor points display their tangent lines. You can control the movement of the tangent lines by using modifier keys when you drag the segment.

Expand or contract curves Press Tab and drag a segment to change the length of its tangent lines without changing their angles. This is the way that segments could be reshaped (without pressing Tab) in Canvas 3.5 and earlier versions.

✓ **Tip**
Pressing Shift while dragging points or segments will constrain their movement to 45° intervals.

Reshape adjacent segments To reshape a segment and adjacent segments together (if they are joined with smooth anchor points), press Alt and drag the segment.

Reshaping paths by editing anchor points

A path can contain two kinds of anchor points: smooth points and corner points.

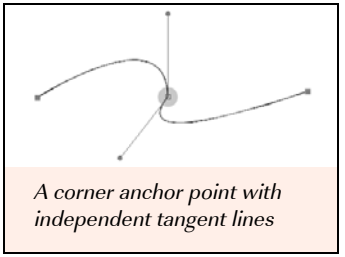
Smooth point An anchor point that connects two curve segments where the curve flows smoothly through the anchor point without a sharp change in direction. Circles and sine waves are examples of paths that have only smooth anchor points.

Corner point An anchor point where the path makes a sharp turn at the anchor point. Corner points can connect two straight segments, two curved segments, or one curved and one straight segment.

Tangent lines

All smooth points, and some corner points, have tangent lines passing through them. Canvas displays the tangent lines when a point is selected.

A corner point can have one, two, or no tangent lines.When you select a corner anchor point with two tangent lines, each tangent line can move independently.



A corner anchor point with independent tangent lines

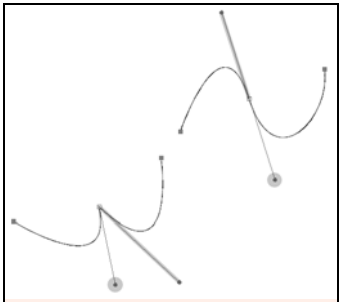
When you create paths with only straight segments, the anchor points are corner points. When you draw curved paths with the Curve, Freehand, or Auto Curve tools, the anchor points are smooth points. Adding anchor points to curved segments produces smooth points.

To change a smooth point to a corner point

You can edit, reshape, and resize two adjoining curve segments independently by converting their smooth anchor point to a corner point.

1 With the object in edit mode, click the anchor point to reveal its tangent lines.

2 Press Tab and drag one of the handles to move one of the tangent lines. The tangent line pivots at the anchor point and affects only one side of the anchor point.



Tab-click a corner point's handle to snap the other tangent line into alignment and smooth the path

To change a corner point to a smooth point

To smooth out a sharp turn in curved segments, change the corner point between them to a smooth point.

Note: The corner point must have two tangent lines for this procedure. If it has fewer than two, first add tangent lines to the point.

1 With the object in edit mode, click the anchor point to display its tangent lines.

2 Tab-click the handle of the tangent line you want to keep in place; the other tangent line snaps into alignment.

Adding and removing tangent lines

An anchor point can have as many as two tangent line segments. Corner points can have one, two, or no tangent lines, and smooth points must have two. You can quickly convert a smooth point to a corner point by deleting one of its tangent lines. Also, to convert a corner point with one or no tangent lines to a smooth point, you must add tangent lines.

To add a tangent line

1 In path edit mode, select an anchor point with one or no tangent lines. The anchor point cannot be an endpoint with one tangent line, because endpoints can have only one tangent line.

2 Press Tab and drag away from the anchor point to place a new tangent line segment. You can also right-click and choose Add Handle in the context menu. As you do this, the new tangent line begins altering the segment based on how you drag to position the tangent line.

3 Repeat the previous step to add a second tangent line.

To delete tangent lines

1 In edit mode, click an anchor point to display its tangent lines.

2 Depending on how you want to edit the anchor point, do one of the following:

- **To delete one tangent line:** Right-click the tangent line handle and choose Delete Handle in the context menu. You must use this method for anchor points with only one tangent line, and to delete one of two tangent lines attached to an anchor point.

- **To delete an endpoint's tangent line:** You can also Tab-click the anchor point.
- **To simultaneously delete both tangent lines of an anchor point:** Tab-click the point.

Straightening curve segments

Straighten a curved segment by selecting it and using the Straighten command in the context menu. This command deletes the tangent line(s) that curve the segment.

To straighten a segment:

1 With the object in edit mode, right-click the curved segment that you want to straighten.

2 Choose Straighten in the context menu.

Reshaping curve segments

To adjust the shape of a curve, in addition to moving points and segments along the path itself, you can adjust the tangent lines that control the curve. The angle of the tangent line affects the curve shape, while the length of the tangent line affects the size of the segment.

At a smooth anchor point, adjusting the angle of a tangent line affects the curves on both sides of the anchor point. At a corner anchor point, you can reshape the segments on each side independently (see "Reshaping paths by editing anchor points" on page 18.21).

To reshape a curved segment

1 With the object in edit mode, click one of the segment's anchor points to display its tangent lines.

2 Drag the handle of the tangent line to change the shape of the associated curve. In the case of a smooth point, the tangent line affects both adjacent curve segments.

Path editing shortcuts

To do this	Shortcut
Add an anchor point	Ctrl-click path
Delete an anchor point	Ctrl+Shift-click anchor point

To do this	Shortcut
Change the length of the tangent lines on both sides of a smooth anchor point at the same time	Ctrl-drag tangent line handle
Constrain tangent line to 45-degree increments	Shift-drag tangent line handle
Move tangent line segment independently (change anchor point from smooth to cusp)	Tab-drag tangent line handle
Align tangent line segments (change corner point with two tangent lines to smooth point)	Tab-drag tangent line handle
Add tangent line to an anchor point	Tab-drag an anchor point
Delete an anchor point's tangent lines	Tab-click the anchor point or endpoint
Close an open path	Alt-click an endpoint
Reshape a segment without changing the tangent line angles	Press Tab and drag the segment
Reshape A segment and adjacent segments	Press Alt and drag a segment

Converting objects and text to paths

Some vector objects have specialized properties and unique edit modes instead of the standard path edit mode; e.g., you cannot directly edit the path segments of dynamic objects, concentric circles, grids, multigons, spirals, and objects modified by the Envelope or Extrude commands; however, you can convert these objects to paths so you can edit them the same as any other vector object.

If you create paths from a specialized vector object, the new shape does not have the same unique editing capabilities as the original; e.g., if you convert a Multigon star object to paths, you can no longer use the edit handles that let you adjust the depth and twirl of the points. Similarly, placed dynamic objects are no longer linked to their parent objects in the Symbol Library palette after you convert them to paths.

You can also convert text so you can reshape characters as vector objects. This has the benefit of making the characters independent of their fonts; the font is no longer required to view and print the characters properly. However, once you convert text to paths, you can no longer perform text operations, such as editing, spell-checking, and formatting, on the text. Also, characters with "holes" in them (such as a, b, d, e, g, o, p, r, and q) are converted to composite paths, which cannot be extruded.

To convert an object to paths:

1 Select the object you want to convert.

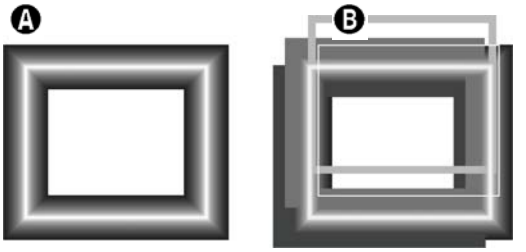
2 Choose Object > Path > Convert To Paths. Canvas converts the object to one or more paths.

To convert objects to simple paths

This operation facilitates the rapid conversion of vector objects into a simple path. Now any Canvas object or a group of objects can be converted into simple paths. At the same time, these objects will maintain their Canvas inks settings and stroke types.

The Convert to simple paths command breaks down everything Convert to path does not. It also breaks down strokes and inks to simple, yet editable, Bézier paths and polygons.

The object A (below) is an object with a neon stroke.



1 First select object A.

2 Choose Object > Path > Convert to Simple Paths.

3 After completing this operation, choose Object > Ungroup.

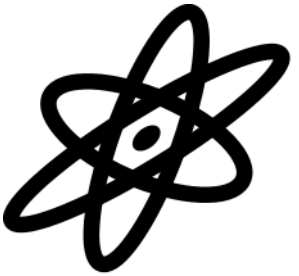
At this point, (B) all high level drawing features that are contained in the object are reduced to individually editable polygon and Bézier objects.

Outlining path stroke

An illustrator may find it necessary to outline a path stroke when working with logos, intricate artwork, or traced images, etc., especially if the illustrations will be resized.

Illustration with a 6—point stroke resized to be 50% smaller

Even when reduced, the object maintains stroke size



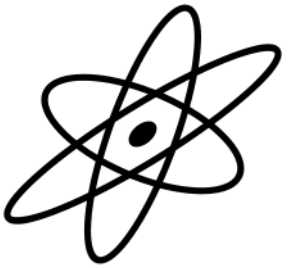
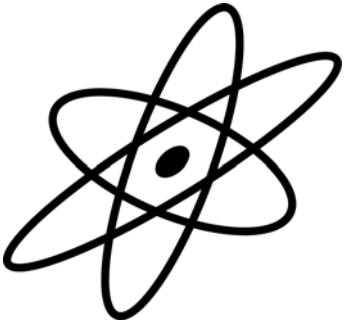


Illustration with a converted stroke resized by 50%

After conversion, the stroke size is no longer a factor when reducing objects

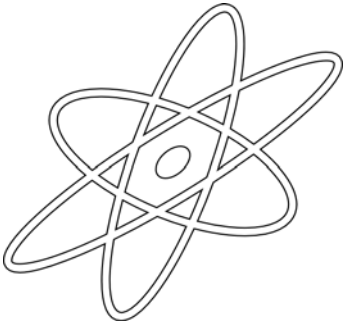
- **To access this command:** Select the vector object and choose Object > Path > Outline Path Stroke.

Note: You can apply this command to more than one selected vector object or even a grouped object.



Original illustration

Illustration with outlined path stroke



To ungroup objects made of multiple paths

When you convert multiple objects, characters, or specialized vector objects to paths, Canvas creates a separate path for each shape and groups them. Choose Object > Ungroup to separate them.

For example, if you convert a five-letter word to paths, the resulting object is a group of five paths. To edit just one of the five paths, first choose Object > Ungroup. Or, use the Direct Selection tool to select one path without ungrouping.

Making and breaking composite paths

Create openings in a filled path by incorporating multiple paths into a single, composite path. Areas between the paths and areas where the paths intersect are transparent.

- **To create a composite path from multiple paths:** Select the paths you want to make into a composite path. Choose Object > Path > Make Composite or click the Make Composite button in the Properties bar.
- **To separate a composite path:** Select the composite path and choose Object > Path > Break Composite or click the Break Composite button in the Properties bar.

To symmetrically resize path points

When using the Symmetrical Drag feature, you can easily create a symmetrical design from a circle, rectangle, or a complex group of objects.

1 Select an object and place it into path edit mode (**A**).

2 Right-click to open the context menu.

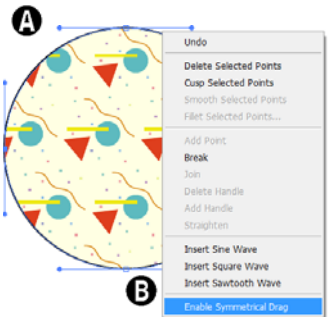
3 Choose Enable Symmetrical Resize (**B**).

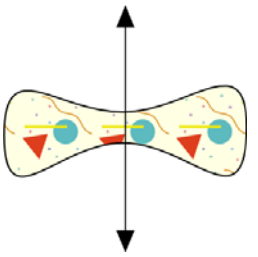
4 Release the mouse and select any of the object's control points.

5 Drag to create a new shape for the object.

When you drag the selected control points, notice that the shape is resized from the center of the object.

✓ Tip
You also have the ability to select all of the control points, and drag. Doing so will allow you to quickly resize the object while retaining proper object constraints.





Dragging will resize the object.

Simplifying vector paths

The Reduce Points command lets you simplify vector paths by reducing the number of anchor points in the path.

Simplifying is a good practice when paths you import or create have a very high number of anchor points. These paths can cause

slow printing or printer errors, especially when memory is limited. If you have problems printing a complex vector path, try simplifying it.

Use the Reduce Points command when one vector object is in path edit mode, or when one or more vector objects are selected.

Reduce Points works with objects created with the Curve, Auto Curve, Freehand, Smooth Polygon, and Polygon tools. You can apply it to objects created with other tools if you use the Object > Path > Convert to Paths command to convert the objects to vector paths.

Reduce Points is not available when specialized vector objects (Concentric Circles, Smart Shapes, Multigons, and similar objects) are selected or in edit mode. These objects must be converted to paths to simplify them.

To use the Reduce Points command

1 Select one or more vector objects, or place one object in path edit mode (select it and choose Object > Edit). In edit mode, you can select three or more anchor points and apply Reduce Points.

2 Choose Object > Path > Reduce Points. A dialog box appears.

3 Drag the slider to set the relative number of anchor points to use for the path.

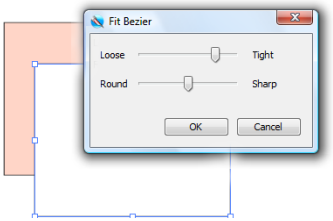
Loose leaves fewer points in the path by tracing the original path more smoothly.

Tight removes fewer points by tracing the original more closely. When more points are removed, the change in the path can be greater.

4 Click OK to modify the path.

Converting polygons to Bézier objects

The Fit Bézier command changes a polygon to a Bézier curve path. This command can be applied to a single selected polygon that is not in edit mode.



Using this command can have varied results, depending on the settings you use. You can convert a polygon without changing its shape. Or, use the command to smooth the straight segments of a polygon into gentle curves.

Fit Bézier is useful when you want to use handles attached to smooth anchor points to "bend" straight path segments into curves. Using Fit Bézier adds handles to all the corner points (which do not have handles) that define a polygon.

To use the Fit Bézier command

1 Select a polygon (open or closed).

A polygon can be created with the Polygon tool, Smooth Polygon tool, or Curve tool if the path has only corner points, not smooth points. Objects created with the Rectangle tool or Line tool can be converted to polygons with the Object > Path > Convert to Paths command.

2 Choose Object > Path > Fit Bézier. A dialog box with two sliders appears.

3 Use these to adjust the following conversion settings:

Loose-Tight Controls how closely the modified path will conform to the original path. Tight results in little deviation from the original path. Loose allows the modified path to be smoother and deviate farther from the original.

Round-Sharp Controls how many corners will become rounded in the modified path. Sharp preserves corners where segments meet at acute angles. Round allows all corners to become rounded.

These settings can interact and produce similar results at different slider positions; e.g., setting one slider at Tight and the other at Round can produce a path that closely matches the original, but with all corners being rounded. Setting one slider at Loose and the other at Sharp can result in a path that overall is smoother, but which has some corners that are not smoothed at all.

4 Click OK when you're done. Canvas modifies the object based on the settings you specified.

CHAPTER 19

PRECISION DRAWING & DIMENSIONING

This chapter describes precision drawing tools and techniques that can help you create scale drawings, floor plans, architectural designs, and other types of technical drawings. This chapter explains how to

- display size information as you draw
- set up the scale for scale drawings
- add dimension objects to illustrations
- use Smart Mouse to align objects

Some of the techniques described elsewhere in this book also apply to precision drawing. For information on document setup and using rulers, see "Document setup," page 10.1.

Setting up a document's measurement scale

Canvas offers a variety of options for creating scale drawings. You can use the Add unit feature to define a new unit of measurement for a particular document or redefine an existing unit (see "Adding and modifying units of measurement," page 10.8). You can also set up a ruler to control the scale of an entire document as well as customize scale settings for individual dimension objects (see "Setting up rulers," page 10.7). Other settings affect the format of measurement and position data.

The following settings affect the measurement of objects in a document:

Rulers Set up a document's overall drawing scale using the Ruler manager and document scale. The document scale affects all object measurements, including those made with the Dimensioning tools. The document scale also affects data in the Properties bar and Object Specs palette (see "Setting up rulers," page 10.7 and "Set Document Scale," page 10.12).

Number Form A setting in the Ruler manager affects the format of data in the Properties br and other displays. This option controls the precision of data and the number format (decimal or fractions) (see "To set up rulers," page 10.7).

Dimensions You can customize individual dimension objects with the Dimensioning controls in the Properties bar.

Floating point technology

Projects in the scientific, engineering, medical, and biotechnology industries demand the highest levels of precision.

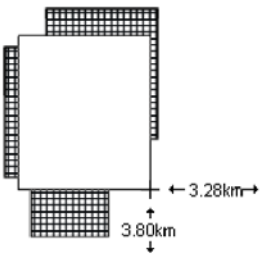
When working with very small units of measure, errors can occur since no human system of numeration can give a unique representation to every real number because there are simply too many of them.

To meet the demand for increased decimal precision, the Institute of Electrical and Electronics Engineers (IEEE) has produced a standard for binary floating point arithmetic (IEEE 754-1985). This standard specifies how single-precision (32 bit) and double-precision (64 bit) floating point numbers are to be represented, as well as how arithmetic should be carried out on them. An application that supports this technology will generate a floating point number; i.e., the decimal point literally "floats," and, therefore, achieves a more precise fractional result.

Without installed support for the floating point standard the computations within a computer design environment will generate only a close approximation of a requested command. Although these calculations may generate satisfactory results for most purposes, the demands that exist within the science, engineering, medical, and other related professions dictate that only extremely accurate results be used within projects.

Canvas' drawing engine fully supports the IEEE floating point standard.

Displaying dimensions as you draw



When Show Size is active, Canvas displays the scaled size of the object as you draw.

Canvas can display the horizontal and vertical dimensions of an object as you draw it. The Show Size command makes dimensions (in scale) appear at the pointer as you drag with any drawing tool. These dimensions do not remain in the document.

- **To display dimensions when you use drawing tools:** Choose Layout > Display > Show Size. When you select a drawing tool and drag the pointer in an illustration, the object's vertical and horizontal measurements appear at the pointer.

Note: The Show Size option can also be toggled in the Display Options manager in the Configuration Center.

- **To turn off the dimensions display:** Choose Layout > Display > Hide Size.

Using the Dimensioning tools

You can easily add formatted dimensions to documents with the Dimensioning tools. These tools can measure horizontal, vertical, oblique and perpendicular distances; measure diameter, radius, angle, area, and perimeter; and mark the centers of arcs and ovals.

The dimensioning tools are grouped in a single palette (see "Tool palettes," page 9.6). The Linear, Chain, and Baseline tools allow you to create horizontal, vertical, or oblique dimensions, depending on the position of the cursor upon creation.

Tip
Baseline dimensions are a series of measurements made from a common starting point. Chain dimensions are a series of measurements in a row.

In addition, when using the Chain and Baseline Dimensioning tools, you define the first two points as you would for a Linear dimension. Then, just click on every point you want to add to the dimension, and the tool creates the dimension object automatically. The result of using the Chain or Baseline Dimensioning tool is one single object. The current limit for Chain Dimensions is 16.

Create dimension objects that conform to industry standards, including ANSI, DIN and JIS. You can also customize the standard settings — the size of lines, gaps, text, and tolerances — and then save these settings as new standards (see "Using industry standards for dimension objects," page 19.9).

Dimensioning procedures

Dimensioning tool	Prompts	Procedure
 Linear (Horizontal, Oblique, and Vertical)	Click 1st Point, Click 2nd Point	Click the start point for the measurement, then click the end point and anchor the dimension object.
 Baseline and Chain (Horizontal, Oblique, and Vertical)	Click 1st Point, Click Next Point	Click the start point and then click the end point for the first measurement; anchor the first part of the dimension object. Click the next measurement point and anchor the next part of the dimension object. Continue until finished, then press Esc.
 Angle	Click 1st Line, Click 2nd Line	Click the start point for the angular measurement, then click the end point.
 Perpendicular	Click Line, Click Point	Click the line to measure from, then click a point anywhere to take a perpendicular measurement from the line to the point.
 Object Side	Click Object Side	Click the side of the object to be measured.
 Radius, Diameter, and Center	Click Arc/Ellipse	Click anywhere on the arc or ellipse and then anchor the dimension object.
 Area and Perimeter	Click Object	Click anywhere on the object to be measured and then anchor the dimension object.

To use the Linear Dimensioning tool

1 Select the Linear Dimensioning tool. When you move the cursor into the drawing area, a prompt appears.

2 Define the first two points of the dimension as indicated by the prompt. Depending on the cursor's position, the type of dimension changes according to the mouse movement.

3 Click the third time to create the dimension object.

To use the Chain and Baseline Dimensioning tools

1 Select either the Chain or Baseline Dimensioning tool. When you move the cursor into the drawing area, a prompt appears.

2 Define the first two points of the dimension as indicated by the prompt. Depending on the cursor's position, the type of dimension changes according to the mouse movement.

3 Click the third time to create the first dimension.

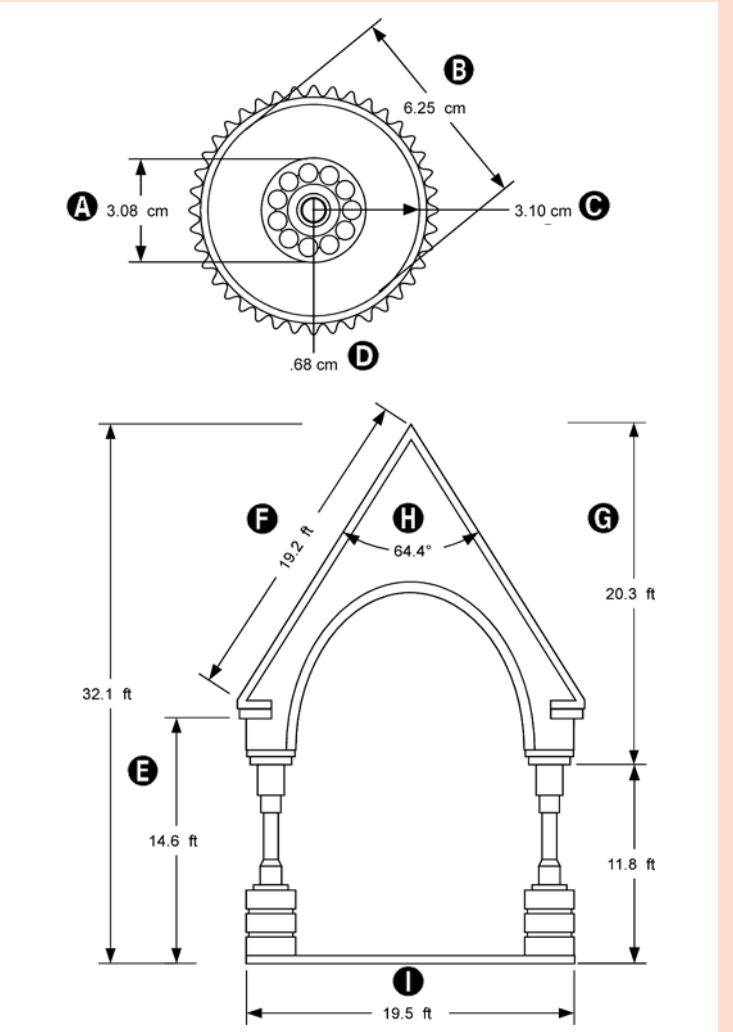
4 Click on other points to add them to the dimension object.

Types of dimensioning tools and measurements

Use the dimensioning tools to add measurements to illustrations. Different tools let you create different types of dimension objects.

Baseline and chain dimensioning tools create a single dimension object. Baseline dimensions contain several measurements from a common starting point. Chain dimensions are a series of measurements.

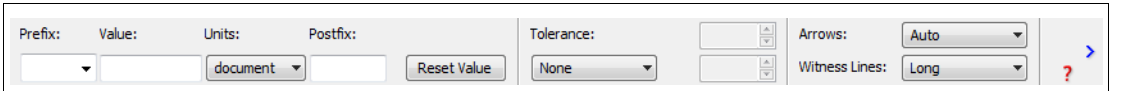
A Vertical
B Oblique
C Radius
D Diameter
E Vertical Baseline
F Oblique (with aligned text)
G Vertical Chain
H Angle
I Horizontal



Using the dimensioning settings

You can customize the measurement units, scale, arrow position, tolerance text, and other settings for dimension objects. Use the Dimensioning settings in the Properties bar. These settings are available when you select a Dimensioning tool or have selected a

dimension object. Depending on the selected Dimensioning tool or object, the Properties bar will display various settings (see "Dimensioning settings," page 19.6).



Dimensioning settings

Prefix. Select a prefix from the menu. The available prefixes depend on the Dimensioning tool used. You can also enter a customized prefix.

Value. Indicates the size of the dimension object. You can change the text value of the dimension object by entering a value in this field. The actual object size does not change. If you want to change the actual size of the dimension object, select the Allow Change Size checkbox. Click Reset Value to recalculate the measurement.

Units. Select a unit of measurement from the menu. If you have several dimension objects in a document, each dimension object can use its own unit of measurement. Use the document unit or a different unit of measurement from the menu. Selecting a different unit of measurement overrides the document unit for that dimension object.

Postfix. Enter a message that is to follow the value; e.g., 10.2 cm R, where "R" is the Postfix, indicating a radius of 10.2 cm.

Tolerance. Add a tolerance to the end of the measure. "None" is the default, which means nothing is added; however, you can choose to add Bilateral tolerance "± value" or Unilateral tolerance "+ value - value".

Bilateral prints the tolerance amount with "± " and the dimension text. Unilateral tolerance prints both tolerance amounts and the dimension text.

Arrows. This controls the placement of the arrows. Select either Inside, Outside, None, or Auto (default) (see "Style and Text Display settings," page 19.8).

Witness Lines. This controls the length of witness lines. Select either None, Short, or Long.

Precision. You can choose from no decimals to six decimals, or even use fractions. Each dimension object can have a different precision.

Scale. Define the scale for the dimension object. If you select Define custom scale, the Custom scale dialog box opens. Each dimension object can have a its own scale. The dimension object scale is independent of the document scale.

Leaders. This controls the placement of the leaders. Select either None, Left, Right, or Auto (default).

Display Units. Select this checkbox to make the unit of measurement appear in the dimension object.

Separate Thousands. Select this checkbox if you want to have a comma separator for digit grouping.

Outside Lines Only. Select this checkbox to keep the dimension object outside of the object. This option applies to Radius and Diameter objects.

Use Secondary Units. Select this checkbox if you want your dimensioning object to display two different units of measurement; e.g., inches and centimeters (cm). Choose the secondary unit of measurement from the menu.

Text Display. This controls the placement of the dimension text (see "Text Display," page 19.8).

Standard. Select a dimensioning standard from the menu: ANSI, BS-380, DIN, ISO, or JIS. The Standard refers to the length of lines, size of tolerance text, placement of the text, placement of the arrows, etc.

Add. Click this button to add a custom dimension standard (see "New Standard Definition," page 19.9).

Edit. Click this button to modify a dimension standard (see "New Standard Definition," page 19.9).

Remove. Click this button to remove the selected dimension standard (see "To delete a custom standard," page 19.10).

To change the properties of existing dimension objects

1 Select the dimension object. The settings appear in the Properties bar.

2 Make any adjustments with the settings.

Note: You can change the properties of multiple selected dimension objects as long as the dimension objects are of the same type.

To change the settings for dimensioning tools

1 Select the Dimensioning tool. The settings appear in the Properties bar.

2 Make any adjustments to the tool settings and then create the dimension object (see "Dimensioning settings," page 19.6).

Attributes of dimension objects

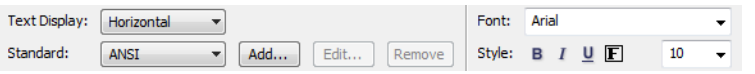
When you are using a dimensioning tool, the pen ink of the dimension object appears black with a 1-pt stroke; however, once you complete the object, the pen ink switches to the current ink and stroke settings. By default, the dimension text is 10 pt and uses Arial. In addition, the current stroke color is applied to the dimension text.

You can change the current ink, stroke, and text settings for new dimension objects, and you can change these settings for existing dimension objects.

- **To change the appearance of a dimension object:** Select the object and use the Presets palette to select ink color, pen size, and arrows for the dimension object.
- **To change attributes for new dimension objects:** Make sure that no objects are selected in the document, and then use the Presets palettes to change the current stroke and ink settings for new objects and text.

To change the text attributes of a dimension object

The Properties bar allows you quick access to text formatting options for various dimension objects.



Tip
The Properties bar must be displayed to view the Dimensioning settings. If not open, choose Window > Show Properties Bar.

Important
Dimension objects can still display arrows if all the preset arrows have been deleted from the Arrow tab in the Presets palette.

Tip
You can scroll the Properties bar if all the options are not visible. Arrows appear on the left and right indicating that other options are available.

Text Display Refers to the placement of dimension text in relation to the object.

- **Horizontal:** Text is aligned horizontally in the dimension object.
- **Aligned:** Text is aligned with the angle of the dimension arrows.
- **Above:** Text runs above the dimension arrows.
- **Below:** Text runs below the dimension arrows.

Font & Size Select a new font and font size for the text from the menus.

Style Click the buttons to apply a style to the text (Bold, Italic, Underline, and Frame).

Note: You can also change the font, size, and styles by using the Text menu or Type palette.

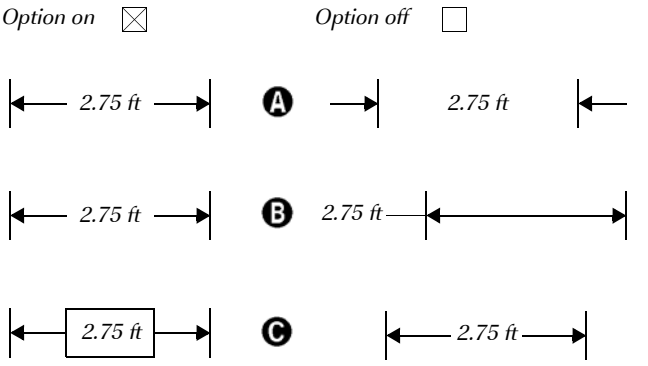
Style and Text Display settings

Use the following style options in the Properties bar to customize the appearance of dimension objects.

A Text Always Centered. Select this option to keep the text between the arrows. Must be off to drag dimension text outside the witness lines.

B Frame Text. Turn this option on to frame the dimension text.

C Use Fill Color for Text. Select this checkbox if you want the dimension text to use the fill color rather than frame color of the object.



Linking dimensions to measured objects

Since dimension objects aren't attached to the objects they measure, dimensions do not change when you resize objects you have measured. However, you can group a dimension object and the object that it measures. When you do this and then resize the object, the dimension changes accordingly.

- **To group an object and a dimension object:** Select the dimension object and the measured object and choose Object > Group.

Using industry standards for dimension objects

If you want to use industry standard settings for dimension objects, open the Standards menu in the Properties bar. Select a dimensioning standard from the menu: ANSI, BS-380, DIN, ISO, or JIS. The Standard refers to the length of lines, size of tolerance text, placement of the text, placement of the arrows, etc.

Choose from five standard measurement systems:

ANSI American National Standards Institute

DIN Deutches Institut für Normung

BS-380 British Standards Institute

ISO International Organization for Standardization

JIS Japanese Industrial Standard

To add a custom standard definition

1 Click the Add button. The New Standard Definition dialog box opens.

2 Use the controls to create and define dimensioning standards (see "New Standard Definition," page 19.9).

New Standard Definition

Once defined, custom standards appear in the Standard menu in the Properties bar.

A Standard Name. Enter a name for the new standard.

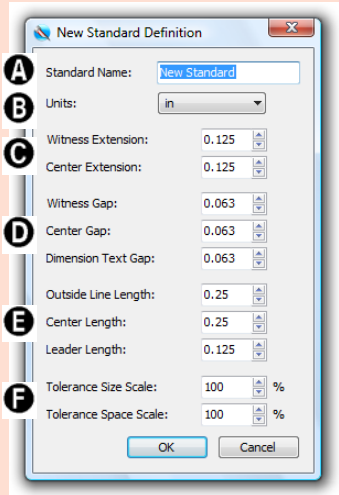
B Units. Select the unit of measurement that you want to use for all settings in the dialog box.

C Extension. Set the length of the witness lines' extensions and the center line extension.

D Gap. Set the size of the gap between the witness lines and measurement points on objects; the gap between the center extension and center point mark; and the gap between the dimension text and dimension arrows.

E Length. Set the length of the arrow lines (applies only when arrows are outside the witness lines); the length of center extension lines' leader characters; and the length of the center extension line.

F Tolerance Scale. The size of tolerance text and space between tolerance text, as a percentage of the dimension text size and spacing.



- **To edit a standard definition:** Select a dimensioning standard from the menu. Click the Edit button. The Edit Standard Defini-

tion dialog box opens. For an explanation of the various options, see "New Standard Definition," page 19.9).

To delete a custom standard

1 Open the Standards menu.

2 Select the custom standard definition to be removed.

3 Click the Remove button.

Using Smart Mouse for precise alignment

Smart Mouse is a drawing aid that can help the cursor precisely snap to a point on another object when you are drawing. Snap constraints like Smart Mouse are particularly useful when creating technical illustrations or documents in which micron-precision is paramount since it can snap the pointer to the corners, edges, and other points of objects.

Tip
Turn off Snap To Grid by choosing Layout > Snap To > Grid. If there is no checkmark, the option is already turned off. If Snap To Grid is on, the pointer will snap to the grid and not to active Smart Mouse constraints.

- **To open the Smart Mouse palette:** Choose Layout > Smart Mouse or Window > Palettes > Smart Mouse.

Types of Smart Mouse constraints

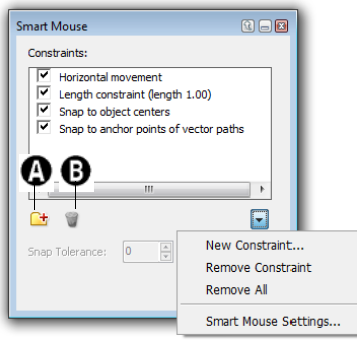
The Smart Mouse tool has 14 types of constraints for your use. The constraints make the pointer (and objects that you draw or drag) snap to corners or centers of objects, even divisions (such as the midpoints) of object fractions, specified lengths or angles, horizontal, vertical, or diagonal movement, tangential or perpendicular alignment with objects, or edges of vector objects.

Relative constraints Indicate the relationship between the beginning position and current position when you draw or drag an object. These constraints can display indicators to indicate a constraint is met. The relative constraints are: Horizontal, Vertical, Diagonal, Angle, Multiple Angle, Length, Parallel, and Tangential & Perpendicular.

Absolute constraints Indicate the relationship between the pointer and objects. These constraints (except Object Edges) can display indicators to show a constraint is met. The absolute constraints are: Object Corners, Object Fractions, Polygon & Bézier Anchors, Polygon Fractions, and Object Edges.

Smart Mouse constraints

When this constraint is active	Smart Mouse snaps objects and constrains the pointer to
Angle	A specified angle
Diagonal	Straight diagonal movement — all multiples of 45°
Horizontal	Straight horizontal movement— 90° and 270°, or 0° and 180°, depending on the current coordinate system
Vertical	Straight vertical movement — 0° and 180°, or 90° and 270°, depending on the current coordinate system
Length	A specified length in points (based on 100% magnification)
Multiple Angle	All multiples of the specified angle
Tangential & Perpendicular	Movement in a straight line, tangent or perpendicular to vector objects
Object Bounds	The bounding box of vector objects
Object Bounds Fractions	A specified division of vector objects; e.g., specify 1/2 to snap to the center of objects
Object Points	Any anchor point on the paths of vector objects
Object Paths	Edges of the paths of vector objects (not their bounding boxes); when Object Paths is active, other constraints don't affect the pointer
Object Paths Fractions	Specified divisions of the paths of vector objects; e.g., the pointer snaps to the midpoints of paths if you specify 1/2
Parallel	Mainly used to facilitate drawing parallelograms. When drawing a polygon, the Parallel constraint checks all previously drawn lines and attempts to make the next line parallel with some of them.



Constraints are listed at the top of the Smart Mouse palette. A checkmark indicates active constraints.

To add and activate constraints

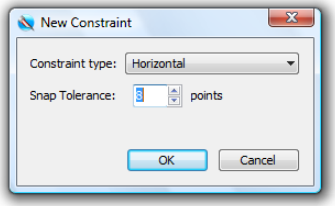
When you add a constraint, it appears in the Smart Mouse palette.

1 To add a constraint, select New Constraint from the palette or click the New Constraint button (A). The New Constraint dialog box opens.

2 Select a constraint from the Constraint type menu. The individual constraint settings at the bottom of the dialog box change according to the constraint selected in the menu.

For this constraint	Enter this value
Object Bounds Fractions, Object Paths Fractions	Number of divisions; e.g., type 2 if you want the constraint to snap to the middle (1/2 point) of an object or object path.

For this constraint	Enter this value
Angular	Angular measurement in degrees.
Length	The distance



Note: All constraints require a Snap Tolerance, which is indicated in points. Snap Tolerance is the maximum distance, horizontally or vertically, from a target point at which the constraint causes the pointer to snap to the target point.

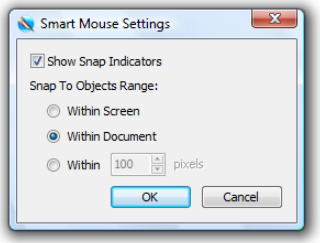
3 Click OK to close the New Constraint dialog box. The constraint now appears in the Smart Mouse palette. When a constraint is added, the checkbox is automatically selected indicating that the constraint is active.

Priority of constraints

When multiple constraints are active, the constraint at the top of the constraint list takes precedence. When a new constraint is added, it appears at the bottom of the constraint list. To change the priority of a constraint, drag it to a new position in the list.

- **To activate a constraint:** In the Smart Mouse palette, select the constraint's checkbox.
- **To deactivate a constraint:** In the Smart Mouse palette, deselect the constraint's checkbox.
- **To modify an active constraint:** Select the active constraint. The individual constraint settings appear at the bottom of the palette. Make any changes to the constraint and press Enter.
- **To remove a constraint:** Select the constraint in the palette and then click the Trash icon (**B**). You can also select the constraint and choose Remove Constraint from the palette menu. Choose Remove All from the palette menu to delete all current active constraints.

Smart Mouse settings



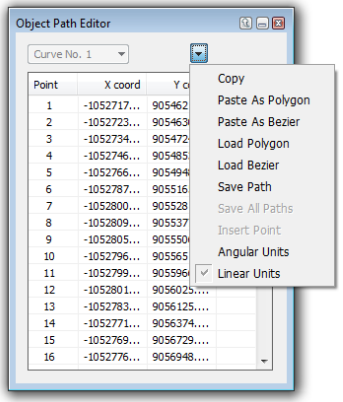
To access these settings, open the palette menu and select Smart Mouse settings.

Select the Show Snap Indicators checkbox if you want to show that Smart Mouse is active. This setting also indicates that constraints are met. If this option is selected, you'll notice that a small square appears by the cursor.

You can also select the range for the snap function.

Option	Definition
Within Screen	Object must be within the screen area to trigger the constraint. This range is useful if layout area contains several objects and the zoom in feature is used.
Within Document	Object must be within the document area to trigger the constraint.
Within x.xx pixels	For absolute constraints only, specifies how close the pointer must be to an object for the object to trigger the constraint.

Object path editor



This new function allows you to view as well as edit the X/Y coordinates of each individual point of a basic vector object, polygon, or Bézier curve.

Note: Basic vector objects are rectangles, lines, ovals, and arcs.

To view the points of a single object

1 Select the object.

2 Open the Object Path Editor palette by choosing Object > Object Path Editor. The individual points are listed in the left column with their corresponding X/Y coordinates in the middle and right columns.

Note: If you have the GIS+, you can select the Angular Units in the palette menu to view the points' coordinates in angular units as opposed to the X/Y position.

To view the points of multiple objects

1 Press Shift and double-click each object to place it in edit mode.

2 Open the Object Path Editor (Object > Object Path Editor). The Curve menu is now active.

3 Select the curve whose points you want to appear. The curve number in the menu is according to the stacking order. The individual points are listed in the left column with their corresponding X/Y coordinates in the middle and right columns.

To edit X/Y coordinates

1 Click in the X or Y field of the point to be modified.

2 Enter the new coordinate.

3 Press Enter.

To copy X/Y coordinates

1 Select the object.

2 Open the menu of the Object Path Editor palette.

3 Select Copy.

4 Paste the coordinates in the other application.

To paste as polygon or Bézier

With the Object Path Editor, you can create a polygon or Bézier curve with point values copied from a spread sheet or tab-delimited file.

1 Copy the point values in the spreadsheet or tab-delimited file.

2 Open the menu of the Object Path Editor palette.

3 Select either Paste As Polygon or Paste As Bézier.

To load polygon or Bézier

With the Object Path Editor, you can create a polygon or Bézier curve with point values found in a .txt, .csv, or .prn file.

1 Open the menu of the Object Path Editor palette.

2 Select either Load Polygon or Load Bézier.

3 Navigate to the file and click Open.

To save a path

1 Open the menu of the Object Path Editor palette.

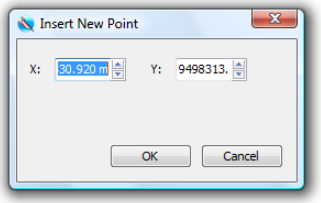
2 Select Save Path.

3 Enter a name for the file in the dialog box and navigate to the folder. You can use .txt, .csv, or .prn format.

4 Click Save.

To insert points

With the Object Path Editor, you can insert points within a path.



1 Place an object into edit mode.

2 Select an anchor point.

3 Open the menu of the Object Path Editor palette.

4 Select the Insert Point option and the Insert New Point dialog box opens.

5 Enter the X/Y coordinates for the new point.

6 Click OK.

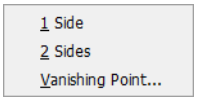
CHAPTER 20

VECTOR EFFECTS

Canvas has several special effects that let you develop complex illustrations from basic objects. You can apply the effects described in this chapter to any vector object; some can be applied to text objects, too (see "Type effects," page 32.1). These commands help save time by quickly generating new objects and letting you easily modify the appearance of existing objects.

As you apply effects to objects, keep in mind that some of these operations are system memory-intensive and might significantly increase the resource and storage requirements of a document.

Perspective effects



Commands in the Object > Path > Perspective menu can be used to modify vector objects. The 1 Side, 2 Sides, and Vanishing Point commands let you slant the bounding boxes of vector objects to align with vanishing points. By applying these commands, you can make vector objects appear to be drawn in perspective views.

About the vanishing point

The Perspective commands apply perspective effects based on a vanishing point. There is one global vanishing point in a Canvas document. When you use the 1 Side or 2 Sides commands, you set the vanishing point by dragging a control handle. When you use the Vanishing Point command, you can set the vanishing point by clicking in the document or entering coordinates.

Using the 1 Side and 2 Sides commands

The 1 Side and 2 Sides commands let you apply perspective effects to vector objects by dragging control handles. To use these commands, select a single vector object or a group of vector objects. These commands are not available if multiple objects are selected, or if a paint or text object is selected.

To apply perspective with 1 Side or 2 Sides

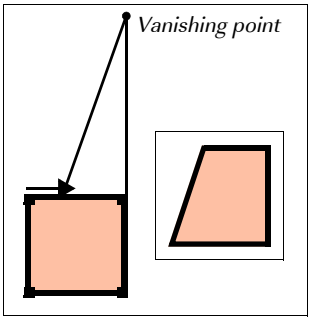
1 Select a vector object or a group of vector objects.

2 In the Object > Path > Perspective menu, choose 1 Side or 2 Sides.

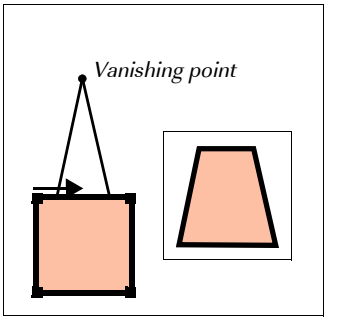
3 Control handles appear at the corners of the bounding box of the selected object. Drag any of the handles to apply the perspective effect. As you drag a handle, guide lines indicate the position of the vanishing point, which extend beyond the current view.

- If you choose 1 Side, the side of the object's bounding box where you drag a handle will slant to a vanishing point. You can adjust the object's sides independently.
- If you choose 2 Sides, as you drag a handle, the opposite sides of the object's bounding box will slant equally toward a vanishing point located along the object's vertical or horizontal center axis.
- When the pointer is on a control handle, a four-arrow symbol indicates that you can drag horizontally or vertically. To change directions, point to a control handle until the four-arrow symbol appears again.

4 When you finish, press Esc to deselect the object.



1 Side perspective



2 Sides perspective

Using the Vanishing Point command

The Vanishing Point command applies a perspective effect to one or more vector objects. The command slants the bounding boxes of selected vector objects so the objects appear in perspective based on a vanishing point that you select.

The Vanishing Point command is available when vector objects or groups of vector objects are selected. The command is not available if a paint or text object is selected.

To apply perspective using a vanishing point

1 Select one or more vector objects or groups of vector objects.

2 Choose Object > Path > Perspective > Vanishing Point.

3 A dialog box appears. It displays the coordinates of the global vanishing point. Change the coordinates to move the vanishing point, or click in the document to set the vanishing point.

- To enter coordinates, type coordinate values in the text boxes. Coordinates are based on the document's rulers.
- To set the vanishing point visually, click Choose. Move the pointer and click to set the vanishing point. The coordinates of the point you click appear in the text boxes.
- To restore the previous vanishing point coordinates, click Reset.

4 Click OK to apply the perspective effect.

Note: The Effects > Remove Effects command will not remove perspective effects that have been applied to objects.

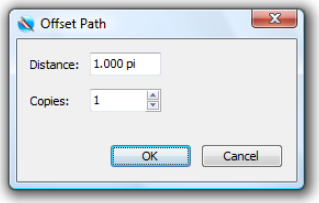
Offsetting paths

✓ Tip
Composite objects created by the Concentric Circles, Spiral, Cube, GridMaker, or Multigon tools cannot be offset.

Use the Offset Path command to create new objects that follow the path of a vector object.

An offset object's path follows the inside or outside of the original object's path. Specify the offset distance and the number of objects to create. You can offset one vector object at a time.

To offset an object



1 Select a vector object and choose Effects > Offset Path.

2 In the Offset Path dialog box, type the offset distance in the Distance box. In the Copies box, type the number of copies to make.

3 Click OK to create the offset objects.

Canvas applies the current inks and stroke to offset objects (see "Inks: colors & patterns," page 14.1 and "Strokes: outline effects," page 15.1). The new objects appear in front of the original if they are smaller; otherwise, they appear behind it.

The direction of the offset depends on whether you type a positive or negative Distance value.

When you offset an object that has an open path, type a negative value to offset the new object to the inside of the curve. Type a positive value to offset the new object to the outside of the curve.

When you offset an object that has a closed path, type a negative number to offset the new object to the inside of the original path. Type a positive number to offset the new object to the outside of the original path.

An offset object can differ in shape from the original object, if a large offset distance makes the path cross itself to follow narrow angles or tight curves of the original object.

Using clipping paths

A clipping path is a special object that creates a frame or window on an object. You can use text objects and vector objects as clipping paths.

You can apply a clipping path to one or more objects. The clipping path frames the objects to which it is applied. Anything inside the clipping path remains visible, while anything outside the path is hidden, or "clipped."

If you apply an oval clipping path to a photo, for example, the photo is visible inside the oval, while any part of the photo outside the oval is not visible.

Since clipping paths are vector objects, clipping effects print smoothly at maximum resolution on any printer, including PostScript and non-PostScript devices.

Clipping paths create hard-edged effects. Clipping paths are often used to "cut" photos and illustrations into shapes such as circles or curves. Use text as a clipping path to create the effect of text characters filled with photos or other graphics (see "Using text as clipping paths," page 32.10).

If you want to create feathered or graduated clipping effects, use vector transparency masks and channel masks instead of clipping paths (see "SpriteLayer effects" on page 34.1).

To apply a clipping path

1 Position a text or vector object in front of the objects to be clipped. (select an object and choose Object > Arrange > Bring to Front to put the clipping object in front of other objects.)

2 Select both the clipping object and objects to be clipped.

3 Choose Object > Clipping Path > Make to clip the selected objects.

✓ Tip
If a selected object can't be used as a clipping path, the Clipping Path > Make command is not available.

If you want to use a special object (such as a star created by the Multigon tool) as a clipping path, the object must be converted to a vector path first. Select the object and choose Object > Path > Convert to Paths.

- **To hide clipping paths:** Choose Object > Clipping Path > Hide. Canvas makes the strokes of all clipping paths invisible.
- **To show clipping paths:** Choose Object > Clipping Path > Show. Canvas shows the clipping paths with a 1-point black stroke.
- **To remove a clipping path:** Select the clipping path or a clipped object and choose Object > Clipping Path > Release. Canvas restores the clipped objects to full view, and the clipping path object appears with its original attributes.



Text in front of paint object



Text clipping path

Editing clipping paths

After applying a clipping path, you can move it and the clipped objects independently. Dragging the clipping path frames a different part of the clipped objects. Dragging a clipped object changes its position inside the frame of the clipping path.

You can apply several effects to a clipping path. Select the clipping path and choose Effects > Freeform to display handles that you can drag to skew and rotate the clipping path. You can also apply the Fractalize, Rotate, and Flip commands to a selected clipping path.

You can reshape a clipping path in several ways. Select a clipping path and drag its handles to change the size or shape of its bounding box. To reshape a vector object path, double-click it, or select it and press Ctrl+E. With the path in edit mode, use path-editing tech-

niques to move, add, or delete anchor points. When you finish editing, press Esc to reapply the clipping path.

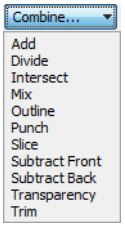
To edit a text clipping path, use the Text tool or double-click the text to put it in edit mode. You can insert and delete characters in edit mode. When you finish, press Esc to reapply the clipping path.

To change the formatting of a text clipping path, select the clipping path and use the Text menu or the Type palette to change its font, style, size, or other attributes. When a text clipping path is selected, you can use the Spell Check Selection command to check its spelling.

Because clipping paths are special objects, they do not display the pen inks, fill inks, or strokes of their original objects. Canvas displays clipping paths with 1-point black strokes (which the Clipping Path > Hide command makes invisible).

If you select a clipping path and change its inks or stroke, Canvas applies the attributes to the object, but the attributes aren't visible unless you use the Release command to convert the clipping path back into a vector or text object.

Combining objects



The Combine command in Canvas allows you to create new objects from the intersection of two or more vector objects. You can outline the overlapping objects, delete all except the overlapping area, subtract the overlapping area, and perform other combinations.

Combine effects

To access the Combine menu, select more than one vector object. To use a combine method, each selected object must overlap at least one other selected object.

To combine objects

1 Select two or more objects that you want to combine.

2 Open the Combine menu or use the Combine palette (Effects > Combine).

3 Select a combine method and the effect immediately happens.

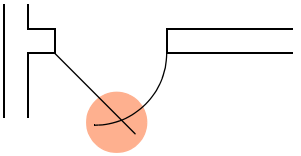
Selecting a combine method

The Combine menu contains various methods for combining objects. Some methods require that the paths of overlapping objects intersect for the effect to be visible or work properly. In addition, some methods work only with closed vector objects, and not with lines and open curves.

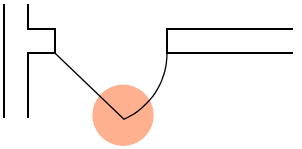
Trim Trims intersecting lines or arcs by shortening them until they meet at a vertex. You can trim a line to a line, an arc to an arc, or an arc to a line. In each case, Canvas trims the shorter segments of the intersecting lines and arcs. Trimmed lines and arcs remain separate and retain their attributes.

Trim also trims lines or arcs where they intersect closed vector objects. The vector objects do not change.

If Canvas can't trim the selected objects, a message tells you that the operation requires at least one open path.

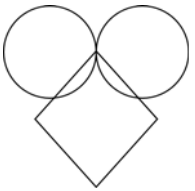


Original objects

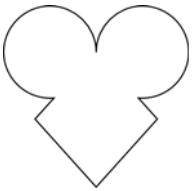


Trim applied

Outline Creates one path around the selected objects and fills the interior of the new shape with the ink of the front object.



Original objects: two circles and a rotated square



Objects combined with the Outline method



Outline shape smoothed into a heart using path-editing techniques

Add Joins two objects where they overlap to create a compound path, and fills the new shape with the ink of the front object. Compound paths can include multiple closed shapes that have holes in them, unlike objects created with the Outline option.

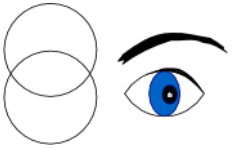
With the Add method, Canvas merges the cigarette to the prohibited symbol to create a no smoking sign.



Original objects



Combined with Add method



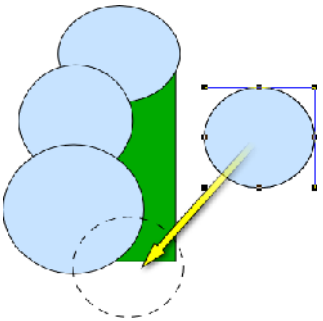
The Intersect method helps you create some useful, basic shapes. Here, the intersection of two circles (highlighted) results in an eye shape.

Intersect Creates a new object from the intersection of all selected objects and fills the new object with the ink of the front object. All selected objects must be closed paths and share a common area.

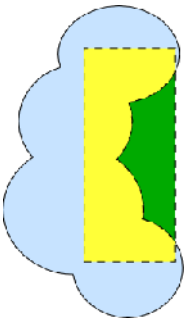
Punch Removes the area where selected objects intersect and fills the new object with the ink of the front object. If you select more than two objects, Canvas starts with the back object and continues forward through the stacking order.

Subtract Front Removes from the back object the areas of overlapping objects in front. The back object retains its ink attributes.

Create a quick illustration of a holly leaf by combining a group of circles with a rectangle and then applying the Subtract Front command to that selected group of objects.



Create and group objects



With objects selected, click the Subtract Front command



Finished object

Subtract Back Removes from the front object the areas of overlapping objects behind it. The front object retains its ink attributes.

Crop Removes areas of objects that are not behind the top object.



Oval used to crop a vector drawing of an airplane



A symbol-filled oval provides a background

Divide Creates new objects where selected objects overlap. This option lets you use lines to "cut" other objects in pieces.

Slice Cuts the path of an object where it intersects with objects in front of it in the stacking order. The slice method results in two closed paths; e.g., slicing a circle in half with a line produces two closed semicircles.

Mix Creates new objects where selected objects overlap, similar to the Divide option. However, Canvas fills overlapping areas with a new color (the original colors must be solid). To determine the new color, Canvas compares the CMYK values of all the overlapping objects and uses the highest value of each color. (If you are using RGB colors, Canvas first converts the colors to CMYK.) For example:

	Cyan	Magenta	Yellow	Black
Color 1	50	30	25	5
Color 2	25	40	20	0
New Color	50	40	25	5

Transparency Creates new objects where selected objects overlap, and fills overlapping areas with a new RGB color (the original colors must be solid). However, transparency lets you specify the level of transparency. When you select the Transparency option, enter a percentage in the text box that appears; 100% is completely transparent, and zero is opaque.



Using the Transparency method, the artist created the illusion that you can see through the cover of the CD case. You can see the bottom of the case through the cover.

Note: If multiple overlapping objects are grouped, Canvas treats the group as a single object and doesn't apply the transparency or mix effect within the group.

Blending objects

✓ Tip
Canvas can blend solid color inks only. If you blend objects with hatches, symbols, textures, or gradients, Canvas generates the blend objects but doesn't fill them with an ink.

Using the Blend effect, create gradual transitions in shape, color, and stroke width between two or more objects. Canvas generates a series of objects (from back-to-front through the stacking order) that appear to transform one object into another.

Artists often use blends to create highlights and shadows in vector drawings that provide the illusion of roundness and lighting. In addition, use blends to copy and evenly distribute objects around shapes to create borders.

To blend objects

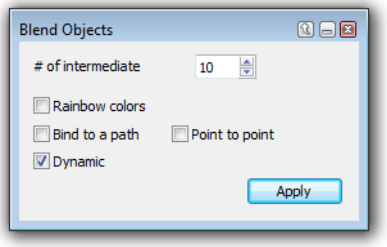
Select two+ vector objects. If necessary, choose Effects > Blend. Configure the settings and click Apply.

# of shapes. The number of objects Canvas creates for the blend. Higher numbers result in smoother blends.

Rainbow colors. Creates a rainbow-like blend of colors between objects. This introduces more color variations than a standard blend, which uses only combinations of the original colors. When you turn on this option, two buttons appear; choose a clockwise or counter-clockwise path around the color wheel.

Bind to a path. Select to use the path of an object (not in the current selection) to arrange blend objects. Click Apply and then you have to choose a path. Click the object to which you want to bind the blend objects.

Point to point. Available when blending two objects. This option lets you rotate blend objects, creating the illusion that one object is twisting into another. When you click Apply, Canvas prompts you to Choose 1st Point; click an anchor point on one object. Canvas then prompts you to Choose 2nd Point; click an anchor point on the other object. To reverse the blend direction, Ctrl-click when you choose the two points.



Dynamic. Lets you use the Direct Selection tool (hollow arrow) to accelerate, decelerate, expand, contract, and redirect the blend after Canvas creates it. Dynamic blends aren't available for specialized objects, such as multigons, spirals, concentric circles, and grids.

Using blends for dimensional effects

By specifying a high number of blend objects, you can create gradual transitions between shapes and colors. With the appropriate settings, colors seem to fade and mix into each other, and the blend objects do not appear as distinct objects. This effect is often used to add realistic highlights and shadows to objects so they appear three-dimensional.

✓ Tip
To ensure that blended objects have the same number of anchor points, copy an object, edit its shape, and blend between these objects.

When configuring the blend settings, remember that the size of the final output affects the number of shapes required to make the blend appear smooth. For large posters, you might need to use a lot of shapes, but fewer shapes are required for small illustrations.

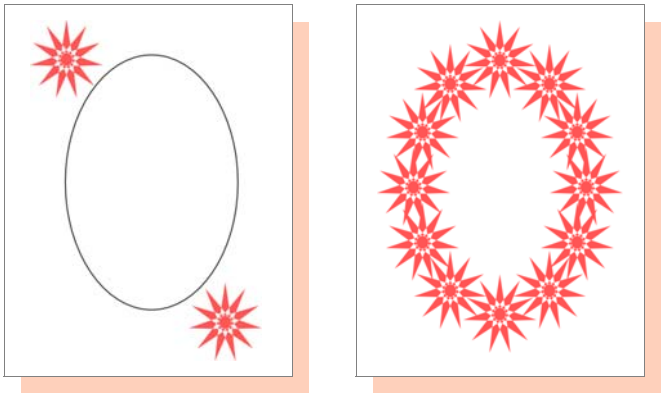
In addition, objects that you blend must have the same number of anchor points for the blend to appear smooth. Canvas uses the anchor points to calculate the steps and shapes in a blend; an inconsistent number of anchor points can cause unwanted twists and distortions.

Using blends to create patterns

Although blends are often used to create gradual, smooth transitions between shapes and colors, you can also use the Blend command to create and evenly space a pattern across a layout. By specifying a low number of shapes and widely spacing the front and

back objects, you can make each blend object a distinct object. This effect can be useful for creating borders and other patterns.

The artist created this border by first creating a flower-like multigon, copying it, and drawing an oval. To distribute the flowers evenly around the oval, the artist selected the two multigons, turned on the "Bind to a path" option in the Blend palette, specified a relatively low number of shapes (10) for the blend, and chose the oval as the binding path.

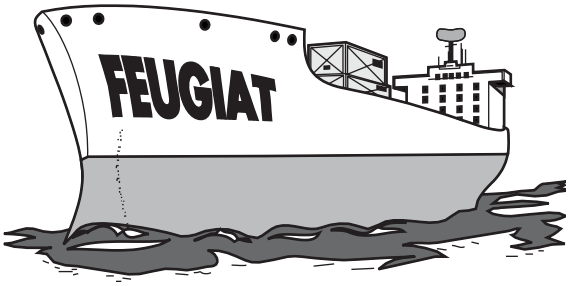


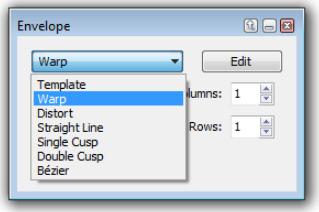
Enveloping objects

The Envelope command lets you distort shapes and text, as if an illustration was drawn on a rubber sheet and then stretched.

When an object is in envelope edit mode, its bounding box acts like the rubber sheet. Canvas includes several envelope styles that offer various handles you can use to stretch an object's bounding box. Using this effect, you can create new shapes, add a sense of motion to an illustration, arrange text so it appears to be painted on a three-dimensional object, or distort an image (see "Envelope effect," page 26.21).

The Envelope command distorted the type to match the contour of the ship's hull





Using envelope templates

Canvas has several envelope templates that you use to instantly distort shapes. The silhouettes in the template scroll list show the distortion created by each template.

In addition, you can create your own envelope templates. After you apply the envelope effect to an object, you can acquire the shape of the envelope as a template.

To apply an envelope template

1 Select a vector object.

2 Choose Effects > Envelope to open the Envelope palette.

3 In the palette, choose Template in the menu.

4 Select a preview shape in the scroll list to select it, and click Apply.

To save an envelope as a template

To store an object's envelope as a template, you must first use the envelope effect on the object (see "To apply an envelope effect," page 20.14). You can't acquire a standard vector shape, such as a circle, unless you first apply the envelope effect

1 Select an object that has been edited using the envelope effect. The object cannot be in envelope edit mode.

2 Choose Effects > Envelope to open the Envelope palette.

3 In the menu, choose Template.

4 Click Acquire; a preview of the envelope shape appears in the scroll box.

To delete an envelope template

1 In the Envelope palette, choose Template in the menu.

2 Click a preview shape in the scroll box to select it, and click Delete.

Using envelope styles

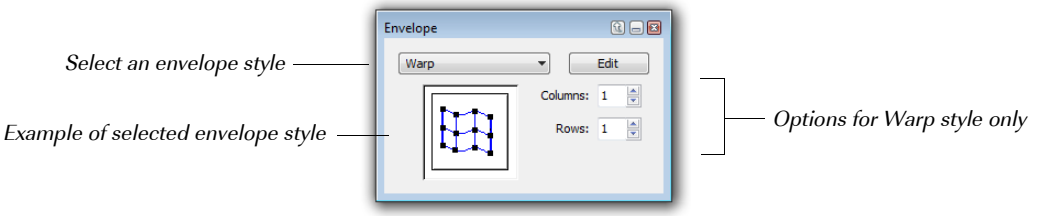
In addition to envelope templates, Canvas has six envelope styles that let you edit shapes in different ways. Each style moves and changes the bounding box in a particular way. See "Envelope styles

and editing options," page 20.14 for information on the attributes of each style.

To apply an envelope effect

1 Select a vector object.

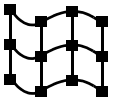
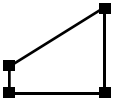
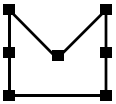
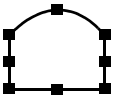
2 Choose Effects > Envelope to open the Envelope palette.

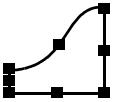


3 Choose an envelope style in the menu and click Apply.

4 Drag the envelope handles that appear on the bounding box of the object to edit the shape.

Envelope styles and editing options

Example	Style	Number of handles	Envelope behavior
	Warp	Enter the number of horizontal and vertical handles in the text boxes.	Each handle behaves like a path anchor point and can move in any direction.
	Distort	Four	Each side of the envelope edit box is a straight line; handles can move in all directions. This style is useful for creating perspective.
	Straight Line	Eight	All handles are connected by straight lines. Corner handles are constrained to right-angle movements; side handles can move in all directions.
	Single Cusp	Eight	Side handles form convex or concave curves between corner handles. Side handles can move in any direction; corner handles are constrained to right-angle movements.

Example	Style	Number of handles	Envelope behavior
	Double Cusp	Eight	Side handles form S-shaped curves between corner handles. Side handles can move in any direction; corner handles are constrained to right-angle movements.
	Bézier	Eight	All handles behave like smooth anchor points and can move in any direction.

Extruding objects

The Extrude command lets you create objects that appear to have three dimensions. Extrude vector and text objects in parallel style, and vector objects in circular and semi-circular ("sweep") style.

You can rotate and scale extruded objects in three-dimensional space. You can set the placement, intensity, and color of a simulated light source for shading extruded objects. Solid color fill inks can be applied to extruded objects. Strokes and other inks are not supported.

To extrude an object

1 Select an object for the extrusion you want to create:

- For parallel extrusion, select a text or vector object, or a group object containing one or both types of objects.
- For circular or sweep extrusion, select a vector object.

2 Choose Effects > Extrude to display the Extrude palette.

3 Select a preset or custom extrusion setting:

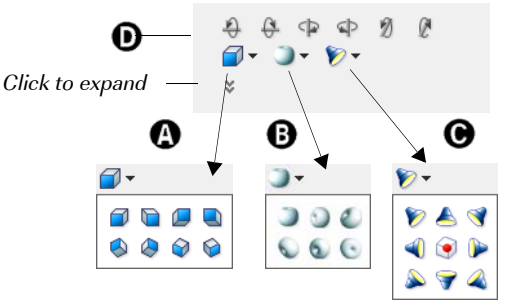
Using presets From the preset extrusion palettes, select an extrusion icon to extrude the selected object. The icons show the angle and position of the extruded object. Canvas uses a default extrusion depth for parallel extrusions, and a default Steps setting for circular extrusions.

Using custom settings Click the arrow to expand the palette. Choose an extrusion style, lighting color, and other options. Click Apply to extrude the selected object.

4 If you select Circular or Sweep style, an extrusion axis appears (see "Completing a circular or sweep extrusion," page 20.16).

Extrusion palette

A Parallel presets
B Circular presets
C Lighting presets
D Rotate buttons



Completing a circular or sweep extrusion

When you set up a circular or sweep extrusion, specify the number of steps you want Canvas to use. The more steps, the smoother and less "blocky" the extrusion appears.

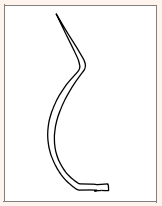
- **To specify the number of steps for a circular or sweep extrusion:**

In the Extrude palette, enter a number between six and 60 in the "# of Steps" text box.

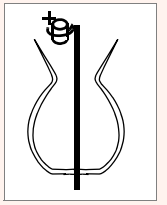
After you apply a circular or sweep extrusion to an object using the expanded Extrude palette, you need to set the extrusion axis, which is represented by a black bar. A mirror image of the selected object shows the extrusion at 180°.

- **To set the extrusion axis:** Drag the black bar right, left, up, or down, depending on the direction you want to extrude. The mirror image of the object moves as you drag the axis. Press Enter or double-click to complete the extrusion.

Circular and sweep extrusions



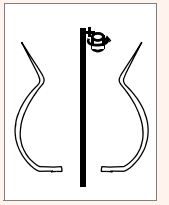
Original object



Axis



Circular extrusion



Axis



180° sweep extrusion

Extrusion options

Use palettes of extrusion and lighting presets in the Extrusion palette to modify extruded objects. If you expand the Extrude palette, you can use options to control lighting and rotation of extrusions. You can set these options before you extrude an object, or to edit an extruded object.

- Before extruding a selected object, set up the options you want and click Apply to extrude the object.
- After extruding an object, double-click it, change the settings you want, and click Apply to apply the settings.

You can control the color and position of the light source to change the shading of extruded objects. Canvas uses shades of gray to create highlights and shadows. Canvas then mixes the highlights and shadows with the color of the light source and fill color of the object.

Extrusion styles

In the expanded Extrude palette, select the extrusion style from the pop-up menu.

Parallel Adds depth to an object, as though the shape were cut out of a slab of clay. You can create parallel extrusions with text objects and vector objects.

Circular Extrudes a shape in a circular path. You can set the diameter of the extrusion path and number of steps (6-60) in the extrusion. You can apply circular extrusions to vector objects, but not text.

Sweep Extrudes a shape along a circular path, and lets you specify the number of degrees (10 to 360) to extrude. You can also set the diameter of the extrusion path and the number of steps (6-60) in the extrusion. You can apply sweep extrusions to vector objects, but not text.

Extrude palette options

A Select an extrusion style. For Sweep style, also enter the angular length, from 10° to 360°.

# of Steps: For Circular or Sweep style, number of steps controls the number of facets on the surface of the extrusion. Enter a value from 6 to 60.

Light color: Choose a light source color from the palette.

Back/Front: Drag the slider to specify the depth of the light source in 3D space (along the *Z* axis).

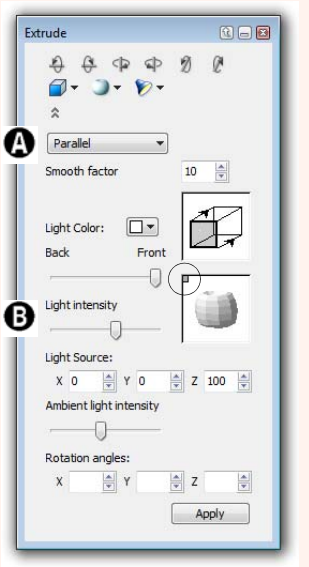
Intensity: Drag the slider to adjust the overall brightness of the light source.

B Drag the handle to set the horizontal (X) and vertical (*Y*) position of the light source and preview the effect.

Light Source: Use the handle (**B**) and Back/Front slider, or enter *X*, *Y*, and *Z* coordinates to set the position of the light source.

Ambient Light: Drag the slider to adjust the highlight and shadow contrast.

Rotation Angles: Enter X, Y, and Z values in degrees to rotate the extruded object in 3D space.



Editing extruded objects

Immediately after you extrude an object, the object is in extrusion edit mode. In edit mode, Canvas displays three axes, representing the three dimensions. Each axis has a handle, and when you roll the pointer over a handle, it changes to an extrusion pointer. Otherwise, the pointer appears as a rotation pointer.

When an extruded object is selected or in edit mode, the extrusion options are available in the Extruded palette as well as in the Properties bar.



- **To exit extrusion edit mode:** Double-click outside the object or press Esc.

To change the shape of extruded objects

When an extruded object is not in edit mode, you can resize and reshape it like other two-dimensional vector objects.

- drag a handle on the bounding box to resize the object

- place the object in Freeform mode to skew the object
- use the Scale command or Properties bar to resize the object

In addition to these two-dimensional editing functions, extruded objects have unique, three-dimensional properties. When an object is in extrusion edit mode, you can make it thicker, wider, or taller, and Canvas redraws the object to account for lighting changes.

Editing extruded objects

When you drag a handle, Canvas extrudes the object outward, along the corresponding axis; i.e., dragging a handle to the right extrudes the object to the right and left simultaneously.

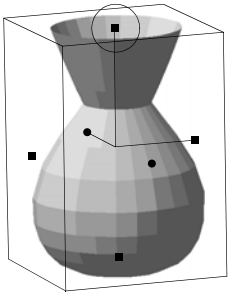


Extrusion symbol when pointer is on an extrusion handle



Rotation symbol when pointer is not on an extrusion handle

Handle



To change the color of extruded objects

When you extrude a vector object, Canvas uses combinations of a solid-color fill ink, shades of gray, and the light-source color to create a three-dimensional appearance. After you extrude an object, you can apply solid fill inks and change the color of the light source in the Extrude palette or in the Properties bar. When you change colors, Canvas redraws the object to show the interaction of the new colors with the object's shape and shading.

To rotate extruded objects

You can rotate extruded objects in several ways:

- Click the rotation buttons on the Extrude palette or Properties bar.
- Enter values in the Rotation Angles text boxes in the expanded Extrude palette.
- Rotate and scale extruded objects interactively.

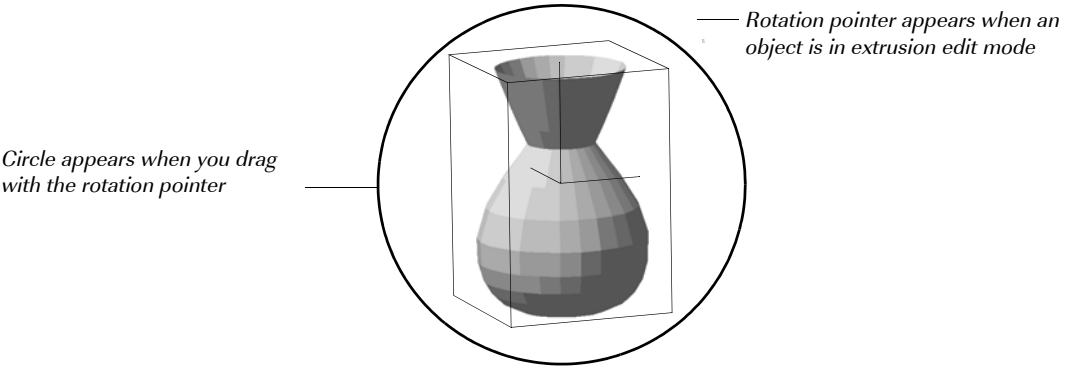
To rotate and scale an extruded object, the object can either be selected or in extrusion edit mode.

- **To place an extruded object in edit mode:** Double-click the extruded object with the Selection tool.

To rotate an extruded object interactively

When you first apply the Extrude effect, the object might appear flat if it is facing you (with the *Z* axis pointing directly at you).

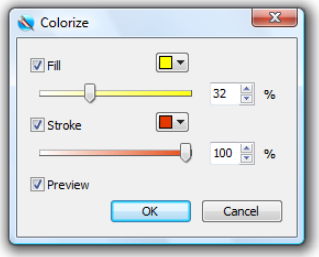
To see all dimensions, rotate an edge of the object toward you. With the rotation pointer, drag a side in the direction you want to rotate the object. As you drag, Canvas displays a circle to show the space in which the object can rotate. Dragging inside the circle rotates the object in all three dimensions; dragging outside the circle rotates the object on the plane that is facing you.



You can also rotate an extruded object in two dimensions, like other vector objects, choosing Effects > Rotate or Freeform. The object can't be in extrusion edit mode to use these commands. When you use the Rotate and Freeform commands, Canvas does not reapply lighting effects as with three-dimensional rotation; i.e., the light source appears to move with the object, instead of remaining in the same place as the object rotates.

Colorizing objects

Use the Colorize command to tint vector objects with solid color fill or pen inks when you want to mix two colors, or shade one color with another. Doing this in the Presets palette can be complicated, since you have to create a custom color and set the correct values to approximate a two-color mixture. The Colorize command lets you simply select two colors and choose the percentage of each.



To colorize a vector object

1 Select at least one vector object that has a solid color fill or pen ink. Colorize has no effect on gradient, hatch, texture, and symbol inks.

2 Choose Effects > Colorize.

3 In the Colorize dialog box, turn on the Fill and Stroke options to colorize both, or select the one ink you want to colorize.

4 In the pop-up color palettes, select the colors you want to add to the inks of the selected objects.

5 Use the sliders or enter a percentage in the text boxes to set the amount of color to mix with the object's color.

6 Turn on Preview to see the effect or click OK to colorize the object.

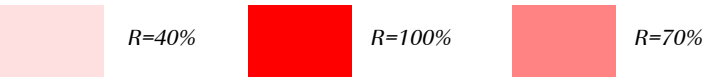
How colorization works

Canvas uses the specified percentages to determine the new color values for the selected object. For each color value (e.g., Red, Green, and Blue in the RGB color model), Canvas finds the difference between the tint and the original color. Then, Canvas multiplies the differences by the percentage you specify, and adds these values to the original color values.

Colorization calculations

An object's color has a red value of 40%. To tint 50% with a color that has a red value of 100%, Canvas calculates a new red value of 70%. The same calculations apply to the green and blue values for an RGB color.

Original *Tint color* *Result*



Difference in red values: 100 - 40 = 60

*Value difference multiplied by tint percentage: 60 * 50% = 30*

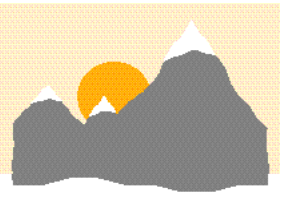
Original color value plus tint value is new value: 40 + 30 = 70% red

Fractalizing objects

Fractals are mathematical transformations that simulate the irregularities and patterns in natural shapes, such as coastlines and mountain ranges. When you fractalize a vector object, its outline becomes jagged. You can use the Fractalize command to add a fractal effect to any vector object except dimension objects and Smart Lines.



Vector objects



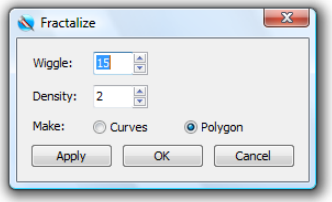
Fractalized mountains

To fractalize an object

1 Select at least one object and choose Effects > Fractalize.

2 Enter the Wiggle and Density values, and choose Curves or Polygon fractals.

3 Click Apply to preview the effect. Click OK to apply the effect and close the dialog box.



Wiggle The amount a fractalized path can deviate from the original path. Enter a number between 0 and 20; higher numbers increase the amount of wiggle.

Density The smoothness of the fractalized path. Enter a number between 0 and 5. Higher values increase the number of anchor points Canvas add to the path. Lower densities result in sharper angles.

Curves or Polygon Polygon fractals can be jagged and use many anchor points, while curves fractals are smoother and require fewer additional anchor points.

Note: Canvas fractalizes objects by adding several anchor points to an object's path. High wiggle and density settings and polygon fractals can add numerous anchor points, which require more memory to print. Lower settings and curves fractals can help to conserve system resources and eliminate problems you might have while printing.

Creating shadows for objects

The Shadow command lets you apply two types of offset ("drop") shadows to selected objects. Use the command to apply a shadow made of vector objects or an image. Canvas places the shadow directly behind the selected object in the stacking order.

You can edit shadow objects independently from the objects they are shadowing. Skew them to create oblique shadows and use filters to change their appearance. The original object and shadow are not grouped, so editing or moving one doesn't affect the other.



Vector (left) and image type shadows with different offsets

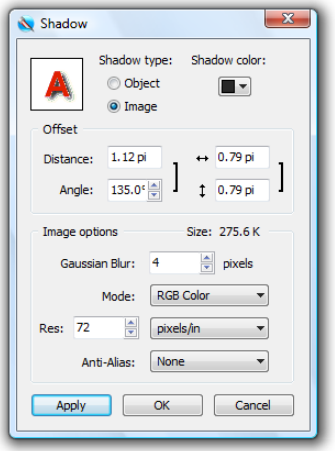
You can apply shadow effects to any vector or text object except dimension objects and Smart Lines. If you apply a vector shadow to a group of objects, Canvas groups the shadow objects and places the shadow behind the original group. If you apply a shadow to a paint object, Canvas creates a shadow of the paint object's bounding box.

To create an offset shadow

1 Select an object and choose Effects > Shadow.

2 In the Shadow dialog box, select options (see "Shadow options," page 20.24).

3 Click Apply to see the effect. To accept the settings and close the dialog box, click OK.



Shadow options

Shadow type Select Object to create a vector object shadow. Select Image to create a paint object shadow. A vector shadow has a hard edge and can be edited like any vector object. An image shadow can be softened using the Gaussian Blur option and can be edited like any paint object.

Shadow Color Select the color to apply to the shadow object from the color palette.

Offset Specify the location of the shadow relative to the original object. Enter the distance and angular direction to offset the shadow in the first text boxes, or enter the horizontal and vertical distances to offset the shadow in the second text boxes.

Image Options These options are available when Image is selected. Specify the amount of blur in the Gaussian Blur box. Select the color mode of the paint object from the Mode menu. Set the image resolution in the "Res" box. To apply anti-aliasing, select an option from the menu.

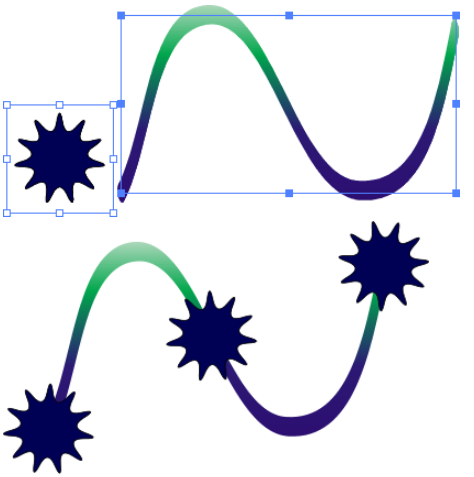
Size The value shows the amount of memory required for the paint object based on the current Image Options settings.

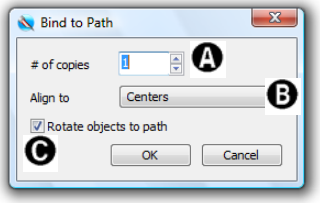
Binding objects to path

The Bind to Path command is used to bind and align vector objects to a selected path.

✓ Tip

If you create your object before you create the path, any irregular object must first be converted to paths (Object > Path > Convert to Paths) before choosing Effects > Bind to Path. This method applies to objects created with the Multigon, Polygon, Spiral, Concentric Circles, and Cube tools.





To bind an object to a path

1 First create the path to which you are going to bind an object.

2 Then create the object and then select both.

3 Choose Effects > Bind to Path to open the Bind to Path dialog box.

- Enter number of copies of objects (**A**).
- Choose alignment of Top, Centers, or Bottom of path (**B**).
- Rotate Objects to Path (**C**). When checked, the object will rotate based on the direction of the path.

4 Click the OK button to accept.

CHAPTER 21

DYNAMIC OBJECTS & CLIPART

You can speed up many projects by taking advantage of reusable dynamic objects and ready-made illustrations. This chapter describes how to use the Symbol Library.

Working with libraries

Dynamic objects are illustrations that you store in the Symbol Library palette. You can create a dynamic object from any vector, text, group, or paint object. After storing a dynamic object, you can use the Symbol Library to place copies that are linked to the stored dynamic object. If you change the dynamic object in the palette, all the copies in the document will also change.

Dynamic objects make it easy to place and change frequently used illustrations. Save time by creating dynamic objects from elements you intend to use repeatedly, such as logos, symbols, and floor plans; e.g., after designing a logo, make the illustration a dynamic object and retrieve copies from the Symbol Library palette. If you decide to change the logo, you can change all the copies at once by replacing the original dynamic object in the Symbol Library.

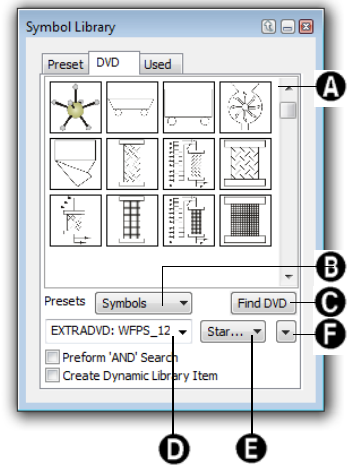
The Canvas Media kit includes the extensive Canvas Clipart Collection. Subjects range from animals and plants to business images and technical symbols. This extensive collection is stored in Canvas files on DVD-ROM.

These libraries will help speed up projects by taking advantage of re-usable objects and ready-made illustrations.

- **To open the Symbol Library:** Choose Window > Palettes > Symbol Library.

Dynamic objects & clipart

You can speed up many projects by taking advantage of reusable dynamic objects and ready-made illustrations. The Symbol Library palette can be used to search for clipart or store dynamic library objects that you frequently require, such as logos and technical symbols.



A Scroll arrows
B Illustration categories
C Find DVD
D Search field
E Search parameters
F Menu icon

To search for illustrations locally

To use this function, a Canvas Clipart DVD must be available. If you have Canvas Clipart CD from a previous version of Canvas, you can also search for illustrations on it with the Symbol Library palette. Click on the DVD tab if you want to search for illustrations on the Canvas Clipart DVD.

Note: The term "locally" refers to your computer or within your local network.

1 Click on the DVD tab of the Symbol Library palette.

2 Click the Find DVD button. Canvas will begin retrieving the illustrations from the DVD.

3 Search for an illustration using the following techniques:

- Open the illustration categories menu and select a category in which to search.
- Enter a keyword in the Search field and then press Enter.

Note: You can also refine your search by adjusting the search parameters (see "To change your search parameters," page 21.3).

4 Select the Create Dynamic Library Item checkbox to create a dynamic object from the clipart.

5 Select the illustration and then place it in the layout area. Illustrations contained in the document appear on the Used tab.

Why use dynamic objects?

Dynamic objects are especially useful if you work on projects that use specific illustrations; i.e., logos, technical symbols, etc. Create project-specific sets of dynamic objects to increase productivity by not having to recreate illustrations (see "To create a dynamic object," page 21.4 and "To create a library object set of dynamic objects," page 21.4).

Dynamic objects also have another advantage. They can be updated document wide by using a simple drag & drop technique. Select the replacement object and drop it on the used dynamic object (Used tab), and within seconds this dynamic object is replaced document wide (see "To replace a dynamic object," page 21.4).

Dynamic refers to actions that take place at the moment they are needed or rather "on the fly". By creating dynamic objects from clipart or illustrations that are used in a document, you can update your illustrations within seconds by using a simple drag & drop technique.

To place illustrations

After finding an illustration, you can place it at its original size or scale it while placing.

1 Select the illustration in the Symbol Library palette

2 Move the cursor into the layout area. The cursor changes to a place pointer.

- **To place the illustration at its original size:** Click in the layout area where you want to place the upper left corner.
- **To scale illustrations:** Drag the pointer to set the bounding box size. Canvas scales the illustration to fit the bounding box.

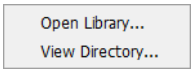
✓ Tip
To constrain the proportions, press Shift while scaling.

To search in another directory

1 Click on the menu icon.

2 Select Open Library. The Open dialog box appears.

3 Navigate to the directory that contains the Canvas Index (.NDX) file and click Open.



Symbol Library palette menu (DVD tab)

To change your search parameters

1 Open the Search options menu.

2 Choose either Matches, Contains, Starts with, or Ends with.

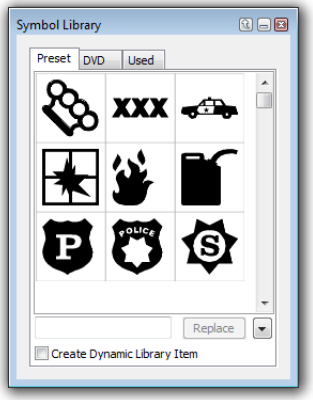
Choose	To find
Matches	Exact matches of the name you type
Contains	Any name that contains the text you type
Starts With	Any name that begins with the text you type
Ends With	Any name that ends with the text you type

To set the size of cells

The palette has two cell sizes: large and small.

1 Click on the menu icon.

2 Select Toggle cell size.



To create a dynamic object

1 Create the vector illustration, text object, or image that you want to save as a dynamic object.

2 Click on the Preset tab.

3 Drag the object onto the palette.

4 Enter a name for the object in the dialog box when requested. A preview of the dynamic object appears in the palette.

To place a dynamic object

1 Select the preview of the dynamic object in the Symbol Library palette.

2 Move the cursor into the drawing area. The cursor changes to a place pointer.

3 Click the place pointer.

- **To place the dynamic object at its original size:** Click in the layout area where you want to place the upper left corner.
- **To scale dynamic objects:** Drag the pointer to set the bounding box size. Canvas scales the dynamic object to fit the bounding box.

✓ Tip
To constrain the proportions, press Shift while scaling.

To unlink a copy of a dynamic object

1 Select the copy in the document.

2 Click the Preset tab and open the menu.

3 Select Unlink.

To replace a dynamic object

1 Drag the new object to the Used tab of the palette and drop it on the dynamic object that you want to replace.

2 Click Yes to replace the existing dynamic object.

Note: You cannot replace a dynamic object with another dynamic object. You must first unlink the dynamic object that you are going to use as a replacement.

To create a library object set of dynamic objects

You can define a set of dynamic objects that you use for specific projects.

1 Click the Preset tab and open the palette menu.

2 Select Save set and enter a name for the set.

3 Navigate to the directory to save the set and click Save. When needed, you can load or append this set at any time.

To load a library object set

Library object sets consist of dynamic objects that you can reuse. When you load a set, the current set is replaced. If you have a set open in the Preset tab, you should save the current set before loading a new set.

1 Click the Preset tab.

2 Open the palette menu and select Load Library Object Set.

3 Navigate to the directory where the set is saved and click Open. The set is loaded into the palette.

To append a saved set

1 Click the Preset tab and open the palette menu.

2 Select Append Set.

3 Navigate to the directory where the set is saved and click Open. The set is appended to the current set.

- **To clear all sets from the palette:** Open the palette menu and select Clear Library palette (Preset tab).

III

PAINTING & IMAGE EDITING

CHAPTER 22

PAINTING & IMAGE-EDITING

Canvas provides a full palette of painting tools, including the digital equivalents of markers, airbrushes, and paintbrushes, plus tools for creating effects like neon and blends. The Painting tools palette also provides tools to select, retouch, color-correct, and clone images (see "Tool palettes," page 9.6). This chapter explains how to use these painting tools, choose image modes, and convert objects into images.

Paint objects and images

A paint object is a Canvas object that contains an image. Paint objects are always rectangular and the same size as the images they contain.

Images are pictures defined by pixels. A scanned photo, TIFF, or Photoshop (.PSD) file, and pictures you paint in Canvas are all images composed of pixels.

Each pixel in an image is a solid color. Pixels can also be semi-transparent or completely clear. You can adjust the color, opacity, and transparency of pixels by using painting tools and commands.

About paint objects and images in Canvas

You can perform common object operations, including move, copy, and duplicate, on paint objects. For details, see the chapter titled "Working with objects" on page 16.1.

You can create images entirely in Canvas by making a new paint object that you can paint in, or creating an image from vector or text objects, as described in this chapter.

Import images into Canvas documents using the following methods:

- Place an existing image in a document using the Place, Paste, or Acquire commands.
- Scan a photo using the Acquire command. See "Using scanners to acquire images" on page 23.1.

Creating paint objects

You can make new paint objects containing blank images or convert objects into images by rendering them.

You can also scan images directly into a Canvas document (see "To open or place a file," page 13.1 and "Importing images," page 13.6 as well as "Using scanners to acquire images" on page 23.1).

Using the Paint Object Creator tool

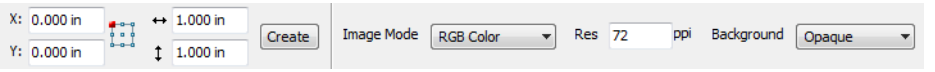
Paint Object Creator tool 

The Paint Object Creator tool creates new, blank paint objects. This tool lets you set the image mode, resolution, and background transparency for new paint objects.

Settings for new paint objects

The Paint Object Creator tool settings for image mode, resolution, and background are applied to new paint objects you create with the Paint Object Creator tool or any painting tool (excluding Crop tool).

- **To change settings for new paint objects:** Select the Paint Object Creator tool icon. The settings appear in the Properties bar. Their uses are explained in the following paragraphs.



Note: The The Paint Object Creator tool settings can be changed at any time.

Image mode Choose an image mode in the menu. The image mode controls the number of colors that can be stored in an image (see "Image modes for Canvas paint objects" on page 22.28).

Resolution Enter a value from 1 to 2,540 pixels per inch and press Enter.

Background Choose Opaque Background or Transparent Background in the menu (see "Paint object backgrounds," page 22.23).

- Opaque Background creates an image made of white pixels.
- Transparent Background creates an image made of clear pixels. This type of image is transparent, so you can see other objects through it (see "To create a transparent background" on page 22.22).

Auto Create If this option is selected, only the Paint Object Creator tool can be used to make blank paint objects. If this option, is not checkmarked, select any painting tool (except Crop) and drag in the document to create a blank paint object.

✓ Tip

Use a transparent image like a clear overlay; e.g., place a transparent paint object in front of a vector graphic, and then paint in the image to give the appearance of paint strokes on the graphic.

To create a paint object with a painting tool

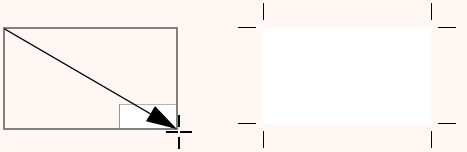
1 Select the Paint Object Creator tool or another painting tool (see "Auto Create," page 22.2).

2 Drag diagonally in the document to create a rectangular paint object.

- **To constrain the height and width proportionally:** Press Shift as you drag.
- **To constrain the height and width symmetrically from the center:** Press Ctrl as you drag.
- **To constrain the height and width proportionally and symmetrically:** Press Ctrl+Shift as you drag.

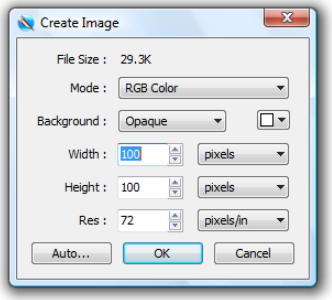
3 A blank paint object appears in edit mode. Begin painting in the image. When you finish, press Esc to end edit mode.

Drag any painting tool (except Crop) to create a new paint object



A paint object in edit mode, indicated by crop marks at each corner.

Using the Create command



The Create command creates new paint objects using the mode, size, resolution, and transparency settings that you specify.

Use the Create command to create paint objects that are opaque or transparent (see "Create Image options," page 22.4).

To create a paint object

1 With no objects selected, choose Image > Area > Create.

2 In the Create Image dialog box, set the image mode, type of background, background color (for an opaque image), size, and resolution of the image.

3 Click OK. The new paint object appears in the center of the view and is selected.

Setting paint object dimensions

When you use the Create command, you can set the dimensions of a paint object using relative or absolute values, depending on what you choose in the menus next to the Width and Height text boxes.

If you choose pixels to set the dimensions of the paint object, the size of the object is relative to its resolution; higher resolution makes pixels smaller, so the resulting object is smaller at the same width and height values.

If you choose inches, centimeters, picas, or points, enter absolute values for the paint object's dimensions.

Create Image options

The Create Image dialog box has options for new images.

File Size. The amount of memory required by the paint object, based on resolution, size, and mode. Black & White mode requires the least memory; CMYK Color requires the most.

Mode. Choose an image mode. See "Image modes for Canvas paint objects" on page 22.28.

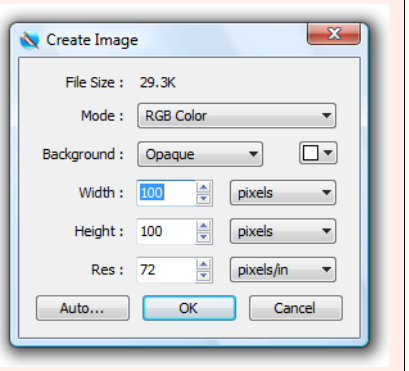
Background. Choose Transparent or Opaque (see "Background," page 22.2). For Opaque, you can select a color from the color palette.

Transparent creates a clear background for the image. When you choose this option, the color palette is not available.

Width and Height. Enter the object's width and height. In the adjacent menus, choose pixels or a unit of measurement.

Res. Enter the image resolution. Choose pixels per inch or pixels per centimeter in the adjacent menu.

Auto. Click Auto to calculate the resolution based on halftone screen frequency and image quality.



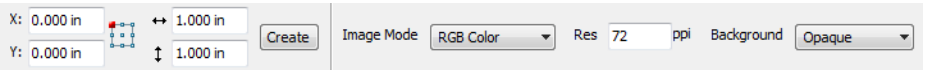
To create a paint object with the Properties bar

1 Select the Paint Object Creator tool so the Create Image Options appear in the Properties bar.

2 Enter the dimensions and resolution.

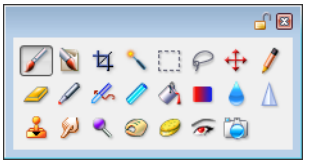
3 Select the mode and background as explained in "Create Image options".

Note: You can also specify the X/Y coordinates for the new paint object. Click Create.



Working with painting tools

Apply color, make selections, edit, retouch, color-correct, and clone images with Painting tools. For some tools, you can adjust opacity, pressure, exposure, or other settings. See the specific tool entries in this chapter for details. These tools are located in the Painting tools palette.



These tools can be used to place paint objects into paint edit mode. Point to a selected paint object with a painting tool, the pointer becomes a hand. Click the cursor on the paint object to enter edit mode.

To use a painting tool

This general procedure applies to all painting tools.

1 Place a paint object in edit mode.

2 Select a foreground or background color for painting (see "Selecting colors for painting," page 22.17).

3 Select a brush shape in the Brushes palette located in the Properties bar. You can also choose a mode or other option for most tools.

4 Click in the image to apply a spot of color, or drag to paint a brush stroke, depending on the tool.

- **To constrain a brush stroke to horizontal or vertical:** Press Shift as you drag.

✓ Tip

You can start dragging outside an image; a tool's effect begins when the pointer is inside the image.



Selected paint object



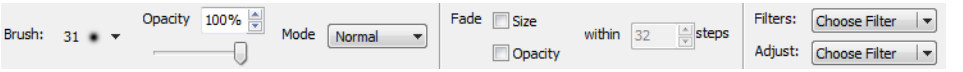
Paint object in edit mode

Paint tool options

Painting opacity

Painting opacity affects the intensity of painting. Adjust this setting in the Properties bar for the following painting tools: Eraser, Marker, Paintbrush, Bucket, Blend, and Rubber Stamp.

Note: For the other painting tools, Opacity is replaced by either Pressure, Glow, or Exposure.



Painting opacity can be set from 1 to 100%. Higher opacity makes the color more opaque. Lower opacity makes color appear more transparent. Painting opacity works with painting modes (see "Painting modes," page 22.18). If you use the Paintbrush tool to apply black at 100% opacity in Normal mode, black replaces the original color wherever you paint. At 50% opacity, the strength of the black is reduced, so it mixes with the underlying color. If you also use a different painting mode, the strength of the mode's effect is reduced.

✓ Tip

To quickly change the opacity setting, you can press a number key; "1" equals 10%, "2" equals 20%, "3" equals 30%, etc. "0" equals a setting of 100%.

To set painting opacity

1 Select a painting tool that uses the opacity setting.

2 Move the Opacity slider or enter a percentage in the text box.

Canvas remembers each tool's painting opacity setting; e.g., if you use the Blend tool at 30% opacity and then use the Paintbrush tool at 100% opacity, the setting changes back to 30% when you select the Blend tool again.

Note: The Opacity slider in the Brushes palette affects subsequent brush strokes by the current painting tool only. It is not the same as the Opacity slider in the Toolbox and the Transparency palette, which are linked and control overall opacity of selected objects.

Fade settings

The following tools have Fade settings: Paintbrush, Airbrush, Blur, Dodge, Burn, Eraser, Marker, Sponge, Smudge, Sharpen, and Rubber Stamp.

Select the options you want to use in the Fade area. In the Fade within field, enter the distance in which Canvas will complete the fade.

- **To gradually diminish the brush size as you drag:** Select the Size checkbox.

- **To fade the color to transparent:** Select the Opacity checkbox. Depending on the selected tool, the checkbox may be labelled as Pressure or Exposure.

Pressure Sensitive settings

If you are using a pressure-sensitive, plug-in device, such as a Wacom™ tablet, the Pressure Varies options are located within the Image/Multimedia managers in the Configuration Center.

- **To access the Pressure Varies options:** Double-click on the tool icon in the Toolbox to open the tool settings in the Configuration Center. You need to use a pressure-sensitive, plug-in device, such as a Wacom™ tablet. Use these options to make a pressure-sensitive stylus.

Painting with the Paintbrush tool

Paintbrush tool 

The Paintbrush tool applies the foreground color. Apply a soft (anti-aliased) brush stroke by choosing a soft-edged brush in the Properties bar or Brushes palette. Use the settings in the Properties bar to configure this tool.

Spraying soft strokes with the Airbrush tool

Airbrush tool 

The Airbrush tool applies the foreground color with a very soft (anti-aliased) stroke. The Airbrush tool paints as long as you press the mouse. The Pressure setting in the Properties bar and Brushes palette controls how fast the Airbrush applies color. Use the settings in the Properties bar to configure this tool.

Painting with the Marker tool

Marker tool 

The Marker tool paints with the foreground color, applying a hard-edged stroke. Use the options in the Properties bar to configure the Marker tool.

Painting individual pixels with the Pencil tool

Pencil tool 

Use the Pencil tool to apply the foreground color to a single pixel or create a one-pixel, freehand line. If the pixel already uses the foreground color, the Pencil applies the background color instead. You can use the Pencil tool for precise image editing at high magnifications (see "Fat Bits" on page 22.21).

- **To paint a straight line:** Shift-drag the Pencil to confine the line to 90° angles.

Painting two-toned "neon" strokes

Neon tool 

Use the Neon tool to paint a neon-tube stroke, with the foreground color inside and the background color outside. Use the Glow setting in the Properties bar and Brushes palette to adjust the color ratio. Painting modes are not available with the Neon tool.

Filling areas with color

Bucket tool 

Use the Bucket tool to pour color on an image. The Bucket applies the background color where you click. You can adjust its tolerance so the color covers adjacent pixels of the same color only, or adjacent pixels of similar colors.

Tolerance

The Tolerance setting is located in the Properties bar.

- **To affect only identically-colored pixels:** Type 0 in the Tolerance text box.
- **To affect more pixels:** Type a larger number.
- **To soften the edge of the filled area:** Turn on Anti-Aliased.

Painting in the background color with the Eraser tool

Eraser tool 

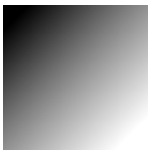
Paint with the background color using the Eraser tool. If a paint object has a visibility mask, the Eraser clears the pixels it touches, revealing a clear background. If the paint object does not have a visibility mask, the Eraser applies the background color.

Note: Opacity and paint mode options are not available with the Eraser.

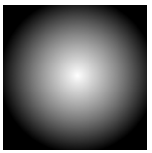
Painting with the Blend tool

Blend tool 

Paint a blend of colors in an image with the Blend tool. The default behavior (Foreground To Background) creates a blend of the foreground and background colors. This tool is very useful for creating blends from black to white in channels, to make selection masks that fade gradually from full selection to no selection.



Linear blend



Radial blend

Set the style and behavior using the settings in the Properties bar.

- **To create a linear blend:** Enter a Skew value and select a Behavior. Drag in the direction of the blend. Shift-drag to confine the blend's direction to a 90° or 45° angle.
- **To create a radial blend:** Enter both a Skew and Offset value. Drag from the center of the image.

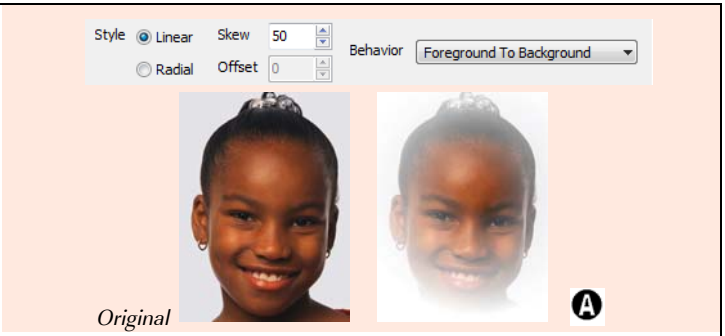
Blend options

Style. Choose Radial or Linear.

Skew. To set the midpoint between blend colors, enter a number from 13 to 87. The default is 50.

Offset. For Radial style, enter a value to set the percentage of starting color in the blend. To use more of the starting color in the blend, enter a number from 50 to 100.

Behavior. Choose a blending method. Foreground and Background refer to the current colors in the Toolbox. Transparent options fade from the foreground color to transparency. Spectrum blends create rainbow blends in a clockwise or counter-clockwise direction around the color wheel.



A Example of a blend used to vignette a photograph. The following Blend options were used:
Radial-style blend
Behavior = Transparent to Foreground (Foreground color white)
Offset = 10
Skew = 70

Copying areas with the Rubber Stamp tool

Rubber Stamp tool 

Make a copy ("clone") of an image area with the Rubber Stamp tool. This tool is very useful for retouching scanned photographs, removing lines and scratches, as well as hiding seams when compositing images. Use the settings in the Properties bar to configure the Rubber Stamp tool.

Cloning styles

The effect of dragging the Rubber Stamp tool in an image depends on the option you choose in the Style menu in the Properties bar.

Clone (aligned). The first time you drag the Rubber Stamp tool in the image after setting the reference point, Canvas establishes a fixed direction and distance from the reference point to the pointer. The Rubber Stamp tool copies any area of the image that is this distance and direction from the pointer.

Clone (non-aligned). Dragging the Rubber Stamp tool always begins copying the image from the same reference point.

Impressionist This option smears pixels to create an impressionistic effect. You don't need to set a reference point to use this effect.



Rubber Stamp pointer with Alt pressed



Rubber Stamp pointer without modifier key

To use the Rubber Stamp tool

1 Configure the tool using the settings in the Properties bar (see "Painting opacity" on page 22.6, "Painting modes" on page 22.18, and "Cloning styles" on page 22.10).

2 Alt-click in the image to set the reference point for sampling an image area.

3 Drag in the image to paint a copy of the sampled area around the reference point.

Alt-click to set the reference point for the area you want to clone with the Rubber Stamp tool



Clone (aligned) option



Clone (Non-aligned) option

Smudging colors

Smudge tool



With the Smudge tool, pull color from one area of an image and drag it into adjacent areas. Use the settings in the Properties bar to configure the tool.

To use the Smudge tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Pressure setting. A setting of 1 affects the image slightly; 85 drags the color through many pixels.

2 Drag the Smudge tool in the image area you want to edit.

- **To smudge the foreground color into the image:** Choose the Finger Painting option.

Lightening ('dodge') areas

Dodge tool 

The Dodge tool lightens specific areas of an image. Use the settings in the Properties bar to configure the tool.

To use the Dodge tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Exposure setting. Increasing the Exposure increases the lightening effect of the tool. Decreasing the setting decreases the effect.
- Choose Shadows, Midtones, or Highlights from the Mode menu. The Dodge tool lightens pixels that fall within the selected range only.

2 Drag the Dodge tool in the image area you want to edit.

Darkening ('burn') areas

Burn tool 

Darken specific areas of an image by dragging the Burn tool over the pixels you want to darken. The tool's effect can be controlled by your selection of brush and adjustment of the tool's Fade setting. Use the settings in the Properties bar to configure the tool.

To use the Burn tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Exposure setting. Increasing the Exposure increases the darkening effect of the tool. Decreasing the setting decreases the effect.

- Choose Shadows, Midtones, or Highlights from the Mode menu. The Burn tool darkens pixels that fall within the selected range only.

2 Drag the Burn tool in the image area you want to edit.

Blurring areas

Blur tool 

Soften specific areas in an image with the Blur tool. The Blur tool decreases the contrast between pixels the tool drags over. Use the settings in the Properties bar to configure the tool.

Select the Blur tool and click a paint object to put the image in edit mode, if necessary.

To use the Blur tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Pressure setting. A setting of 1 affects the image slightly; 85 softens the image greatly.
- Choose Normal, Darken, or Lighten from the Mode menu. The Blur tool darkens pixels that fall within the selected range only.

2 Drag the Blur tool in the image area you want to edit. Canvas applies the effect to pixels touched by the tool.

Sharpening areas

Sharpen tool 

Increase the contrast between specific pixels in an image with the Sharpen tool. Use the settings in the Properties bar to configure the tool.

To use the Sharpen tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Pressure setting. A setting of 1 affects the image slightly; 85 dramatically sharpens the image.
- Choose Normal, Darken, or Lighten from the Mode menu.

2 Drag the Sharpen tool in the image area you want to edit. Canvas applies the sharpening effect to pixels touched by the tool.

Saturating and desaturating colors

Sponge tool 

With the Sponge tool, add or remove gray content from specific areas of an image. Use the settings in the Properties bar to configure the tool.

To use the Sponge tool

1 Configure the tool using the settings in the Properties bar.

- Select a brush size and shape from the Brushes palette (see "Selecting brushes and painting options," page 22.13).
- Adjust the Pressure setting. Increase the pressure to increase the effect.
- Choose Saturate or Desaturate in the Mode menu. Saturate removes gray; desaturate increases the amount of gray.

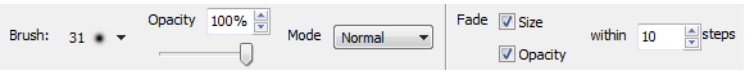
2 Drag the Sponge tool over the image area you want to edit.

Selecting brushes and painting options

✓ Tip
The Brushes palette contains the same painting options as the Properties bar; e.g., the Opacity slider, painting modes, etc.

The Properties bar contains the Brush icon as well as other options for painting and image editing. The Opacity slider lets you adjust opacity for painting. The Mode menu lets you choose painting modes to control color application and target tonal ranges. Open the Brushes palette to select preset brushes and create new brushes.

Note: The Brush icon appears in the Properties bar when one of the following Painting tools is selected: Eraser, Paintbrush, Marker, Airbrush, Neon, Rubber Stamp, Smudge, Blur, Sharpen, Dodge, Burn, Sponge.



Brush icon

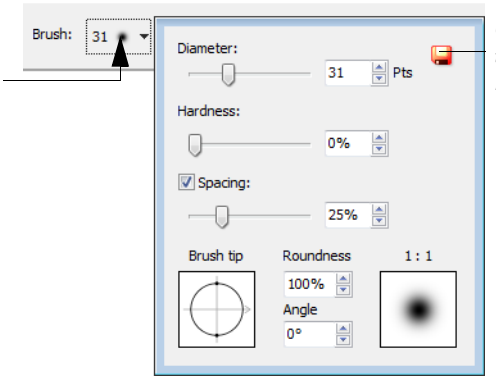
Use the Brush icon to adjust current brush settings or to open the Brush palette and select another brush.

To modify brush settings

You must select a Painting tool, such as the Paintbrush or Pencil tool, so the Brush icon is active in the Properties bar. You can edit any brush shape. For brush shapes created from selections, you can change only the spacing.

1 Click on the Brush icon in the Properties bar to open the pop-up Brush Options dialog box.

Click on the current brush icon to open the Brush Options pop-up dialog box.



Click this button to add the adjusted brush to the Brushes palette.

2 Make any adjustments to the current brush's settings (see "New brush options," page 22.16). You can also add the brush to the Brushes palette by clicking the button located in the upper right corner.

Note: You do not have to add the brush to the Brushes palette to be able to use it; however, if you plan on using a brush more than once, we recommend that you add it to the palette.

3 Begin painting with the modified brush.

To select brushes from the Brushes palette

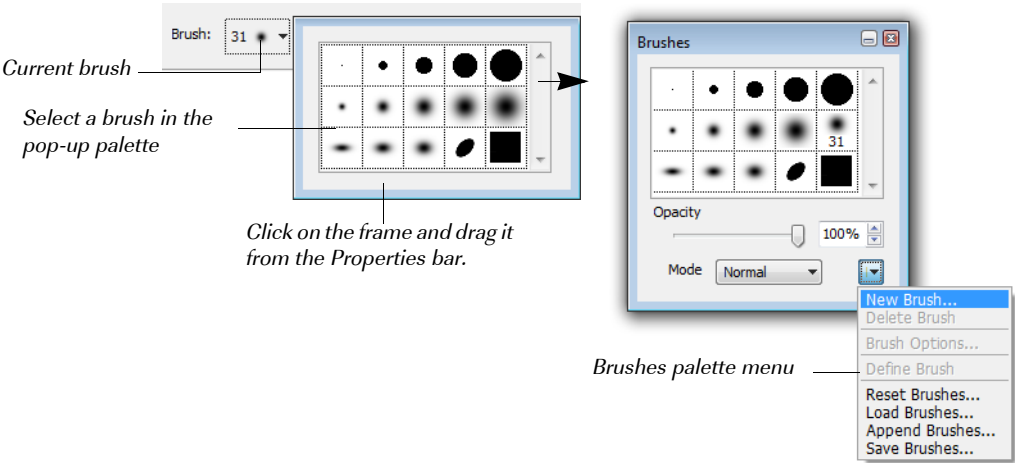
1 Click on the arrow that is next to the Brush icon and the Brushes palette pops out.

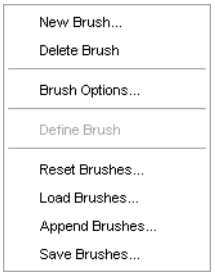
2 Click on a brush shape and begin painting.

While painting, use the context menu to change brushes and select painting options (see "To access the context menu," page 22.20).

✓ Tip

You can drag the Brushes palette off the Properties bar. The Brushes palette has commands for creating brushes, saving brushes to a file, loading brush files, and deleting unused brushes.





Brushes palette menu

Use the Brushes palette menu to create new brushes, save brushes in files, modify existing brushes, and delete brushes.

You can add custom brushes to the list of preset brushes in the palette. When you exit Canvas, it stores the brush presets. The same set of brushes are available whether you work with new documents, documents you created, or documents created by another Canvas user.

To create a new brush

1 Open the Brushes palette menu and choose New Brush.

2 In the New Brush dialog box, adjust the settings for the brush (see "New brush options," page 22.16).

3 Click OK after entering the settings you want. The new brush shape appears in the Brushes palette.

New brush options

Create brush shapes by specifying diameter, hardness, spacing, roundness, and angle. These same options are available in the Brush Options dialog box.

Diameter. Enter the diameter in pixels of the new brush.

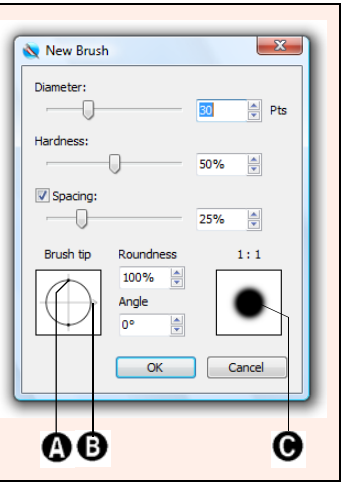
Hardness. Enter a percentage to tell Canvas how much of the brush shape is solid.

Spacing. This percentage sets the amount of brush overlap when you drag a painting tool. Turn off Spacing to make the brush velocity-sensitive, so it skips pixels when dragged fast.

Roundness. Enter 1 to 100. To create a circle, enter 100.

Angle. Enter a number to rotate the brush shape.

A Drag to change Roundness.
B Drag to change the Angle.
C Preview of the brush shape.





Select image areas to make brushes. This image contains rendered vector objects.

To define a brush shape with a selection

You can make a new brush shape from a selection in an image. This lets you create non-elliptical brush shapes.

1 Select all or part of an image (see "Selecting pixels in images," page 25.1).

2 Choose Define Brush in the menu. The selection becomes a brush in the Brushes palette. Canvas uses the shape and lightness values of the selection to define the brush. Brush shapes do not contain color.

To delete brushes from the palette

You can permanently remove brush shapes from the Brushes palette. If you think you might want to use the brush shape again, you should first store it in a brushes file so at a later time you can load it back into the palette (see "To save brushes in a file," page 22.16).

1 Select the brush you want to delete.

2 Choose Delete Brush in the menu. You can also Alt-click a brush in the palette to delete it.

To save brushes in a file

You can save brushes in a file. Saving brushes to disk lets you customize the Brushes palette for particular projects or exchange brushes with other Canvas users. The file format that Canvas uses

to save brushes on disk is also compatible with the file format used by the Photoshop image-editing program for saving brushes.

1 In the Brushes palette, add or remove brushes until you have the collection you want to save.

2 Choose Save Brushes in the menu.

3 In the directory dialog box, type a name for the brushes file, select a location, and click OK.

To load or append brushes from a file

When you load brushes, you can replace the current set of brushes with the file or append the brushes to the current palette.

1 Choose one of the following commands in the menu:

- **To replace the current brushes with the file:** Choose Load Brushes.
- **To add the brushes in the file to the current palette:** Choose Append Brushes.

2 In the directory dialog box, locate the brushes file you want to open and click OK.

Selecting colors for painting



The palette icons when a painting tool is selected

✓ Tip
You can arrange paint objects in a document with vector and text objects that use spot colors, but only the vector and text objects will produce spot color separations.

Painting tools use the foreground or background color, or both. Instead of a pen ink icon for the foreground, a brush icon appears when you select a painting tool. The top icon shows the foreground color, and the bucket icon shows the background color.

You can use any solid color for painting, including multicolored inks, such as gradients, symbols, textures, pattern, or hatch inks.

Also, if you choose a spot color and edit pixels with a painting tool, Canvas converts the spot color to the image color mode; i.e., RGB, CMYK, etc. (see “Image modes for Canvas paint objects” on page 22.28).

- **To swap the foreground and background colors:** Press the “X” key while using a painting tool.
- **To set the foreground color to black and background color to white:** Press the “C” key.

To select a color for painting

1 Press the foreground or background color icon in the Toolbox to open the Presets palette with the Inks tab selected.

2 Click on an ink type and select a cell. If you tear the Presets palette away from the Toolbox, it becomes a floating palette you can keep open as you work.

Note: You can also create new colors by using the various Inks managers located in the Attributes palette (see "Creating color inks" on page 14.5).

Picking colors with the Color Dropper tool

Use the Color Dropper tool to pick up color from an image or object. The color you select becomes the current background or foreground color that you can use for painting and drawing (see "Using the Color Dropper," page 14.24).

While in image edit mode, select the Color Dropper by pressing Alt; however, you won't be able to pick the background color.

To select the background color

1 Select the Color Dropper tool.

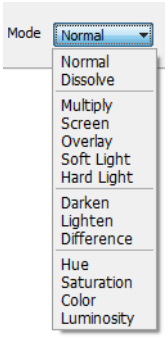
2 Click a color in an object or image.

To select the foreground color

1 Select the Color Dropper tool.

2 Right-click a color in an object or image.

Painting modes



Use various painting modes when you paint and edit images. Painting modes can create special effects and let you control color mixing and the tonal range affected by painting.

The Mode menu is in the Properties bar and Brushes palette when you use the following tools: Marker, Paintbrush, Airbrush, Bucket, Blend, Blur, Sharpen, and Rubber Stamp. Painting modes that are available for most painting tools are listed here.

To choose a painting mode

1 Select a painting tool.

2 Open the Mode menu. Not all modes are available for all painting tools.

Normal The default painting mode applies color to all pixels uniformly. When the painting opacity is 100%, the applied color replaces the original color. If you paint in a Black & White or Indexed image, Normal mode is labeled Threshold.

Dissolve This mode applies color with a random diffused pattern within the brush shape. The effect is similar to drawing with chalk. The diffused effect is stronger when the painting opacity is less than 100%.

Multiply Darkens all pixels by multiplying the value of the applied color and the underlying color. Painting with darker colors intensifies the effect. Painting with black results in black; painting with white does not affect the original color. When you apply a color with multiple strokes in the same area, the strokes become darker, similar to the effect of making multiple strokes on paper with an ink marker.



Dissolve mode

Screen The Screen mode is the opposite of Multiply mode. Screen mode lightens all pixels by multiplying the inverse values of the applied color and the underlying color. Painting with lighter colors intensifies the effect. Painting with black does not affect the original image; painting with white results in white.

Overlay Applies color without destroying the underlying shadows and highlights. Overlay mode blends the applied color with the underlying color; the amount of blending depends on the lightness of the underlying color.

Soft Light Lightens or darkens underlying colors depending on the lightness value of the applied color. If the lightness of the applied color is less than 50% gray, painting lightens the image. If the lightness of the applied color is greater than 50% gray, painting darkens the image. Painting with white or black has the most intense effect, but does not completely replace the underlying color.

Hard Light Paints in Multiply or Screen mode, depending on the applied color's lightness value. This mode is similar to Soft Light. However, painting with black produces black; painting with white produces white.

Darken Compares the underlying color and the applied color, and the result is whichever color is darker. In other words, pixels in the image will be painted if the paint color is darker, while pixels that are darker than the paint color will remain unpainted.

Lighten The Lighten mode is the opposite of Darken mode. Lighten compares the underlying color and the applied color, and the result is whichever color is lighter. In other words, pixels in the image will be painted if the paint color is lighter; pixels that are lighter than the paint color will remain unpainted.

Difference Compares the brightness of the original and applied colors, subtracts the brightness value of the darker pixel from the lighter one, and applies that value to the original image.

Hue Applies the hue of the paint color without changing the brightness and saturation of the underlying image.

Saturation Changes the saturation of the area painted to match the saturation of the applied color, without changing the hue or luminance values. Applying gray does not affect the original image.

Color Changes the hue and saturation of the painted area to the hue and saturation of the applied color, without affecting the shadow, highlights, or midtones of the original image.

Luminosity Changes the lightness of the underlying color to the lightness of the applied color, without affecting the hue or saturation of the image.

Painting context menu

Tip
The context menu contains some common commands that are available from the Menu bar.

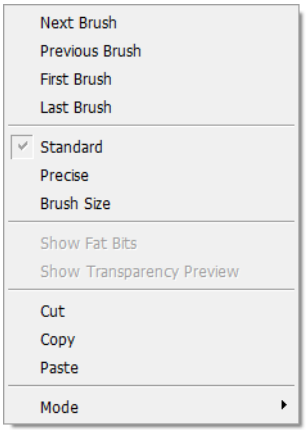
When working with a painting tool, use the context menu to gain quick access to common commands. The commands that are available vary, depending on the selected painting tool and whether there is a selection in the image.

To access the context menu

1 Select a paint object.

2 Right-click the selected paint object.

3 Choose a command when the menu opens. Canvas applies the command and hides the menu.



Context menu options

The following commands are available in the painting context menu:

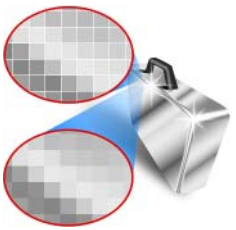
Command	Use
Next Brush	Selects the brush shape in the Brushes palette to the right of the current brush.
Previous Brush	Selects the brush shape in the Brushes palette to the left of the current brush.
First Brush	Selects the brush at the upper-left of the palette.
Last Brush	Selects the brush at the lower-right of the palette.

Command	Use
Standard Pointer	Displays the icon of the selected painting tool, which is the default pointer (see "Pointer display" on page 22.21).
Precise Pointer	Changes the pointer to a crosshair. The intersection of the crosshair is the center of the current brush (see "Pointer display" on page 22.21).
Brush Size Pointer	Changes the pointer to an outline of the current brush (see "Pointer display" on page 22.21).
Show/Hide Fat Bits	Displays/hides pixels as individual tiles in a grid at high magnifications (see "Fat Bits" on page 22.21).
Show/Hide Transparency Preview	Displays or hides transparent sections of an image while in edit mode.

Pointer display

The default pointer for painting is a symbol of the selected painting tool. Change the pointer to a crosshair or the current brush size. All painting tools use the pointer you select, not just the current painting tool. To change the pointer, choose an option in the context menu.

✓ Tip
Changing the pointer using the context menu is the same as changing the pointer in the Painting manager located in the Configuration Center.



Fat Bits

When you choose Show Fat Bits, the resolution and magnification affect the display. Fat Bits are visible when the magnification-to-resolution ratio is about eight to one; e.g., if the image resolution is 72 ppi, fat bits appear at 600% magnification and higher. If the image resolution is 144 ppi, fat bits appear at 1,200% magnification.

- **To show fat bits:** Press the Plus key or choose Show Fat Bits in the context menu to display pixels as individual tiles in a grid.
- **To hide fat bits:** Press the Plus key or choose Hide Fat Bits in the context menu to display pixels without the grid of individual tiles.

Adding visibility masks to images

If a paint object has a visibility mask, you can erase to a clear background. Also, Canvas can protect transparent areas when you paint or edit in the image.

You can add a visibility mask to a paint object that was created with an opaque background in Canvas or imported from another application.

Paint objects can look the same whether they have visibility masks or not. However, a visibility mask changes the way that the Eraser tool works and the effect of deleting or moving a selection (see "Painting in the background color with the Eraser tool," page 22.8).

In a paint object that has a visibility mask, you can erase or delete pixels to reveal a clear background; e.g., you can erase at the edge of an image to create faded or torn edges. You can delete or move selections to create transparent areas.



White areas of the fish image erased to a clear background

If a paint object does not have a visibility mask, areas where you drag the Eraser tool and selections you delete or move, become filled with the current background color and are opaque, not transparent.

When you create paint objects with painting tools or the Render or Create commands, you can select an option to include visibility masks.

To add a visibility mask

1 Select a paint object that does not have a visibility mask.

2 Choose Image > Add Visibility Mask. This command is not available if a Duotone, Indexed, or Multichannel image is selected.

Adding a visibility mask does not change the appearance of a paint object; e.g., white pixels do not become transparent. When a paint object has a visibility mask, you can select Preserve Visibility in the Channels palette. When this option is selected, Canvas protects clear areas from the effects of painting and image editing.

To create a transparent background

1 Select the image object.

2 Click the fill ink icon in the Toolbox.

3 Select null ink. A visibility mask is applied to the object, and the white pixels become transparent.

Paint object backgrounds

You can create a paint object in which the image "background" is transparent or opaque.

An opaque paint object contains opaque pixels. If the pixels are white and the paint object is on a white background, you won't notice that the image is opaque. Still, the rectangular paint object will block objects behind it (**A**).

A transparent paint object can have a clear background that does not block other objects (**B**).

Painting in an opaque image is like painting on a wall. Painting in a transparent image is like painting on a window.

A



A rectangle and text are blocked by an opaque paint object in front

B



A transparent background lets objects show through it

Rendering objects and images

Rendering converts objects into paint objects; e.g., you can use the Render command to create a paint object from text, and then use the Airbrush tool to paint highlights on the image of the text.

✓ Tip
Rendering is also referred to as "rasterizing" because the process produces a raster image -- an image composed of pixels arranged in a grid. All paint objects in Canvas contain raster, or pixel-based, images.

You can create paint objects by rendering selected vector objects, text objects, and group objects. You can render a paint object to create a new paint object that has different characteristics than the original.

When you use the Render command, you can create a transparency mask or visibility mask for the resulting paint object.

When you render a vector object, it's a good idea to select a visibility mask if you want to isolate an object against a clear background.

To render objects

1 Select one or more objects and choose Image > Area > Render. If you select multiple objects, they will be rendered as one paint object.

The Render Image dialog box lets you specify resolution and other settings for the resulting paint object.

2 Click OK to render the selection.

Canvas creates a paint object containing an image of the original objects. The paint object appears in front. The Render command does not change the original selected objects.

- **To see the original objects:** Drag the paint object away.

Pasting into images

✓ **Tip**
Anti-aliasing blurs edges while rendering to make the edges of text characters and vector objects appear smoother in the resulting image.

You can render objects by copying them to the Clipboard and then pasting them into paint objects in edit mode. When an image is in edit mode and you paste into it, the Clipboard content is rendered and appears as a selection in the image.

If you select the "Anti-aliased Clipboard" option in the Configuration Center, Canvas anti-aliases vector and text objects that you paste into paint objects (see "Anti-aliased Clipboard," page 12.8).

Rendering exported files

If necessary, Canvas renders selected objects or an entire document when you use the Save As command to export to a raster file format; e.g., if you select vector objects, and then save in GIF format, Canvas renders the selected objects because GIF files store raster images.

When Canvas is saving a file, some options might not be available in the Render Image dialog box because the file format doesn't support them.

Render Image settings

Specify image mode, resolution, and other settings in the Render Image dialog box.

Dimensions. Displays the width and height of the paint object Canvas will create.

A Choose the measurement for the Width and Height values in the Dimension area; inches, centimeters (cm), points, or picas.

Mode. Choose the color mode for the resulting image: Black & White, Grayscale, Indexed Color, RGB Color, CMYK Color, or LAB Color.

Width and Height. Enter the pixel dimensions for the paint object. When you change a value, Canvas adjusts the others to maintain the size and proportions of the original objects.

Res. Choose pixels per inch or pixels per centimeter in the pop-up menu. The value shown after "Size" is the amount of data in the image, based on the mode, resolution, and dimensions.

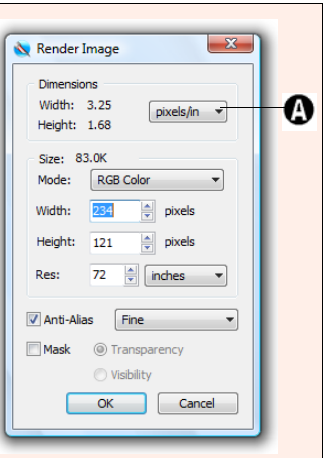
Anti-Alias. Blurs edges while rendering to make the edges of text characters and vector objects appear smoother in the resulting image. Choose Fine, Medium, or Coarse in the pop-up menu.

Coarse uses 16 shades for anti-aliasing and is the fastest option. Medium uses 64 shades for anti-aliasing. Fine uses 256 shades for anti-aliasing. Fine produces the softest edges and is the slowest option.

Mask. Select this option if you want the resulting paint object to have a visibility mask or a channel mask. Then choose the type of mask.

Transparency creates a channel mask. The channel mask is based on the silhouette of the rendered objects. In other words, if there are spaces between the objects, the channel mask will create transparent spaces.

Visibility creates a visibility mask in the paint object. The result is a clear background in areas not covered by objects.



If you do not select Mask, areas not filled by rendered objects within the paint object's bounding rectangle will be white and opaque. If you select Mask and either Transparency or Visibility, areas that are not filled by rendered objects will be transparent.

Rendering with the Camera tool



You can use the Camera tool to create a paint object from any area in a document. The Camera tool renders the area you select. You can set the resolution, color mode, and other options for the rendered image.

Using the Camera tool is like taking a snapshot of the screen. You simply use the Camera tool to select a rectangular area for rendering. You can include all types of objects and parts of objects in the rendering, without selecting the objects first.



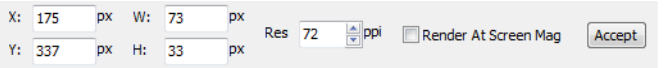
The Camera tool is useful whenever you need to convert objects to an image, such as for creating Web graphics. The Camera tool functions like the Image > Area > Render command. The Camera tool lets you control the exact area to be rendered, while the Render command renders a rectangular area that includes all selected objects.

To render with the Camera tool

1 Select the Camera tool.

2 Drag to draw a rectangle around the area you want to render. View the dimensions and coordinates of the rectangle in the Status bar. A bounding box with handles appears around the area you selected.

3 Adjust the box to select exactly the area you want to render by using the controls in the Properties bar or manually changing the shape and size with the handles.



Enter values in the fields to change the position and size of the bounding box. Select a resolution or render at screen resolution. Drag the handles to manually reposition or resize the bounding box.

4 Click the Accept button or click inside the area.

5 The Render Image dialog box appears. Select the options you want to use, and then click OK to render the selected area. After you click OK in the Render Image dialog box, a paint object containing the rendered image appear on top of the area you selected.

Using vector and text tools in paint objects

After placing a paint object in edit mode, use vector tools and the Text tool to add shapes and type to an image.

When you draw or type text within a paint object in edit mode, Canvas rasterizes the objects according to the image mode and resolution of the paint object, and makes a floating selection in the image.

When you type within a paint object in edit mode, you can modify the font, size, and style of the type before Canvas rasterizes it (see “To set type within images” on page 22.27).

To set anti-aliasing for objects placed in images

You can set a preference so Canvas softens the edges of objects you draw in an image or paste into an image from the Clipboard (see "Painting," page 12.8).

1 Choose File > Configuration Center and select the Painting manager in the General settings.

2 Set the preferences you want to apply to objects placed in images and click OK.

- **To soften selections pasted from the Clipboard:** Select "Anti-Aliased Clipboard."
- **To soften objects or type created in paint objects in edit mode:** Select "Anti-Aliased Canvas Objects."

To draw objects within images

Use any of the drawing tools in a paint object in edit mode to "paint" shapes. When you finish drawing the shape, Canvas rasterizes it, based on its shape and colors.

1 Place the paint object in edit mode, if necessary, and select a drawing tool.

2 Select ink and stroke settings (see "Inks: colors & patterns" on page 14.1 and "Strokes: outline effects" on page 15.1).

3 Draw in the paint object with the selected tool (see "Drawing basics" on page 17.1). The object you draw becomes a floating selection and you can change its opacity, set the mode, or apply filters (see "Changing the opacity of floating selections" on page 25.12 and "Image filters & effects" on page 26.1).

4 Press Esc twice when you finish editing the selection to make the selection part of the image.

5 Press Esc once more to exit edit mode and select the image.

To set type within images

✓ **Tip**
Use the Text menu, Type palette, or Properties bar to set typographic attributes.

Type text in a paint object in edit mode and then modify the attributes before Canvas converts the type to a floating selection.

1 Place the paint object in edit mode, if necessary, and select the Text tool.

2 Click the I-beam pointer in the image and type the text, which appears in a white box.

3 Press Esc to make the text a floating selection. You can change the opacity, set the mode, and apply filters to the selection (see “Changing the opacity of floating selections” on page 25.12 and “Image filters & effects” on page 26.1).

4 Press Esc twice to make the type selection part of the image.

5 Press Esc again to exit edit mode and select the image.

Image modes for Canvas paint objects

✓ **Tip**
The image mode also appears in the Status bar if Object Details has been selected to appear in an information field.

In Canvas, image modes define the color model and number of colors that can be used in images. When you create a new paint object in Canvas, you select an image mode: Black & White, Grayscale, RGB Color, CMYK Color, or LAB Color. When you select a paint object, Canvas displays the image mode in the Properties bar.

How image modes affect image filters

Filters produce different results depending on the image mode. When you paint, the opacity setting of a brush acts differently on images in different modes. For the most predictable results with filters and paint tools, use RGB color mode.

Posterizing a LAB image introduces color to light areas.



Original

RGB image posterized 4 levels

LAB image posterized 4 levels

How Canvas assigns image modes

When you import an image from another source either by opening, placing, or pasting an image file, Canvas assigns an image mode based on the number of colors and the color model used in the image.

The following table shows the image modes that Canvas assigns when you import images in some common image formats.

Imported format	Assigned image mode
TIFF	RGB Color, CMYK Color, or Grayscale
BMP	256-color image: Indexed 24-bit image: RGB Color
MacPaint	Black & White
Photoshop	Same as original image mode

Changing image modes

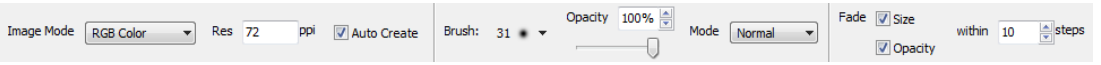
✓ Tip
You can access the Image Mode menu on the Properties bar or by choosing Image > Mode.

You might want to change modes so you can use certain features, or reduce memory requirements; e.g., you might want to convert an Indexed image to RGB to apply image filters. You might want to convert an RGB image to Grayscale mode to save memory when a document is printed without color.

To change image modes

1 Select one or more paint objects.

2 Select the image mode from the Image Mode menu in the Properties bar.



Some modes are available only if the object's current mode is compatible; e.g., Black & White mode and Duotone mode are available only when Grayscale paint objects are selected.

If the mode you choose does not support an image's full color range, a message asks you to confirm the change. Click OK to proceed.

If you choose Duotone mode or Indexed mode, select options in a dialog box and then click OK to complete the conversion (see "Duotone image mode" on page 22.37 and "Indexed image mode" on page 22.31).

Black & White image mode

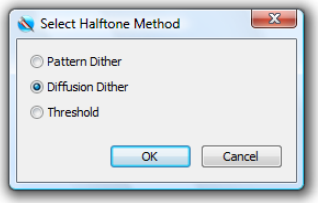
Black & White image mode is used for scanned line art and black-and-white ("bitmap") images, which contain only black and white pixels. Images in Black & White mode require the least amount of memory and disk space.

To convert to Black & White mode

Grayscale mode images and Multichannel mode images are the only images you can directly convert to Black & White mode. If an image is not Grayscale, convert it to Grayscale mode first if you want to convert it to Black & White mode.

1 Select the paint objects and use the Image Mode menu on the Properties bar or choose Image > Mode > Black & White. The Select Halftone Method dialog box lets you choose a conversion option.

2 Select Pattern Dither, Diffusion Dither, or Threshold, and then click OK.



- If you choose Pattern Dither or Diffusion Dither, Canvas "screens" the image, rendering its tones as patterns of tiny dots. Pattern Dither screens an image using a fixed pattern similar to a traditional halftone screen. Diffusion Dither screens an image using a process that creates a random pattern effect.
- If you choose Threshold, Canvas converts the image to a high-contrast, black-and-white image. Pixels of lightness values from 0 to 128 become black, and pixels of lightness values from 129 to 255 become white.

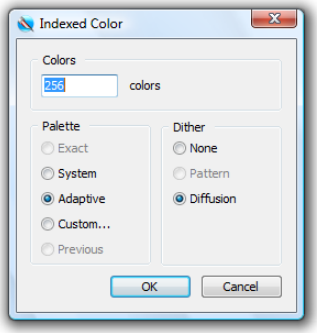
When you paste a selection into a Black & White image, Canvas uses diffusion dither on the selection.

Grayscale image mode

Grayscale mode is appropriate for images scanned from black & white photographs or when the image will never be printed in color. In Grayscale mode, pixels use 256 brightness levels to represent a range of shades from pure black to pure white. Grayscale uses 8 bits per pixel and requires less memory than most color modes.

If you convert a color image to Grayscale mode, Canvas discards all color information.

Indexed image mode



Indexed color mode uses a palette of 256 colors for images. Since this mode stores fewer colors, it requires significantly less memory than RGB and CMYK color modes, both of which support millions of colors. Smaller memory requirements make Indexed mode especially useful for images used on Web pages.

An Indexed image includes a color table, or palette, of colors used in the image. When you convert an existing image to Indexed mode, you can specify the number of colors from the image to include in the color table.

Most image filters, effects, and opacity controls aren't available to be applied to Indexed images, except the Offset and De-Interlace filters, as well as some third-party plug-in filters.

To convert an existing image to Indexed mode

1 Select the paint objects and choose Indexed from the Image Mode menu. The Indexed Color dialog box appears.

2 Choose an option in the Indexed Color dialog box for the color table:

Exact	Creates a color table from the colors in the image, if the image contains 256 colors or less; otherwise, this option isn't available
Uniform/ System	Creates a color table based on the operating system's palette of 256 colors (System), or a subset of these colors (Uniform)
Adaptive	Creates a color table from the most frequently used colors in the image
Custom	Lets you create a color table, load, and save color table files.
Previous	Applies the last color table used in the Indexed Color dialog box during the current Canvas session

3 Depending on which method you select, the Colors area in the dialog box displays information about how the color table is computed. Choose the option you want, if necessary:

Exact	If you choose Exact, the Colors area displays the number of colors in the selected image
Uniform/ System	If you choose System, the Colors area displays the number of colors in the operating system's palette; if you choose Uniform, a pop-up menu that lets you select 8, 27, 64, 125, 216, or 256 colors appears

Exact	If you choose Exact, the Colors area displays the number of colors in the selected image
Adaptive	If you choose Adaptive, the Colors area displays a text box that lets you enter a number of colors from 2 to 256
Custom	If you choose Custom, the Colors area displays "Custom colors"
Previous	If you choose Previous, the Colors area displays the number of colors in the last color table created by the Indexed Color dialog box during the current Canvas session

4 Choose a color-distribution option in the Dither area:

None	Changes colors to their closest equivalent in the selected color table without dithering
Pattern	Approximates colors not in the palette by arranging palette color in geometric patterns (available for Uniform/System method only)
Diffusion	Approximates non-palette colors by randomly dithering available colors; creates the most natural effect

5 Click OK after choosing the settings you want.

Note: If you select the Custom option, the Color Table dialog box appears (see "To create a custom color table for Indexed images," page 22.32).

✓ Tip
If the image is already Indexed, choose Image > Mode > Color Table to open the Color Table dialog box.

To create a custom color table for Indexed images

1 Select "Custom" in the Indexed Color dialog box (see "Indexed image mode," page 22.31).

2 Click OK in the dialog box and Canvas opens the Color Table dialog box.

In the Color Table dialog box, you can edit individual colors in the palette, create a blend of colors, and select from several preset color palettes, including System and Grayscale palettes. In addition, palettes can be saved or loaded.

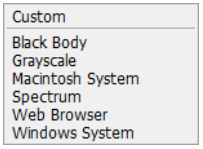
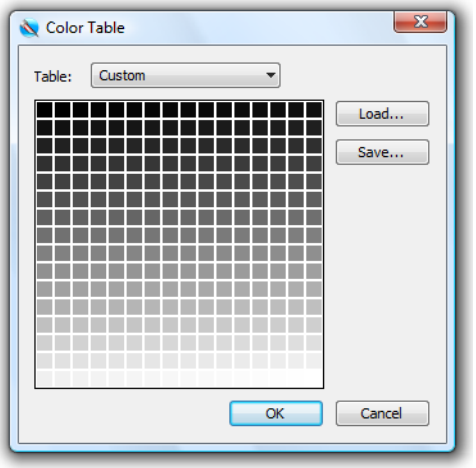


Table menu



In the Color Table dialog box, a grid of 256 color swatches appears; each swatch represents one color in the palette. By default, the Custom option appears in the Table menu, and the color swatches show the last palette used in the dialog box.

The Table menu lets you choose among preset color tables:

This color table	contains
Black Body	a range of sunset-like colors.
Grayscale	a ramp from pure black to pure white.
Spectrum	a set of rainbow colors.
Web Browser	a set of 216 colors that can be displayed without dithering by nearly all Web browsers. This option is also referred to as a "browser safe" palette.
Windows System	the palette of colors supported by Windows.

You can also create a custom color table (see "To customize individual colors" on page 22.34 and "To customize a color table by blending colors" on page 22.35).

Saving and loading color tables

By using the Load and Save options in the Color Table dialog box, you can save color tables to your hard disk or load a saved color table file into the Color Table dialog box.

To load a custom color table

1 Click Load in the Color Table dialog box. A Load Settings dialog box appears.

2 Locate the color table file you want to load, and then click Open. Canvas replaces the current palette in the Color Table dialog box with the new palette, and its name appears in the Table menu.

To save a custom color table

✓ **Tip**
Save your custom color tables in a central location on the corporate network and share them with coworkers.

1 Click Save in the Color Table dialog box. A Save Settings dialog box appears.

2 Enter a name for the table in the File name field. Before you type the file name, Canvas adds the extension .ACT in the field. Keep this extension when naming the file.

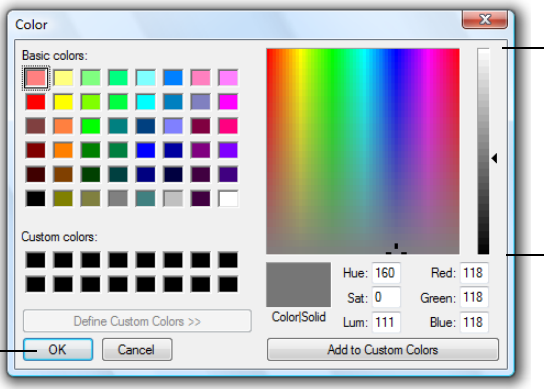
3 Specify a location on your hard disk to save the color table, and then click Save. Canvas saves the color table.

To customize individual colors

After choosing a color table, you can customize individual colors in it using a color picker dialog box.

1 Click a color swatch to open a color picker dialog box.

Color Picker



Color selector area

Click to choose a color

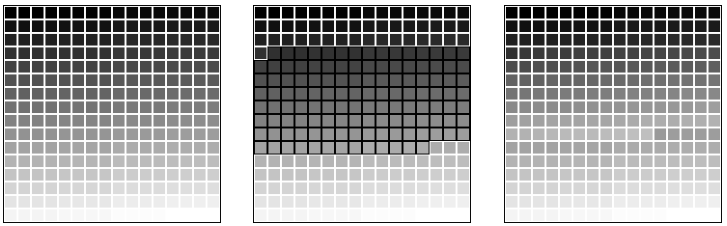
2 In the color picker, select a color to replace the selected swatch in the palette, and then click OK.

To customize a color table by blending colors

Canvas lets you create blends of selected swatches in the color table. When you do this, the first and last swatches you select don't affect the final blend in the color table. How the blend appears in the color table is determined by the two colors you choose in the Color Picker in step 2 of this procedure.

1 Drag across multiple color swatches to select them (the more you select, the more gradual the blend will be). Selected color swatches appear highlighted with a black border, and then the color picker dialog box opens.

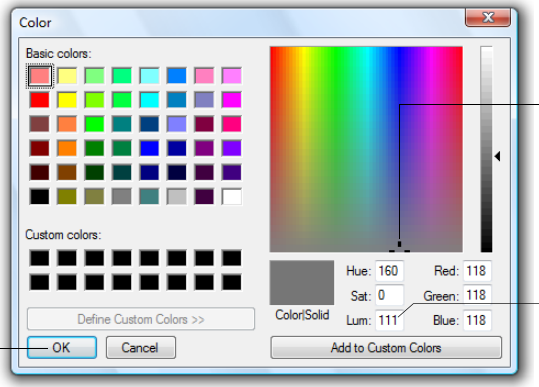
Original Grayscale palette



Drag to select color swatches to replace with a blend

2 In the color picker, choose the first color, and then click OK. The color picker remains open; choose the second color, and then click OK. Canvas fills the selected color swatches in the Color Table dialog box with a ramp of the two colors.

Color picker



Color selector

Luminosity control

Click to select the current color

RGB color image mode

RGB color mode is used most often when working with high-quality full-color images, such as those from color scanners and digitized photographs stored on CD-ROM.

RGB color mode is the most reliable mode to use for images you want to modify with painting tools and filters. However, the full range of RGB colors exceeds the range that commercial printing can reproduce, so you should be aware of the limitations of the printing method that will be used. Also, an RGB color image is device dependent, which means that the same RGB values can look different when displayed on different monitors.

✓ **Tip**
Remember that RGB is used for images on the Web and CMYK is used for print.

In RGB color mode, each pixel has a red, green, and blue component. Each component, referred to as a color channel, has 256 intensity levels. The combination of the intensity value in each channel creates each pixel's color.

CMYK Color image mode

CMYK color mode is based on the four color inks used in commercial printing (and by some desktop printers): cyan, magenta, yellow, and black. Some color scanners can produce CMYK images.

In a CMYK color image, each pixel has a cyan, magenta, yellow, and black component. Each of these color channels has 256 intensity levels. The combination of the intensity value in each channel creates each pixel's color. Because monitors are RGB devices, they can't display CMYK colors directly. However, Canvas attempts to display CMYK images as they will appear when printed.

LAB color image mode

The Commission Internationale d'Eclairage (CIE) developed the LAB color mode as an international color standard to overcome the device dependency of the RGB and CMYK modes. In a LAB color mode image in Canvas, each pixel has one lightness and two color components. The Lightness (L) channel has 256 levels of intensity. The two color channels, labeled A and B, provide a color range from red to green and yellow to blue, respectively.

Some companies sell collections of images in LAB color mode. Editing LAB color mode images with some filters or painting tools can have interesting and unpredictable effects.

Duotone image mode

✓ Tip
The term "Duotone" refers to the Duotone image mode, not just to images printed with two inks. In Duotone mode, an image can be printed as a monotone, duotone, tritone, or quadtone.

In traditional graphics arts reproduction, a "duotone" is a grayscale image printed with black and an additional color. Canvas lets you create duotone images, as well as "monotone," "tritone," and "quadtone" images (printed with one, three, or four colors, respectively).

Printing images as duotones can add interest and increase the tonal range reproduced from grayscale photographs, without the additional expense of printing full-color images. The duotone effect can be subtle or striking, depending on the color used and the amount added to the image. In any case, the additional colors are used to reproduce the gray values in the image, rather than to reproduce specific colors.

To create a monotone, duotone, tritone, or quadtone in Canvas, you must convert a Grayscale image to Duotone mode. Unlike other image modes, once an image is converted to Duotone mode, you cannot work with individual image channels. Instead, you can adjust curves for each color "channel" in the Duotone Options dialog box.

To create a Duotone image

✓ Tip
You can also select image modes by choosing Image > Mode.

1 Select paint object and choose Grayscale from the Image Mode menu to convert to Grayscale mode.

2 Click OK when Canvas prompts to discard color information. Then, choose Duotone from the Image Mode menu.

✓ Tip
If you plan to export a duotone image to another graphics or page layout program, be sure the color names exactly match the color names in the other application. Otherwise, you might produce more color separations than necessary.

3 Choose Monotone, Duotone, Tritone, or Quadtone from the Type menu in the Duotone Options dialog box. Depending on the Type setting, the Ink 1, Ink 2, Ink 3, and Ink 4 Curve boxes, color menus, and text boxes become available.

4 Choose ink colors by pressing the color palette icons and selecting colors in the palettes. *Note:* You must have already added the desired colors to the Presets palette for them to be available in the pop-up palette.

- For a monotone image, choose a single color in the Ink 1 area. For a traditional duotone, leave "Process Black" as Ink 1, and choose a second color in the Ink 2 area. For tritones and quadtones, choose additional colors for Ink 3 and Ink 4.
- Canvas puts the name of the selected ink in the text box.

- **To use process colors:** Type the appropriate name ("Process Cyan," "Process Black," "Process Magenta," or "Process Yellow,") so colors appear on the correct plates. If you leave the text box blank, Canvas prompts you to enter a name for the ink.

    - Specify ink colors in descending order of lightness value; i.e., darker color inks should appear at the top, and lighter color inks should appear at the bottom of the dialog box.
    - Assign only solid spot colors or individual process colors for duotones. If you assign a color ink made from CMYK components, Canvas treats it like a spot color and prints only one plate for the color when you output color separations.

5 If necessary, click the curve boxes to adjust curves for each ink color. In the Duotone Curves dialog box, drag the curve to adjust it, or enter values in the text boxes to map input values to the desired output values, and then click OK.

6 Click OK to apply the Duotone Options dialog box settings.

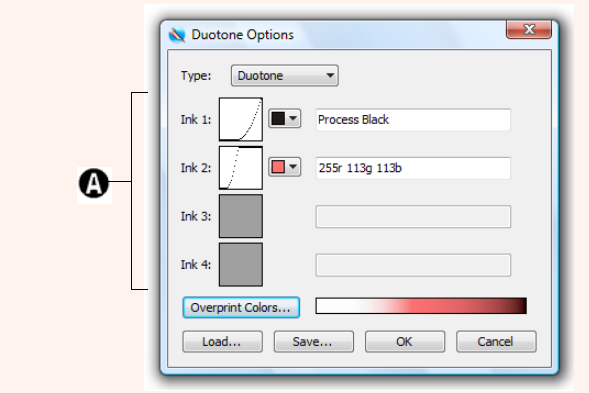
Duotone Options

You can select and change the following ink settings for images in Duotone mode.

Type. Choose Monotone, Duotone, Tritone, or Quadtone.

A Inks. Click the palette icons and select colors in the palettes for each ink. Type process and spot color names in the text boxes.

Overprint Colors. Click to adjust the screen display of the Duotone inks. Because the appearance of spot-color combinations can't be predicted within Canvas, you can do this if you have an accurate printed reference for the colors you select. Overprint Colors settings do not affect color separations, but will change the appearance of color composites printed on desktop color printers. In the Overprint Colors dialog box, click the color squares to open a color selector dialog box. Choose the color you want to represent the ink combination on screen and then click OK.



To adjust duotone images

After you convert an image to Duotone mode, reopen the Duotone Options dialog box to adjust the color curves, change ink colors, as well as use the Load and Save options.

To change duotone options

1 Select the paint object you want to adjust and choose Image > Mode > Duotone Inks.

2 Adjust the settings in the Duotone Options dialog box and click OK to implement the new settings.

To load and save duotone information

Use the Load and Save buttons in the Duotone Options dialog box to work with files of duotone options information. Canvas uses a file format compatible with the duotone options files used by the Photoshop image-editing program, so you can load files saved from Photoshop, and files saved by Canvas can be loaded into Photoshop.

- Click Save to save the duotone options settings. In the directory dialog box, type a file name and click OK or Save.
- Click Load to use settings from a saved duotone options file. In the directory dialog box, select a duotone options file and click Open. Canvas will apply the ink and curve settings saved in the file to the Duotone Options dialog box.

Multichannel image mode

Multichannel image mode lets you work with multiple channels of grayscale information for a grayscale image. In multichannel mode, each channel contains lightness values as in other image modes, but the values do not relate to color components.

When you convert an image to Multichannel mode, the image data does not change; e.g., if you convert an RGB Color mode image to Multichannel mode, the Red, Green, and Blue channels retain the same pixel information, but the channels no longer represent color pixels. The channels in Multichannel mode are labeled numerically (#1, #2, and so on) in the Channels palette.

The Multichannel mode is not available if you select a paint object containing an image in Black & White image mode.

Removing red eye

Canvas includes an image editing tool that you can use to correct red eye in digital images.



Red Eye Reduction tool

What is red eye?

Red eye is a photographic phenomenon caused by light reflecting off the interior surface of the eye, which produces a red glare within the eye.



Select the Red Eye Reduction tool and the tool options appear on the Properties bar.

A Method. Select a either the Automatic or Manual Selection method.

B Intensity. Drag the slider or enter a percentage to set the intensity.

C Mode. Select either Darken, Hue, or Color.

Darken. Compares the underlying color and the applied eye color, and the result is whichever color is darker.

Hue. Applies the hue of the eye color without changing the brightness and saturation.

Color. Changes the hue and saturation of the painted area to the hue and saturation of the applied color, without affecting the shadow, highlights, or midtones of the original image.

D Feather Radius. Enter a value to blend the edge of the adjusted eye.

E Eye Color. Select an eye color from this menu.

To use the Red Eye Reduction tool with Automatic Selection method

With the Automatic Selection method, you can correct the red eye effect in two ways:

- Click the cursor within the red area of the eye.
- Click-drag the cursor to form a rectangle over the eye area.

1 Place the image into paint edit mode.

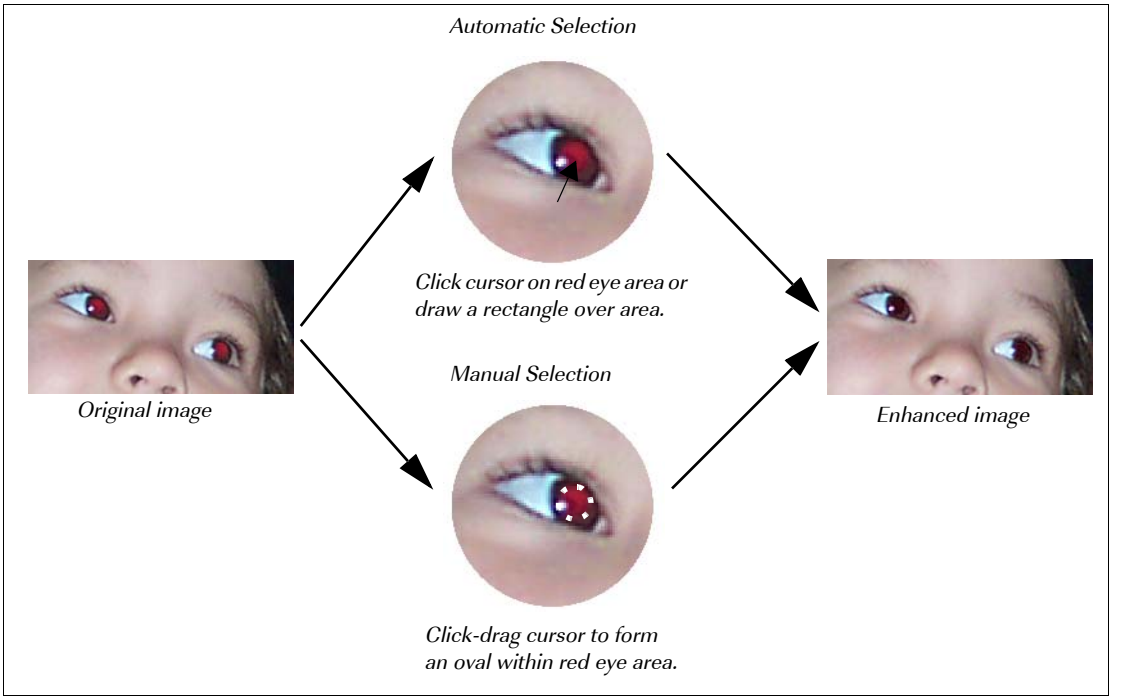
2 Magnify the eye area that needs to be retouched, if necessary.

3 Select the Red Eye Reduction tool.

4 Select the Automatic Selection radio button in the Properties bar.

5 Choose an intensity, feather radius, mode, and eye color.

6 Correct the red eye effect by clicking the red area or forming a rectangle as previously described.



To use the Red Eye Reduction tool with Manual Selection method

1 Place the image into paint edit mode.

2 Magnify the eye area that needs to be retouched, if necessary.

3 Select the Red Eye Reduction tool.

4 Select the Manual Selection radio button in the Properties bar.

5 Choose an intensity, feather radius, mode, and eye color.

Correct the red eye effect by forming an oval as previously described.

CHAPTER 23

SCANNING, SIZING & TRACING IMAGES

This chapter focuses on acquiring and sizing images. You will learn how to scan images into Canvas documents, change the image size and resolution, and auto-trace images to create vector objects from them. This chapter also describes some basics techniques to improve scanned images and photographs.

Using scanners to acquire images

You can scan images directly into Canvas documents using most types of desktop scanners. Canvas supports scanners that are compatible with the TWAIN standard.

Using TWAIN-compatible scanners

Scanner manufacturers created the TWAIN interface to standardize interaction between scanners and computer software. Scanners that comply with the TWAIN standard provide a "source manager" file, which translates scanner information into data that Canvas can use. You must install the TWAIN scanner software on your system before you can select the scanner and scan images in Canvas.

If you aren't sure whether a scanner is TWAIN-compatible, consult the scanner documentation or contact the manufacturer.

To select a TWAIN scanner

1 Choose Image > TWAIN Import > Select Scanner. In the Select Source dialog box, a scrolling list contains the names of all TWAIN scanners for which Canvas can locate a data source.

2 Select the scanner you want to use and click OK. The Select Source dialog box closes and the scanner you selected becomes the active scanner.

To acquire images using a TWAIN scanner

1 When you scan an image, it appears in the active Canvas document. Open an existing document or choose File > New to create a new document.

2 Choose Image > TWAIN Import > Acquire Image. A dialog box for the scanner you are using appears. Refer to the scanner's user manual for information on scanner options.

3 Select the options you want in the scanner dialog box.

- Click Prescan to view a preview of the image. You can verify that the image is aligned and completely visible and reposition it if necessary.
- Depending on the available options, you can adjust scaling and brightness of the image.

4 Click Scan to begin scanning. When the scanner finishes, the scanned image appears in the active Canvas document.

Choosing a scanning resolution

Digital images are composed of square pixels, and pixel size is a major factor affecting image quality. The resolution of an image is expressed as the number of pixels per (linear) inch (ppi), or pixels per centimeter. Smaller pixels result in higher image resolution, which generally indicates better image quality. With scanned images, the resolution is also a measure of how much information has been captured from the original artwork.

At relatively low resolution, such as 75 ppi, lines, edges, and character shapes in an image can appear jagged (see "About digital images and resolution" on page 23.3).

Use the following questions to help you decide an appropriate resolution when you scan images.

Are you scanning line art or text? Line art, such as pen and ink drawings, and high-contrast images with sharp edges or type, should be scanned at the highest resolution possible. Text scans that will be processed with character-recognition software should also be scanned at high resolution for accurate translation.

What halftone screen frequency will be used for printing? For continuous-tone images (photographs), a common rule of thumb is to scan at a resolution of 1.5 or at most 2 times the screen frequency. For example, for offset printing on newsprint at a screen frequency of 85 lines per inch (lpi), an image should be scanned at 128 to 170 ppi. For images printed at 133 lpi, scanning resolution should be 200 to 266 ppi.

✓ **Tip**
Because resizing tends to blur an image, you can use the Unsharp Mask filter to sharpen it. For more information, see "Sharpen filters" on page 24.20.

Talk with service bureaus and commercial printers about the screen frequency used for your projects. With this information, you can let Canvas calculate the optimal resolution for an image (see "Resampling and sharpening images" on page 23.13).

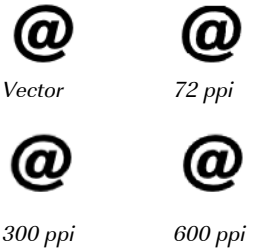
Will the final image be smaller or larger than the original? If you need to enlarge the image, you should scan it at a higher resolution to retain the most information when you resize it. If you will reduce the size of the image, you can scan it at a lower resolution.

About digital images and resolution

Digital images, also known as raster and paint images, are composed of tiny square pixels.

The number of pixels that fit in a linear inch or centimeter is the image resolution. The resolution indicates how much information is in the image, independent of the resolution used to display the image on screen or to print it.

Low-resolution images have larger pixels and look more jagged than high-resolution images. However, while high-resolution images look smoother, they also require more memory and disk space.



Changing image size

You can use several methods to resize or scale paint objects and the images they contain.

Keep in mind that altering the size or resolution of a paint object can degrade the quality of an image. Canvas uses interpolation to estimate pixel values when necessary, but this can result in loss of sharpness or detail when large scaling factors are applied.

The best way to avoid image degradation is to avoid changing image size or resolution.

- If an image is too big for a particular layout, consider cropping the image, rather than resizing or scaling it to fit.
- If a photographic image requires higher resolution, try rescanning the original at a higher resolution, rather than increasing the resolution in Canvas.

If you resize, skew, or rotate a paint object, you can restore the original shape and resolution by choosing Effects > Remove Effects.

✓ **Tip**
You can also remove effects via the Undos palette or by using the keyboard command: Ctrl+Z.

Stretching images with the mouse

You can change the size of a paint object by clicking on it with the Selection tool and dragging a selection handle. Stretching an image non-proportionately also stretches the pixels, which can cause unwanted distortion to the image.

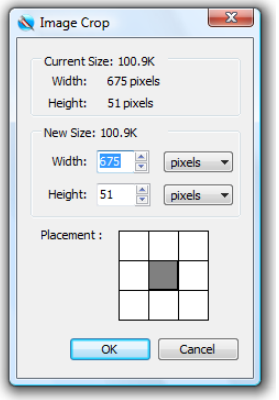
Scaling images using the Scale command

Change the size of a paint object by selecting it and choosing Object > Scale. The Scale command lets you maintain the object's proportions or distort an image by scaling it in one direction. Using the Scale command does not add or remove pixels from an image. For information on using Scale, see "Scaling objects" on page 16.32.

Using the Crop command to change image size

Use the Crop command to adjust the overall size of an image.

- When you enlarge an image, Canvas adds white pixels.
- When you reduce an image, Canvas crops out pixels and discards the image data.



Specify relative or absolute measurements in the Image Crop dialog box

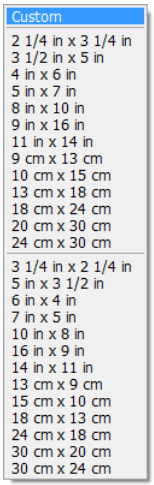
To crop an image

1 Select a paint object (not in edit mode) and choose Image > Area > Crop. A dialog box displays the current size, width, and height.

2 Under New Size, enter the size you want the image to be. Use percent, pixel, inch, centimeter, point, or pica values.

3 Click a square in the Placement grid to set the position of the resulting image; e.g., to crop the image from the right side and bottom, click the upper-left square in the Placement grid. To expand the image on all sides, click the center square.

4 Click OK to resize the image. If you are reducing the image area, Canvas warns you it will delete pixels; click OK to proceed.



Using the Crop & Scale menu

Canvas features a Crop & Scale menu that you can easily access via the Properties bar when an image object is selected.

When you choose a cropping size from the Crop & Scale menu and apply it to a selected image, a cropping rectangle appears on the image, just as if you were using the Crop tool. Click inside this rectangle and Canvas crops your image.

Cropping options

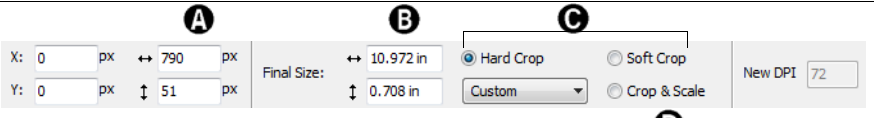
Canvas can crop an image in three ways: Soft Crop, Hard Crop, as well as Crop and Scale. The cropping options also appear in the Properties bar after clicking the Crop tool on an image.

Hard Crop Extra pixels are permanently removed.

Soft Crop Extra pixels are temporarily hidden. When the image is in edit mode, you can see the hidden pixels.

Crop & Scale When applied, a hard crop is performed and the resulting image is scaled proportionally.

Apply a cropping size from the Crop & Scale menu to a selected image and various cropping options appear in the Properties bar.



Crop & Scale options

A Width & height of cropping rectangle in pixels.

B Width & height of cropping rectangle in current ruler units.

C Hard & soft crop options. Select either radio button to perform a permanent or temporary crop. The cropped image is not scaled with these options.

D Crop & Scale. Select this radio button to permanently crop and scale an image. After cropping, the image is scaled proportionally. With the Crop & Scale option, you can also define the DPI of the image by entering a value in the New DPI field.

To apply a crop command

1 Select the image object. The image should not be in paint edit mode.

2 Click on the Crop & Scale menu and select a preset crop size or Custom. You cannot manually resize the cropping rectangle when using a preset crop size. You have to select another crop size

✓ Tip
The center of the cropping rectangle is indicated by a square icon.

from the menu. Select Custom to be able to resize the cropping rectangle.

3 Move the cropping rectangle, if necessary. Place the cursor on the border of the cropping rectangle and a hand appears.

4 Place the cursor within the cropping rectangle and click to complete the crop.

Using the Trim or Trim to Path command

✓ **Tip**
Canvas alerts you if the image can't be trimmed because a border can't be found.

The Trim command lets you remove same-color pixels that are near the edge of the image area. This feature is useful for removing unwanted white space or other borders that are not part of the main image, e.g., you scan a photo that doesn't fill the entire scanner area, and there is a white border around the photo. The Trim command identifies the edges of the image, determines which pixels around the border match, and deletes the unwanted border.

To trim an image

1 Select one or more paint objects to trim.

2 Then choose Image > Area > Trim to remove the border.

The Trim to Path command lets you trim an image with a vector or text object. Unlike a clipping path, which "hides" anything outside the path, the Trim to Path command deletes any part of the image that is outside the path. The result is a single image object, rather than an image and vector object as is the case with clipping paths (see "Using clipping paths," page 20.4).

To trim an image to path

✓ **Tip**
The trimming object cannot be larger than the image. If a part of the path doesn't touch the image, an error occurs.

1 Position a text or vector object (trimming object) in front of the image to be trimmed.

2 If necessary, select the text or vector object and choose Object > Arrange > Bring to Front to put it in front of the image object.

3 Select both the trimming object and image.

4 Choose Image > Trim to Path.

Note: You can even use special objects, such as Concentric Circles, Spirals, Multigons, and Cubes to trim an image.



We want to create a uniquely shaped image from this original photo.

In this example, a heart-shaped Bézier curve is used as a trimming object. Place the trimming object in front of the image. Select both objects and choose Image > Trim to Path.





The result is a single heart-shaped image.

Using the Crop tool to change image size

Crop tool 

Use the Crop tool to select a rectangular part of an image and hide the rest, which is called a "soft crop." When you edit a soft-cropped image, the cropped area reappears while the image is in edit mode. When you finish editing, Canvas re-crops the image.

When you use the Crop tool on an image, you have access to the Crop & Scale menu in the Properties bar (see "Using the Crop & Scale menu" on page 23.5).

- **To access "soft crop edit mode":** Select the Crop tool and then right-click.

You can also use the Crop tool to "hard-crop" an image, which adds or removes pixels, as an alternative to using the Area > Crop command. See "To remove pixels when cropping an image" on page 23.9, and "To add pixels with the Crop tool" on page 23.9.



Soft crop pointer indicates cropping will be temporary



Hard crop pointer indicates cropping will be permanent



A gavel appears in crop mode when the pointer is in the image. Click to complete the crop.



A hand appears in crop mode when you point to a side of the cropping rectangle. Drag to move the rectangle.



This symbol appears if the pointer is outside the image in crop mode

To crop without deleting pixels

1 Select the Crop tool and point to the image you want to crop.

2 Click the image with the crop pointer. Canvas displays a rectangle with hollow handles. This cropping rectangle defines the outside edges of the image after cropping.

3 Position the cropping rectangle to frame the part of the image that you want to keep.

- Drag a corner handle to resize the cropping rectangle.
- Drag a side to move the cropping rectangle. The pointer changes to a hand when you point to a side.

4 Press Esc to crop the image, or click in the image. Canvas hides the part of the image outside the cropping rectangle.

To restore a cropped image

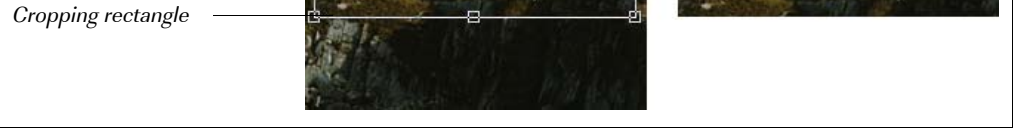
You can select a paint object and choose Effects > Remove Effects to remove a soft crop. Or, use the following procedure:

1 Click the image with the Crop tool. Canvas displays the full image area and the cropping rectangle.

2 Drag the corner handles outward so the entire image is inside the cropping rectangle, and then press Esc, or click in the image.

Cropping an image

Adjust the cropping rectangle with the Crop tool by dragging a handle. Enclose the area you want to keep, and then press Esc to hide the cropped part of the image.



✓ Tip

Quickly crop or expand a paint object using the Selection tool. Select the paint object (don't put it in edit mode), then Ctrl-drag a handle to crop or add pixels to the image. When you drag, the cropping rectangle and handles appear. When you release the mouse, Canvas applies a hard crop.

To remove pixels when cropping an image

In hard-crop mode, the Crop tool discards pixels that are outside the cropping rectangle.

1 Select the Crop tool and Ctrl-click the image you want to crop. Canvas displays a cropping rectangle around the boundary of the image.

2 Position the cropping rectangle so it frames the part of the image you want to keep.

- Drag a handle to resize the cropping rectangle.
- To move the cropping rectangle, point to any side, and the pointer changes to a hand. Drag the cropping rectangle to reposition it.

3 Press Esc or click in the image to complete the crop.

✓ Tip

If the paint object you crop is an Indexed mode object, the color of the added pixels is the last color in the color table associated with the image, which often is black.

To add pixels with the Crop tool

1 Select the Crop tool and point to the image you want to crop.

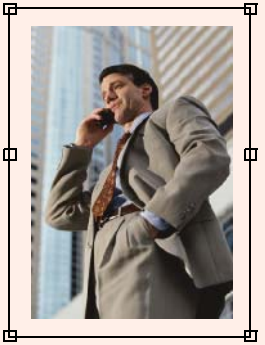
2 Alt-click the image you want to enlarge. Canvas displays a cropping rectangle with hollow square handles at the corners.

3 Drag the handles of the cropping rectangle to enlarge it

4 Press Esc or click in the image to complete the crop.

Adding a white border

When you press a modifier key and click with the Crop tool, you can expand a paint object. This adds a white border to an RGB Color or CMYK Color image.



Crop rectangle



New border

To quickly crop an image with the Selection tool

1 When a paint object is selected (not in edit mode), point to a handle, and then press Ctrl and drag the handle. When you drag, a cropping rectangle appears.

2 Drag inward to crop (cut away) part of the object. Drag outward to add pixels and expand the object. Release the mouse to complete the operation.

To constrain the cropping rectangle as you drag

- **To constrain the height and width of the cropping rectangle proportionally:** Release the Ctrl key, and then press Shift while dragging.
- **To constrain the height and width of the cropping rectangle symmetrically from the center:** Release the Ctrl key and then press it again while dragging.
- **To constrain the height and width of the cropping rectangle both proportionally and symmetrically :** Release the Ctrl key and then press Ctrl+Shift while dragging.

Changing resolution

Change the resolution of paint objects in two ways:

- If you do not want to change an object's size, resample the image. Resampling merges or divides pixels.
- If you want to preserve all the data in an image, change the object's resolution and allow its size to change.

✓ **Tip**
For Web pages and other applications where images are displayed on a monitor, 72 ppi is the standard resolution.

Decreasing resolution ("down sampling") decreases file size by discarding data, which can result in lost detail; however, it's common to reduce resolution in some situations.

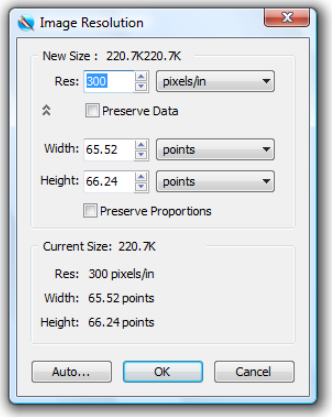
Rarely, an image is resampled to increase resolution. This should be avoided because additional pixels are created by estimating their color values, which does not improve an image.

The Resolution dialog box has compact and expanded states. In its compact state, you can easily change the resolution of multiple paint objects without needing to specify additional options (see "Image resolution settings" on page 23.11).

Image resolution settings

Specify the resolution, width, and height for a selected paint object when the Image Resolution dialog box is expanded. Expand the dialog box when a single paint object is selected; if multiple objects are selected, they must match in size and resolution.

Depending on the options you select, certain settings in the dialog box can't be changed. A bracket and chain icon indicate settings that are linked and fixed.



Expanded dialog box

Preserve Data Prevents resampling, or interpolation, when resolution or size changes. Selecting Preserve Data also selects Preserve Proportions, so width and height change only in proportion to each other.

Preserve Data means image resolution and size are relative; changing the resolution will change the object size, and changing the size will change the image resolution.

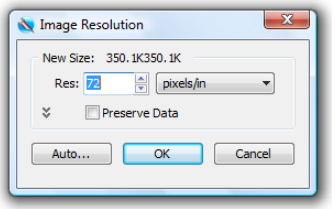
If you select Pixels in the Width and Height menus, you cannot change these values, because the number of pixels cannot change when Preserve Data is selected.

Width and Height Specify a size for the paint object by entering values in these text boxes. Select measurement units in the adjacent menus.

The width and height boxes show the size a paint object will become if you change the resolution when Preserve Data is selected.

Preserve Proportions This option links the Width and Height values so that changing one value changes the other and maintains the original proportions of the paint object. Selecting Preserve Data also selects this option. If you want to stretch a paint object in only one direction, deselect Preserve Proportions.

Note: When more than one paint object is selected (unless the objects are the same size and resolution), the button that displays additional options in the Resolution dialog box is not available.



Compact dialog box

To change resolution by resampling

This procedure reduces resolution of paint objects for use on a Web page or in a presentation.

1 Select one or more paint objects. These objects can vary in size and resolution.

2 Choose Image > Area > Resolution. The Image Resolution dialog box appears in its compact state.

3 Select pixels per inch or pixels per centimeter and enter the resolution value in the text box.

4 Click OK. Canvas changes the resolution of the selected objects, which remain the same size.

To change resolution without resampling

Use this procedure to change the resolution of paint objects without resampling. This changes the size of objects while preserving the image data.

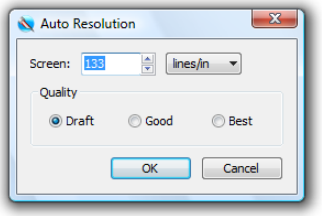
If you reduce resolution, paint objects become larger because the individual pixels are larger. If you increase resolution, paint objects become smaller because the individual pixels are smaller.

1 Select one or more paint objects and choose Image > Area > Resolution.

2 In the Image Resolution dialog box, select Preserve Data.

3 Enter the desired resolution in the text box and click OK. Canvas changes the resolution of the selected paint objects.

To calculate resolution



If only one object is selected, you can calculate an appropriate resolution based on a halftone screen frequency

1 Click Auto in the Image Resolution dialog box.

2 Enter the screen frequency and choose Draft, Good, or Best. Canvas calculates the resolution by multiplying the screen frequency by 1 (draft), 1.5 (good), or 2 (best).

3 Click OK to enter the calculated resolution in the Image Resolution dialog box.

Resampling and sharpening images

Resizing and resampling causes images to appear softer. However, you can apply the Unsharp Mask filter to bring soft images back into focus. For more information, see "To apply the Unsharp Mask filter" on page 24.20.



Original 300 ppi



Resampled down to 150 ppi



150 ppi image resampled up to 300 ppi



150 ppi image with Unsharp Mask filter applied
Amount = 80
Radius = 1.6
Threshold = 0



300 ppi image with Unsharp Mask filter applied
Amount = 67
Radius = 1.6
Threshold = 0

To specify how Canvas approximates new pixels

When increasing image resolution, Canvas uses one of two methods to calculate color values for the pixels it adds to an image. To change the method, use the Interpolation control in the Configuration Center.

1 Choose File > Configuration Center. Select the Painting manager in the General settings.

2 Select an option under Interpolation and click OK. For more information, see "Painting" on page 12.8.

Auto-tracing images

You can use the Auto Trace command to create vector objects from an image. The Auto Trace command traces an entire image or any channel of an image and is available when a paint object is selected.

Auto-tracing is much faster than tracing an image by hand with the Polygon or Curve tool, although you might need to edit the resulting vector paths.

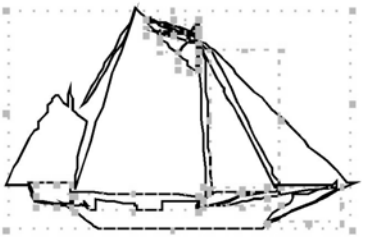
When Canvas performs an auto-trace, the original image is not changed. When the tracing is complete, you can move the vector objects away from the image.

✓ **Tip**
Canvas auto-traces high-resolution images better than low-resolution images. Auto-tracing an image with a resolution lower than 300 ppi can produce jagged paths.

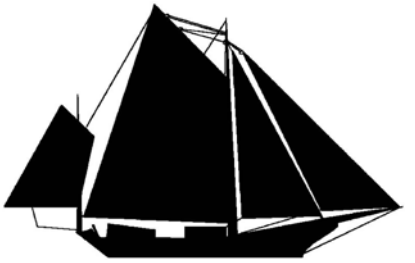
Auto-tracing images

Canvas traces an image with curves or straight path segments. Auto-tracing usually produces several paths that follow various sections of the image.

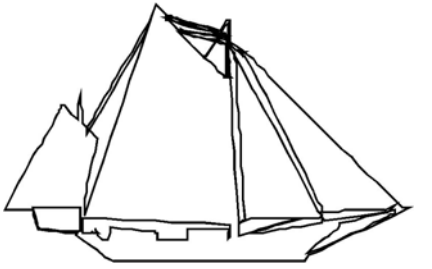
After tracing, group and edit the resulting paths.



Selection handles (highlighted) surround the objects produced by auto-tracing the sailboat image



Original scan at 600 ppi resolution



Paths created with the Auto Trace command

To auto-trace an image

1 Select a paint object to trace and choose Image > Auto Trace.

2 In the Auto Trace dialog box, choose either all channels or a specific color channel to trace from the Channel menu. The options also depend on the type of image.

3 Select other settings to use for tracing.

4 Then click OK to trace the selected paint object.

Auto Trace settings

A The Input section contains information about the image being traced.

Channels. Depending on the image type, you can select All Channels or a specific color Channel from the menu. If the image contains only one color channel, like grayscale or black & white, the Channel option and menu is disabled.

Blur. Use the slider to apply a blur radius to the input image. Blurring removes noise.

Threshold. This slider is only enabled when the input image is grayscale or color and the output result is black & white. The threshold, in this case, modifies the intermediate black & white image used to create the vector (traced) objects.

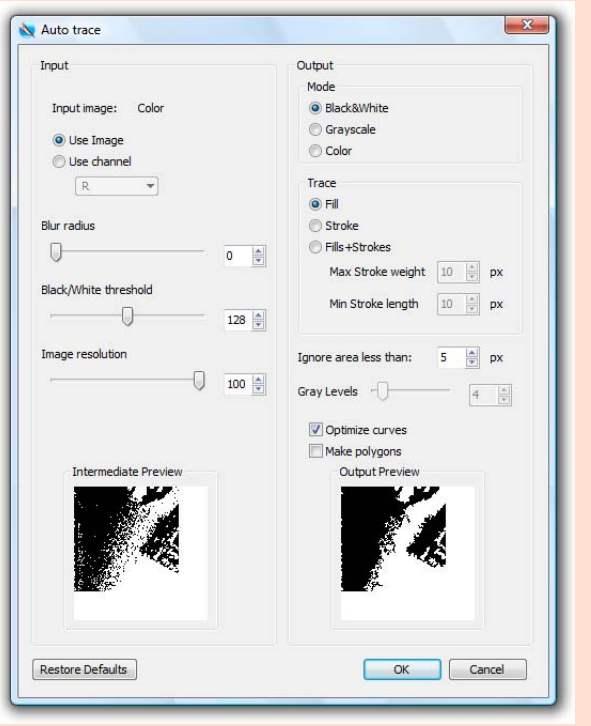
Resolution. This slider adjusts the resolution of the input image. The input image can be traced at its original resolution or at an adjusted one.

The Intermediate Preview indicates the image used for tracing after applying the blur or threshold changes, if applicable.

B Output section

Mode. Select either Black & White, Grayscale, or Color for the output tracing.

Trace. Select either Fill, Stroke, or Fill+Stroke. The Fill option creates filled outlines. The Stroke option is only available when the mode is set to Black & White. Stroke means that centerlines with an approximate width are created rather than outlines. With the Fill+Stroke option, a mixture of filled vector objects and strokes is made. Strokes are created depending on the the values for Max Stroke Width and Min Stroke Length.



Ignore area less than. This option works as a despeckle filter. If isolated pixels or groups of pixels exist in the input image, they will be ignored, instead of creating vector objects from them.

Gray Levels. This slider is only enabled when the output is gray or color. When the output is gray, the level value defines the number of gray levels in the intermediate preview and in resulting vector object. When the output is color, the slider controls how well the details in the image are distinguished. A high value provides better distinction.

Optimize curves. This option reduces the number of points in the curve, without drastically affecting the shape. Optimize is disabled if Make polygons is enabled.

Make polygons. Select this option to create polygons rather than Bézier curves.

The Output preview displays a portion of the resulting vector objects.

CHAPTER 24

IMAGE ADJUSTMENT & CORRECTION

You can adjust images in Canvas using built-in filters and third-party plug-ins. For example, you can use the Levels filter to adjust image highlights and shadows, and sharpen scanned photos with the Unsharp Mask filter.

This chapter describes the commands you can use to adjust image color and brightness. It also describes commands for sharpening, softening, and refining images.

Applying image-editing commands

You can apply most image-editing commands to a single paint object if it's selected or in edit mode.You can also apply most commands to multiple selected paint objects. You can set image modes, apply filters, and adjust settings for multiple paint objects at the same time.

In most cases, a command affects an active selection, or an entire image if nothing is selected in edit mode.

Note: When you apply an image-editing command to more than one selected paint object, you can't use the Preview option if the dialog box has it. Preview is available when a single image is in edit mode.

You can apply a command by choosing Image > Adjust or by using the Adjust menu located in the Properties bar.



The following summarizes how image-editing commands can be applied.

- Mode commands let you set the image mode for one or more selected paint objects.
- You can convert multiple objects to image proxies.
- Crop command and the Proxy Info command can't be applied to multiple objects.

- Resolution command sets the resolution for one or more selected objects.
- Trim command trims one or more selected paint objects.
- You can apply filters to one or more selected paint objects. If a single paint object is in edit mode, a filter applies to the entire image or an active selection.
- Image Measurement command can be applied to paint objects that are selected or in edit mode.
- Many commands in the Adjust menu can be used to uniformly adjust one or more selected paint objects, or a paint object in edit mode.

Working with image-adjustment dialog boxes

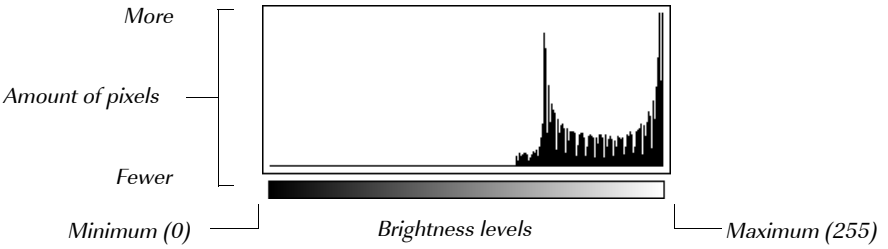
Some dialog boxes for image-editing commands include histograms and preview options to help you achieve the effect you want.

Using the Preview option

Most dialog boxes for image-adjustment commands include a Preview check box. Select the Preview option to see how settings affect the image. Preview is available only when a single paint object is in edit mode.

Understanding histograms

A histogram plots the relative number of pixels in each brightness level in an image.



In the above, shorter bars on the left indicate that the image doesn't contain large areas of very dark pixels. Higher bars toward the right of the graph show that the image contains large areas of medium and very bright pixels.

- **To view an image's histogram at any time:** With an image selected or in edit mode, choose Image > Histogram.

Consolidating colors

The Threshold and Posterize commands let you consolidate color values in an image or selection. Besides producing interesting effects with these commands, you can use them in alpha channels to help isolate areas within an image.

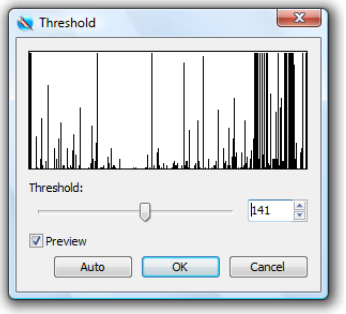
If you select an area within an image, Canvas applies the adjustment only to that area. Otherwise, Canvas adjusts the selected paint objects.

Setting a brightness threshold

Use the Threshold command to convert any image to black and white. The Threshold command compares each pixel's brightness value to a threshold value that you set. It changes brighter pixels to white and darker pixels to black. The threshold setting is based on a scale of brightness values from 0 (black) to 255 (white). You can't use the Threshold command on images in Black & White or Indexed mode.

For example, if you set a threshold value of 128, pixels that are brighter than medium gray become white, while pixels darker than medium gray become black.

To map an image to black and white



1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image is affected.

2 Choose Image > Adjust > Threshold.

3 Enter the threshold value by dragging the slider or typing a number in the text box. If you want Canvas to convert half the pixels to black and half to white, click Auto.

4 Click OK after entering the setting you want.

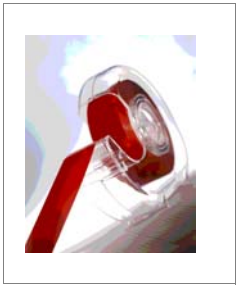
To isolate selections, apply the Threshold command in conjunction with the High Pass filter to an image in an alpha channel (see "Isolating areas using the High Pass filter" on page 26.14).

Creating high contrast 'posterized' images

You can condense the brightness variations in an image with the Posterize command. If you apply the Posterize command to a photograph, it creates a high-contrast image by compressing hundreds of brightness levels into only a few. You set the number of brightness levels you want to retain, and Canvas reduces each color channel to that number of values.



Original RGB image



Posterize 8 levels



Posterize 4 levels

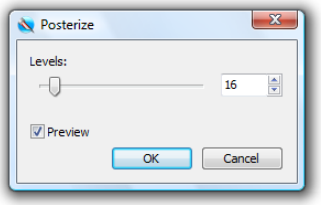


Posterize 2 levels

✓ Tip

You can't use the Posterize command on images in Black & White or Indexed mode.

The Posterize command's effect depends on the mode of the image you posterize; e.g., if you apply the Posterize command with a setting of 2 levels to a grayscale-mode image, the image becomes black and white. If you apply the same setting to an RGB-mode image (even if it contains only grays), the command converts each pixel's red, green, and blue value to either zero or full color, reducing the image to eight colors — red, green, blue, red-green, red-blue, blue-green, black, and white.



To posterize an image

1 Select one or more paint objects to posterize all the images. You can select an area in one image in edit mode to posterize the selected area only. If you don't make a selection, the entire image is affected.

2 Choose Image > Adjust > Posterize.

3 Enter a level from 2 to 255. Higher numbers produce subtle effects. Lower numbers produce high-contrast images.

4 Click OK after you enter the Levels setting.

Changing color and contrast

You can use the Invert, Desaturate, and Brightness/Contrast commands to create special effects and correct lightness levels in images. These commands apply changes equally to all color values.

If you select an area of an image, Canvas applies the command to that area only. Otherwise, Canvas applies the command to the entire image in a paint object.

Inverting colors in images

You can use the Invert command to reverse the colors in an image, as in a photographic negative. The command converts each pixel's color to its opposite hue in the color spectrum. It does this by inverting the brightness value of each pixel in each color channel.

For example, if a pixel is pure red, its brightness levels are 255, 0, 0 in RGB mode. When inverted, this pixel's brightness values become 0, 255, 255, changing it to pure blue-green, its opposite in hue.



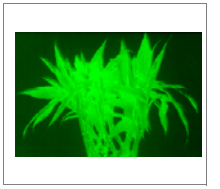
Original RGB



Inverted RGB



Green channel selected



Inverted Green channel

The Invert command can be particularly useful in channel editing, as colored pixels can denote either masked or selected areas.

To invert an image

1 Select one or more paint objects to invert all the images. You can select an area in one image in edit mode to invert the selected area only. If you don't make a selection, the entire image in edit mode is affected.

2 Choose Image > Adjust > Invert.

✓ Tip
You can't use the Invert command on images in Indexed mode.

Desaturating image colors

You can use the Desaturate command to remove color from images completely, while retaining the relative brightness levels of shadows, midtones, and highlights. The command converts an entire image to shades of gray without changing the image mode.

To desaturate an image

1 Select one or more paint objects to desaturate all the images. You can select an area in one image in edit mode to desaturate the selected area only. If you don't make a selection, the entire image in edit mode is affected. This command works with paint objects in RGB Color mode, CMYK Color mode, and LAB Color mode.

2 Choose Image > Adjust > Desaturate or select Desaturate from the Adjust menu in the Properties bar.

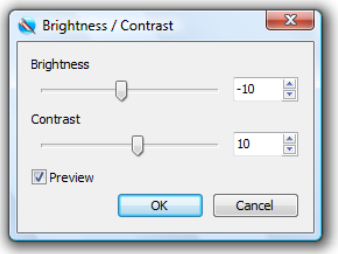
Adjusting brightness and contrast

You can adjust the brightness and contrast of an entire image or specific channels with the Brightness/Contrast command. Brightness refers to the lightness of an image. Contrast is the difference in brightness between two pixels.

Because the Brightness/Contrast command adjusts all pixels equally, you should avoid using it to lighten an image that appears too dark, because the image can lose shadow detail.

- **To preserve shadows or highlights when adjusting the brightness of an image:** Use the Levels or Curves commands (see "Levels" on page 24.7 and "Adjusting brightness curves" on page 24.9).

To use the Brightness/Contrast command



1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected. This command doesn't work with paint objects in Black & White mode or Indexed mode.

2 Choose Image > Adjust > Brightness/Contrast or select Brightness/Contrast from the Adjust menu in the Properties bar.

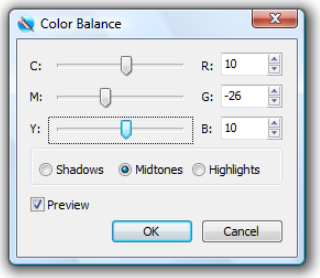
3 Enter a Brightness value from -100 to 100. Higher values can wash out midtones and shadows. Lower values can dull highlights.

4 Enter a Contrast value from -100 to 100. Increasing contrast moves the color values of pixels to the extremes of the brightness spectrum. Decreasing contrast moves color values toward medium gray.

5 After entering the settings you want, click OK.

Color balance

The Color Balance command lets you adjust color in shadows, midtones, and highlights. You can use it with paint objects in CMYK Color or RGB Color modes.



1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected.

2 Choose Image > Adjust > Color Balance.

3 Click Shadows, Midtones, or Highlights to select the tonal range you want to adjust. You can set the color levels independently for each tonal range.

4 Drag a slider toward a color label to increase the amount of that color. The letters indicate the primary color values: Cyan, Red, Magenta, Green, Yellow, and Blue.

When you increase the amount of a color, you also reduce its inverse, which is the color labeled at the other end of the slider.

5 Click Preview to preview the color adjustments. Preview is only available if a single paint object is in edit mode.

6 Click OK to apply the settings.

Levels

You can adjust the brightness of shadows, highlights, or midtones by using the Levels command. Brightness values range from 0 (black) to 255 (white). For colored pixels, brightness is the brightness value in each color channel.

The Levels command works with all image modes except Black & White and Indexed.

To adjust levels

1 Select a paint object to adjust. You can select an area in the image to adjust the selected area only.

2 Choose Image > Adjust > Levels.

3 Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

4 Do one or more of the following

Lighten highlights: Enter a positive number less than 255 in the right Input Levels box, or drag the white slider under the histogram. Canvas assigns the maximum output level to all pixels on the right of the slider.

Lighten shadows Enter a positive number in the left Output Levels box, or drag the black slider under Output Levels to increase the minimum output level. This value becomes the darkest value allowed in the image.

Darken highlights Enter a positive number less than 255 in the right Output Levels box, or drag the white slider under Output Levels to set the maximum output value. This is the brightest value allowed in the image. You can darken highlights in one color channel to bring brighter colors back into the printable color range.

Darken shadows Enter a number greater than zero in the left Input Levels box, or drag the black slider under the histogram. Canvas assigns the minimum output level to all pixels on the left of the slider.

Adjust midtones Enter a value in the center Input Levels box or drag the gray slider under the histogram. To lighten midtones, enter a value from 1.01 to 9.99 or drag the slider to the left. All pixels on the right of the slider will be brighter than medium gray. To darken midtones, enter a value from 0.1 to 1.00 or drag the slider to the right. All pixels on the left of the slider will be darker than medium gray.

5 Click OK.

Saving and loading Levels settings

You can save Levels settings on disk to use again. For example, after correcting a scanned photo, you can save the settings and use them to correct other images scanned from the same source.

- **To save Levels settings:** In the Levels dialog box, click Save. Type a name for the settings file, select a location, and click Save.
- **To load previously-saved Levels:** In the Levels dialog box, click Load. A directory dialog box opens. Locate the settings file you want to open, and click Open.

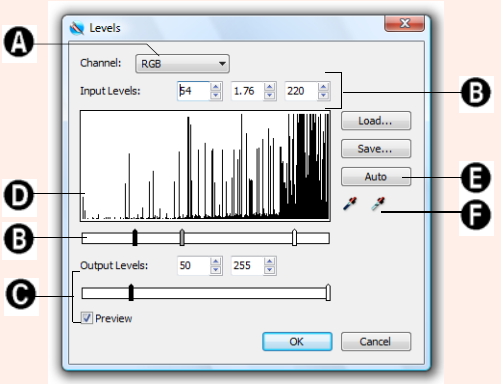
Levels dialog box

Use the Levels dialog box to control different aspects of brightness levels.

A Choose an individual color or channel or the composite channel.

B Type values in the Input Levels boxes or drag the slider under the histogram to set the minimum input level, midtone ratio, and maximum input level.

C Enter numbers in the text boxes or drag the sliders to set the minimum and maximum output levels.



D The histogram graphs brightness levels for the selected channel.

E Click Auto for Canvas to map the darkest values in the selection to black and the lightest value to white.

F Eyedroppers. Click the Set White Point eyedropper tool. Click in the image to pick the values you want to assign to the lightest area in the image. Click the Set Black Point eyedropper tool. Click in the image to pick the values you want to assign to the darkest area in the image.

Adjusting brightness curves

You can adjust the tonal range of an image with the Curves command. Unlike the Levels command, which can set the minimum, maximum, and median values, Curves adjusts the entire range of values. It lets you map input values to output values according to a line ("curve") on a graph. Curves provides the most control over the tonal range of an image.

This command is not available when a paint object in Black & White mode or Indexed mode is selected.

In the Curves dialog box, brightness values range from 0 (black) to 255 (white), or 0 percent (white) to 100 percent (black). To switch between these scales, click the grayscale bar under the graph.

A typical setting is a gentle S-curve (or inverted S-curve, depending on the scale you use), which adds contrast to an image without appearing too harsh.

Curves dialog box

The graph shows how Canvas maps input brightness values to output values. Select Preview to see the effect on the image.

A Choose a channel to adjust.

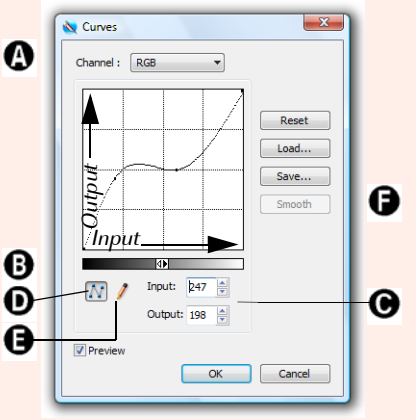
B The grayscale ramp shows the lightness scale, either 0-255 (dark to light) or 0-100 percent (light to dark). Click the ramp to reverse the scale and the curve.

C Type brightness values in the Input and Output boxes. Or, drag the pointer (circled) to specify brightness values. Here, pixels of 157 brightness are lightened to 171.

D Click this icon and drag a point on the curve to reshape the curve. Click the curve to add up to 19 control points. Drag points off the curve to delete them.

E To draw a disconnected segment, click this icon and drag in the graph.

F With the pencil (E) selected, click to smooth the curve.



To adjust brightness curves

1 Select one paint object to adjust. The paint object can be in edit mode. You can select an area in the image. If you don't make a selection, the entire image is affected.

2 Choose Image > Adjust > Curves.

3 In the Channel pop-up menu, select the composite channel or an individual channel to adjust. To adjust multiple channels, select the channels in the Channels palette first.

4 To change the shape of the existing curve, make sure the curve button at the bottom-left is selected.

- Click points that you want to keep the same
- Drag points on the curve that you want to change. Or, enter values in the Input and Output boxes. For example, to keep midtones the same, click the center of the curve, then drag other areas of the curve. To adjust midtones without affecting highlights and shadows, click the quarter and three-quarter points of the curve, and drag the middle.

5 If you draw disjointed segments with the pencil, you can click Smooth to create one continuous curve.

6 Click OK to apply the current settings to the image.

✓ Tip

To redraw the curve completely, or to create sharp changes in brightness for a tonal range, click the pencil and draw a new curve or segment.

Saving and loading Curves dialog box settings

You can save Curves dialog box settings to use again; e.g., after correcting the brightness curve for a particular Photo CD image, you can save these settings and later apply them to other images from the same source.

- **To save Curves settings:** In the Curves dialog box, click Save. In the directory dialog box, type a name for the settings file, select a location, and click Save.
- **To load Curves settings:** In the Curves dialog box, click Load. In the directory dialog box, locate the settings file and click Open.

Hue/Saturation

You can modify the tint and purity of specific colors with the Hue/Saturation command. In terms of image editing, *saturation* refers to the amount of gray in colors.

The Hue/Saturation dialog box varies slightly depending on the color mode. For RGB Color and CMYK Color images, you can modify red, yellow, green, cyan, blue, or magenta color ranges. For LAB mode images, you can modify blue, magenta, yellow, or green color ranges.

The Hue/Saturation command is available when you work with CMYK, RGB, or LAB Color mode images. Before choosing the Hue/Saturation command, make the composite channel active. For more information, see "Activating channels" on page 25.24.

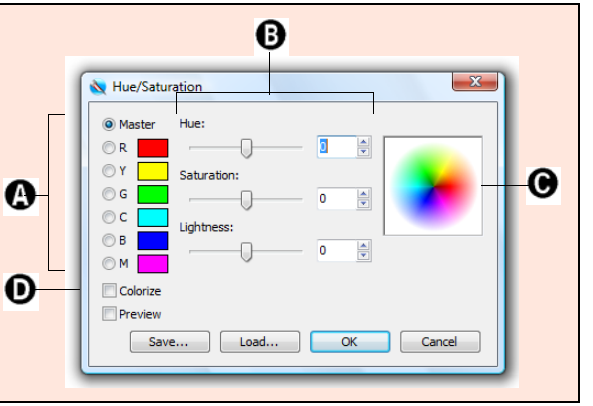
Hue/Saturation dialog box

A Choose the color to adjust. Click Master to affect all colors.

B Enter numbers in the text boxes or drag the sliders to adjust hue, saturation, and lightness.

C The color wheel illustrates changes made in the settings.

D Turn on to add the same hue to the entire image.





Color wheel

To adjust the hue of a color range

1 Select a paint object to adjust. You can select an area in the image to adjust the selected area only.

2 Choose Image > Adjust > Hue/Saturation.

3 On the left of the dialog box, click the color range to adjust, or click Master to affect all colors equally.

4 To change the selected color, enter the amount of the color shift, from -180 to 180°, in the Hue text box. Negative values indicate a counter-clockwise shift around the color wheel; positive values indicate a clockwise shift; e.g., with the Master option selected, setting Hue to 60 changes red to magenta, magenta to blue, blue to cyan, and so on.

5 Click OK to apply the current settings to the image.

To adjust the saturation of a color range

1 Select a paint object to adjust. You can select an area in the image to adjust the selected area only.

2 Choose Image > Adjust > Hue/Saturation.

3 Click the option button of the color you want to adjust, or click the Master option button to affect all colors equally.

4 Enter a value from -100 to 100 in the Saturation text box or drag the slider. Positive values decrease the amount of gray in the selected colors. Negative values increase the amount of gray.

5 Click OK to apply the current settings to the image.

To adjust the brightness of a color range

1 Select a paint object to adjust. You can select an area in the image to adjust the selected area only.

2 Choose Image > Adjust > Hue/Saturation.

3 Choose a specific color range or choose Master to affect all colors equally.

4 Enter a value from -100 to 100 in the Lightness text box or drag the slider. Positive values increase the amount of white in the color range. Negative values decrease the amount of white.

5 Click OK to apply the current settings to the image.

For more control of brightness adjustments, use the Levels or Curves command (see “Levels” on page 24.7 and “Adjusting brightness curves” on page 24.9).

To colorize an image

Use the Colorize option in the Hue/Saturation dialog box to tint an image. This applies the same hue and saturation to all pixels that are not 100% black or white. The Colorize option does not affect the lightness levels of pixels.

1 Select a paint object. You can select an area in the image to adjust only the selection.

2 Choose Image > Adjust > Hue/Saturation.

3 Select the Colorize option.

4 Enter a value from -180° to 180° in the Hue text box. Positive values shift counter-clockwise around the color wheel, negative values shift clockwise around the color wheel. For example, Hue 120 creates a green-toned image.

5 Enter a value in the Saturation text box or drag the slider.

6 After entering the settings you want, click OK.

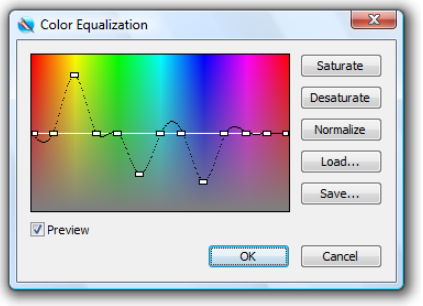
Color Equalization

You can graphically adjust the saturation of different color ranges with the Color Equalization command. You can add or remove gray from various color ranges in images in RGB Color mode, CMYK Color mode, and LAB Color mode.

To use the Color Equalization command

1 Select a paint object to adjust. You can select an area in the image to adjust only the selected area.

2 Choose Image > Adjust > Color Equalization.



3 Drag the handles in the window to change the saturation of color ranges. To increase saturation, drag upward. To decrease saturation, drag downward.

4 Click Saturate to increase the saturation of all colors. To decrease the saturation of all colors, click Desaturate. Click Normalize to return all colors to their original saturation.

5 Click OK to apply the settings.

Blur filters

Blur filters soften images by decreasing contrast between neighboring pixels. These commands work with all image modes except Indexed and Black & White.

Apply the Blur filters by choosing Image > Filter > Blur or by using the Filters menu in the Properties bar.



To use Blur and Blur More

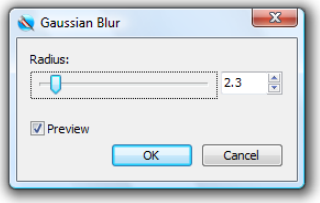
Blur slightly modifies an image. Blur More is about four times stronger than Blur. Both commands work with all image modes except Black & White and Indexed.

1 Select one or more paint objects to blur. You can select an area in one image to blur the selected area only.

2 Choose Image > Filter > Blur > Blur or Blur More.

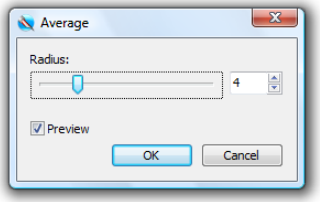
Gaussian and Average blur

Create a softening effect by using the Gaussian Blur or Average blur filters. Their effects are similar, but the Gaussian Blur filter creates a more diffused effect than the Average blur filter.



The Gaussian Blur filter changes the color value of each pixel by applying a weighted average based on the color values of pixels within a specified distance. Color values at the edge of the specified distance influence the final color value less than closer pixels.

The Average filter determines the new color value for each pixel by equally averaging all color values within the specified radius.



To apply Gaussian Blur or Average blur

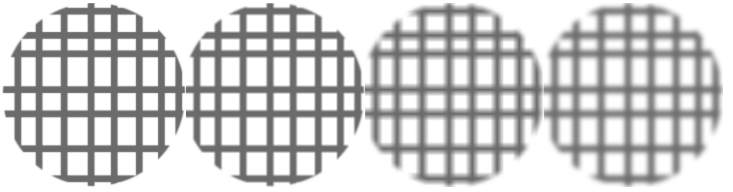
1 Select one or more paint objects to blur. You can select an area in one image to blur the selected area only.

2 Choose Image > Filter > Blur > Gaussian Blur or Average.

3 Specify a radius value from 0.1 to 250.0 in the Gaussian Blur dialog box, or 1 to 16 in the Average dialog box. Smaller radius values produce more subtle effects than larger ones.

4 Click OK.

Depending on the size of the radius, applying a Gaussian or Average blur can take longer than other Blur filters.



Blur *Blur More* *Average* *Gaussian*

Motion Blur

The Motion Blur filter can create the effect of linear movement. You can specify the direction and magnitude of the effect. This command works with all image modes except Black & White, Indexed, and Duotone.

To apply motion blur

1 Select one or more paint objects to blur. You can select an area in one image to blur the selected area only.

2 Choose Image > Filter > Blur > Motion Blur. Adjust the settings in the Motion Blur dialog box, and then click OK to apply the filter and close the dialog box.



Grayscale paint object



Motion Blur: Direction = -7, Distance = 162, Phase = -63

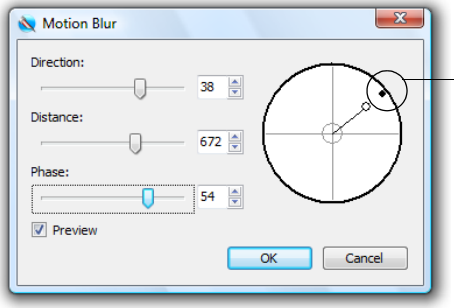
Motion Blur settings

Direction Establishes the angle of the blur and the object "movement." Enter a value from -90 to 90 degrees. You can drag the slider or drag the solid dot inside the circle to set the Direction value. A value of 0 degrees creates a horizontal blur; 90 degrees creates a vertical blur.

Distance The magnitude of the blur. Enter a number from 1 to 999, or drag the slider to set the Distance. A lower number creates less blurring.

Phase Establishes the apparent direction of movement by creating a blurred trail that follows the object. Enter a number from -100 to 100 or drag the slider to set the Phase. Negative numbers create apparent movement up and to the right. Positive numbers create apparent movement down and to the left.

Preview Displays the effect of the current settings.



Radial Blur

The Radial Blur filter can create the effect of circular movement in an image. This command works with all image modes except Black & White, Indexed, and Duotone.

To apply radial blur

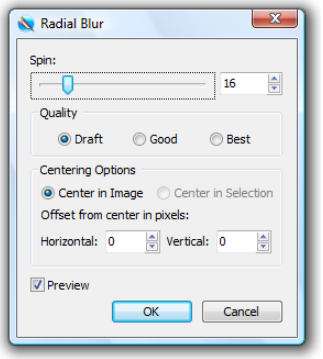
1 Select one or more paint objects to blur. You can select an area in one image to blur the selected area only.

2 Choose Image > Filter > Blur > Radial Blur. Adjust the settings in the dialog box, and then click OK to apply the filter.

Radial Blur



Original *Spin 5* *Spin 20* *Spin 50*



Radial Blur settings

Spin Controls the magnitude of the apparent rotation in the image. Type a number from 1 to 100 or drag the slider to set the value. Or, drag the solid area inside the circle. Drag clockwise to simulate slower rotation; drag counterclockwise to simulate faster rotation and produce more blurring.

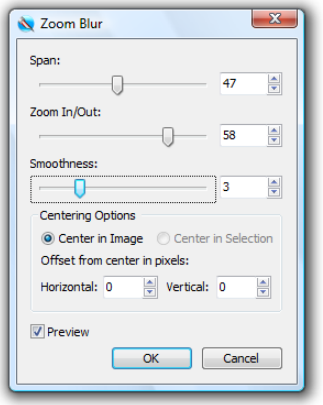
Quality Higher quality creates a smoother image but takes more time. The quality differences become more pronounced when the image is enlarged or printed on standard size paper.

Select Draft for the fastest redraw. Select Good for average redraw speed and quality. Select Best when image quality is most important.

Centering options These options let you set the rotation origin. Center In Image sets the origin at the center of the image. Center in Selection sets the origin at the center of a selection. "Offset from Center in Pixels" lets you type values to offset the origin from the center of the image or selection. Type vertical and horizontal offset amounts in pixels in the text boxes. Negative horizontal offsets move the center to the left. Negative vertical offsets move the center up. Positive horizontal offsets move the center to the right. Positive vertical offsets move the center down.

Preview Displays the effect of the current settings.

Zoom Blur



The Zoom Blur filter can create the effect of movement in an image, as if the scene were moving rapidly toward or away from the observer. The filter blurs along an axis perpendicular to the image. You can specify the depth, direction, and smoothness of the blur effect. This command works with all image modes except Black & White, Indexed, and Duotone.

To apply zoom blur

1 Select one or more paint objects to blur. You can select an area in one image to blur the selected area only.

2 Choose Image > Filter > Blur > Zoom Blur. Adjust the settings in the dialog box, and then click OK to apply the filter.

Zoom Blur settings

Span Sets the depth, (length) of the zoom effect. Type a number from 1 to 100 or drag the slider to set the value. A larger number simulates a greater zoom depth and a more blurred effect.

Zoom In/Out Establishes the direction of the blur effect toward or away from the viewer. Type a number from -100 to 100 or drag the slider to set the value. Negative numbers make the image appear to move closer; positive numbers make the image appear to move away.

Smoothness Controls the quality of the transition of the blur effect. Type a number from 1 to 10 or drag the slider to set the value. A smaller number creates a smoother blur with fine color blending.

Centering options These options let you set the zoom origin. Center In Image sets the origin at the center of the image. Center in Selection sets the origin at the center of a selection. "Offset from Center in Pixels" lets you type values to offset the origin from the center of the image or selection. Type vertical and horizontal offset amounts in pixels in the text boxes. Negative horizontal offsets move the center to the left. Negative vertical offsets move the center up. Positive horizontal offsets move the center to the right. Positive vertical offsets move the center down.

Preview Displays the effect of the current settings.

Zoom Blur applied to area selected around center

Span: 15
Zoom In/Out: 25
Smoothness: 5



Sharpen filters

✓ Tip
Although the Sharpen and Blur filters have opposite effects, they do not negate each other. To reverse the effects of a Sharpen filter, choose Edit > Undo.

Sharpen filters increase the contrast between adjacent pixels, which can make an image appear more distinct. These commands work with all image modes except Black & White, Indexed, and Duotone.

Sharpen filter modifies an image slightly. The effect of the Sharpen More filter is about four times greater.

Sharpen Edges filter affects only high-contrast areas.

Unsharp Mask filter provides additional control over the sharpening effect.

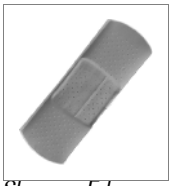
To sharpen an image

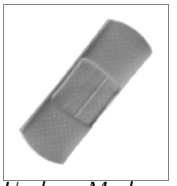
1 Select one or more paint objects to sharpen. You can select an area in one image to sharpen the selected area only.

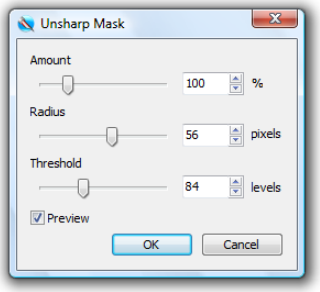
2 Choose Image > Filter > Sharpen, and then choose a filter.


Original


Sharpen More applied 5 times


Sharpen Edges applied 8 times


Unsharp Mask Amount = 113 Radius = 4.5 Threshold = 0



To apply the Unsharp Mask filter

1 Select one or more paint objects to sharpen. Select an area in an image to sharpen the selected area only.

2 Choose Image > Filter > Sharpen > Unsharp Mask.

3 Enter 1 to 500% for Amount. Enter less than 100 percent to sharpen the image slightly.

4 Enter 0.1 to 250 pixels for Radius. This is the size of the area used to determine new color values for the original pixels. Smaller values focus the sharpening effect on high-contrast edges.

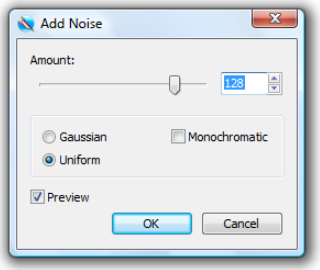
5 Enter 0 to 255 levels for Threshold. Enter 0 to filter all pixels. Enter a larger value to filter only high-contrast edges.

6 Click OK to apply the filter.

Adding and removing noise

In images, “noise” refers to randomly-colored pixels. Noise can be good or bad; e.g., you can apply noise to computer-generated graphics to make them appear more photographic. You can also use a filter that removes noise to minimize the appearance of tiny scratches or other artifacts present in the source material or introduced during digitizing. Noise commands work with all image modes except Black & White and Indexed.

To add noise to selections



1 Select one or more paint objects to adjust. Select an area in one image to adjust the selected area only.

2 Choose Image > Filter > Noise > Add Noise.

3 Enter 1 to 999 for Amount to specify how far the color of the noise can vary from the original color.

4 Choose the Uniform or Gaussian distribution option:

Uniform To apply colors randomly picked within the Amount specified. Canvas evenly distributes the color of the noise across a range of colors. This option gives the smoothest effect.

Gaussian If you want the noise to favor lighter and darker colors within the specified range. This option creates a more pronounced effect than Uniform.

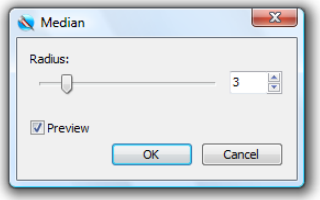
5 Select Monochromatic if you want to add noise of different brightness levels of the original color.

6 Click OK to apply the noise settings.

Removing noise from selections

You can remove noise from an image or selection using the Median, Despeckle, or Dust & Scratches filters. The Median filter removes noise by averaging the color of pixels. The Despeckle and Dust & Scratches filters remove noise by selectively blurring regions of the selection.

To use the Median filter



On a pixel-by-pixel basis, the Median filter applies the median color value of all pixels within the specified radius. Although the filter ignores extreme values in its computations, higher radius values can still wash out an image.

1 Select one or more paint objects to adjust. You can select an area in one image to adjust the selected area only.

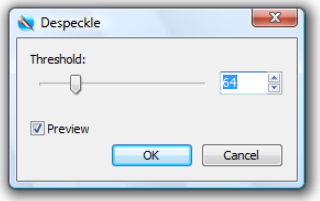
2 Choose Image > Filter > Noise > Median.

3 Type a value from 1 to 16 in the Radius text box, or drag the slider. Smaller radius values produce subtler effects.

4 Click OK.

To use the Despeckle filter

The Despeckle filter can remove defects such as dust and other speckling in images. The filter blends pixels with the lightness values of neighboring pixels. It's a good idea to select areas that need correction before applying the filter.

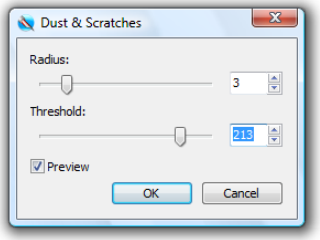


1 Select an area in an image to adjust. If you don't make a selection, the entire image is affected.

2 Choose Image > Filter > Noise > Despeckle.

3 Drag the slider or type a number in the text box to set the Threshold value. Higher values produce greater blending of pixels.

To reduce dust and scratch marks



The Dust and Scratches filter can remove dust specks by replacing a pixel's value with a median value. The filter does not change a pixel's value unless the absolute value of the difference of its gray value and the median gray value of its neighborhood is greater than the Threshold. Larger numbers of pixels are replaced by the median value when the Threshold is low.The practical effect of this is that larger pixels regions (larger "specks") are reduced or removed with a lower Threshold. Therefore, you can use the Threshold to control the size of the artifacts you want to remove.

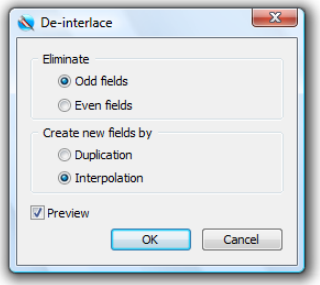
1 Select an area to adjust in an image. If you don't make a selection, the entire object is affected.

2 Choose Image > Filter > Noise > Dust & Scratches.

3 Enter a value from 1 to 16 in the Radius text box. Smaller radius values produce a subtler effect than larger ones.

4 Type a value from 0 to 255 in the Threshold text box. After entering the settings you want, click OK.

Smoothing video images



Because video images contain two interlaced pictures, you can sometimes see a slight banding effect in images acquired from video-recording devices. You can correct this by using the De-Interlace filter and then applying the Unsharp Mask filter. De-Interlace works with all image modes except Black & White.

To smooth video images

1 Select one or more paint objects to adjust. You can select an area in one image to de-interlace the selected area only.

2 Choose Image > Filter > Video > De-Interlace.

3 Click Odd fields or Even fields to select bands to eliminate.

4 Choose a replacement method for the eliminated pixels:

Duplication To fill the area by inserting a copy of an adjacent band.

Interpolation To fill the area by inserting intermediate color values based on the color values of neighboring pixels. This option creates a smoother, more accurate fill than Duplication.

5 After entering the settings you want, click OK.

CHAPTER 25

SELECTIONS & CHANNELS

Canvas gives you several ways to select pixels in an image. When you select groups of pixels by area or color, you can use painting tools, filters, and special effects to modify the selected pixels without affecting the parts of the image that are not selected.

This chapter describes how to make selections in images, save selections in alpha channels, work with color and alpha channels, and create channel masks, which can make parts of images transparent.

Selecting pixels in images



A dashed border outlines the selected area in a photograph

When a paint object is in edit mode, any filters, commands, and painting tools that you apply can affect the entire image. When you have selected pixels in the image, the effect of a tool, filter, or other adjustment is confined to the selected pixels.

You can select areas in an image using painting tools or menu commands. For example, you can make rectangular selections by dragging the Marquee tool in an image, and you can use the Color Range command to select groups of pixels based on color similarity.

Selection borders

The selected pixels in an image are referred to collectively as a selection. When you make a selection, Canvas surrounds the selected pixels with a moving dashed border. You can hide and display the border without affecting the selection. To hide the border, choose Image > Select > Hide Edges. To display the selection border, choose Image > Select > Show Edges.

Deselecting an image selection

When you use a selection tool in normal mode, making a new selection replaces any existing selection in an image. To deselect pixels without making a new selection, choose Image > Select > None. You can also press Esc to deselect a selection. If a selection is floating, pressing Esc once defloats the selection; pressing Esc again deselects all pixels.

Selecting all pixels in an image

You can apply painting tools and filters to an entire image without first making a selection. But you can also select all the pixels in an image when you want to work with them as a selection.

- **To select all pixels, with a paint object in edit mode:** Choose Image > Select > All. A selection border appears around the entire image.

Using pixel selection tools

Use the Marquee, Oval Marquee, Row Selection, Column Selection, and Lasso tools to select areas in images.



A Marquee
B Oval Marquee
C Row Selection
D Column Selection

The Marquee tool selects rectangular areas. The Oval Marquee tool selects oval areas. The Column Selection tool selects a single vertical column of pixels. The Row Selection tool selects a single horizontal row of pixels. The Lasso tools selects odd-shaped areas.

The Marquee, Oval Marquee, Row Selection, and Column Selection tools are located in a tool palette within the Painting tool palette. The Lasso tools are separate icons in the Painting tool palette.

These selection tools let you select any part of an image, from one pixel to all the pixels in the image. By using modifier keys with these tools, you can add to and subtract from selections, and select the overlapping area of two selections.

By subtracting a circle from a larger circle, for example, you can make a ring-shaped selection with an unselected area inside. See "Modifying selections," page 25.13.

To select rectangular or oval areas

1 Place the paint object into edit mode.

2 Select the Marquee tool or the Oval Marquee tool.

3 Drag diagonally in the image; a selection rectangle or oval expands as you drag away from the starting point. When you release the mouse button, a dashed border outlines the selected area.

- **To make a square selection:** If no selection exists, press Shift and drag the Marquee tool in an image. If a selection exists in the image, pressing Shift adds to the selection.

- **To make a circular selection:** If no selection exists, press Shift and drag the Oval Marquee tool in an image. If a selection exists in the image, pressing Shift adds to the selection.
- **To expand a selection marquee from the center:** If no selection exists, press Ctrl and drag the Marquee or Oval Marquee tool. You can press Ctrl+Shift to constrain the selection marquee and expand it from the center.

To select single rows or columns

1 Select the Row Selection tool or the Column Selection tool. If the paint object isn't in edit mode, click it.

2 Click a single pixel to select all pixels in the same row or column in the image. A dashed border outlines the selected row or column. Or, press and hold the mouse button to see a selection outline, and move the pointer to position the selection outline. Release the mouse button to set the selection, and a dashed border outlines the selected row or column.

When working in high-resolution images, you can zoom to 400% magnification or higher to see the pixels you want to select.

To select areas with the Lasso tools

Lasso tools



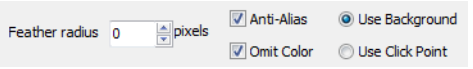
1 Place the paint object into edit mode.

2 Select either Lasso tool.

3 Drag in the image to outline a selection. Canvas connects the starting and ending points with a straight line. A dashed border outlines the selected areas.

Lasso options

To set options before using the Lasso tools, use the settings in the Properties bar.



Feather Radius To soften the edge of selections made with the Lasso tool, enter the feather range in pixels in the Feather Radius box.

Anti-Aliased To slightly soften the edge of selection made with the Lasso tool, select the Anti-Aliased checkbox.

Omit Color To keep pixels that match the current background color from being selected by the Lasso tool, select the Omit Color checkbox and then choose **Background Color**. Select **Click Point** to omit the color where you first click with the Lasso tool.

Modifying selections

After you make a selection using any selection technique, you can use modifier keys to alter the selection with the Marquee, Oval Marquee, Row Selection, Column Selection, and Lasso tools.

- **To add to a selection:** Press Shift when you use a selection tool. A "+" symbol indicates that the tool will add the new selection to the existing selection.

- **To subtract from a selection:** Press Ctrl when you use a selection tool. A "-" symbol indicates that the tool will subtract the new selection from the existing selection.

- **To select part of a selection:** Press Shift+Ctrl when you use a selection tool. An "x" symbol indicates that the area you select in the existing selection will remain selected. If none of the new selection is part of the existing selection, Canvas deselects all pixels.

You can also use Shift or Ctrl to constrain a selection when you add, subtract, or intersect a selection. To do this, press the keys to add, subtract, or intersect and begin dragging. While still pressing the mouse button, release the keys and then press the constraint keys and continue dragging.

Selecting areas based on color

You can use the Wand tool and the Color Range command to select pixels in an image according to color.

- **To select a contiguous area of similarly colored pixels:** Use the Wand tool.

- **To select all pixels of a particular color:** Use the Color Range command.

To use the Wand tool



1 Select the Wand tool and point to the object you want to edit. If the paint object is not in edit mode, the pointer becomes a hand ( ). Click the object to put the image in edit mode. The pointer becomes a wand.

2 Click the color area you want to select.

- **To add to a selection:** Shift-click the Wand in the image. The pointer displays a '+' to show that it adds to the current selection.

- **To subtract from a selection:** Ctrl-click the Wand in the image. The pointer displays a wand with a '-' to show that it subtracts from the current selection.

- **To inverse a selection:** Choose Image > Select > Inverse or Edit > Invert Selection.

To adjust the tolerance of the Wand tool

You can broaden or narrow the range of colors the Wand tool selects by adjusting its tolerance; e.g., a tolerance of zero selects pixels that exactly match the color of the pixel you click.

- **To configure the Wand tool:** Use the settings in the Properties bar. In the Tolerance field, enter a tolerance value from zero to 255. The Select throughout image option lets you select the chosen color in the entire image. To smooth the edges of the selection, turn on the Anti-Aliased option.

Selecting a color range

You can use the Color Range command to select all areas of similar color in an image. The command creates a grayscale selection mask similar to an alpha channel.

You can use the Load and Save buttons in the dialog box to work with color range selection files. The file format that Canvas uses for these files is compatible with Photoshop Color Range files. On Windows, these files use the extension AXT.

To select a color range interactively

1 With a paint object in edit mode, choose Image > Select > Color Range.

2 In the Color Range dialog box, choose Sampled Colors in the Select menu.

3 Adjust the Fuzziness setting. To select pixels of exactly the same color, set the Fuzziness to zero. Increase the Fuzziness to widen the range of colors to be selected.

4 Click a color in the preview image in the dialog box. Canvas selects a range of similarly colored pixels, depending on the Fuzziness setting.

- To add colors to the selection, click the '+' dropper icon, then click a color in the image in the dialog box.
- To subtract colors from the selection, click the '-' dropper icon, then click in the image in the dialog box.

5 To view the selected pixels, click the Selection option. Gray areas indicate pixels that the Color Range command selects at a reduced opacity. Filters and painting tools affect these areas to a lesser degree than areas that are 100 percent selected. Click OK to apply the selection to the image.

Color Range options

Use this dialog box to select image areas based on color.

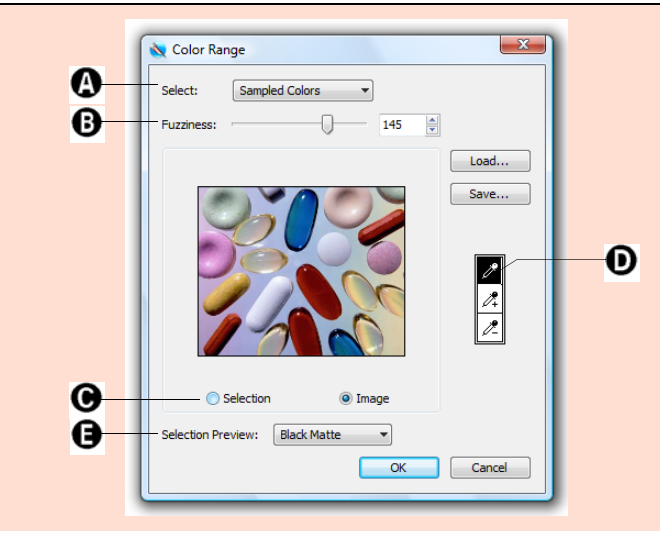
A Select. In the menu, choose the color (red, green, blue, cyan, magenta, yellow), or tonal range (shadows, midtones, highlights) you want to select.

To select a color interactively by clicking in the preview window, choose Sampled Colors.

B Fuzziness. When using the Sampled Colors option, enter a low value to select a narrow color range; enter a higher value to select a wider range.

C Choose Selection to preview the selection, with white representing selected pixels, in the preview window. Choose Image to see the actual image so you can sample colors with the dropper.

D With Sampled Colors chosen (**A**), click the dropper in the preview window to select colors. Use the '+' dropper to add to the selection; use the '-' dropper to subtract from it.



E Selection Preview. Choose an option to preview the selection in the image itself (or choose None for no preview). Grayscale shows the selection as it would appear in a channel, with white for selected pixels and black showing non-selected areas.

The Matte and Mask options show the original colors in selected areas. In non-selected areas, Black Matte shows black, White matte shows white, and Mask shows transparent red.

Selecting unselected areas

Use the Inverse command to simultaneously select all pixels not in the current selection while deselecting the current selection.

- **To select areas not included in the current selection:**

Choose Image > Select > Inverse.

A moving dashed edge surrounds the background, a selected area





When the selection is inversed, the cup and its contents are selected

Expanding selections with Grow and Similar

The Grow and Similar commands let you expand selections to include similar colors in an image. These commands compare the colors outside a selection to the colors in the selection. Colors that are in a specified range of similar colors are added to the selection.

The Grow command selects similar colors that are adjacent to the current selection. The Similar command selects similar colors throughout the image.

Note: The Grow and Similar commands are available for all image modes except Black & White.

✓ Tip
The range of colors selected by Grow and Similar is based on the Tolerance setting in the Wand dialog box (see "To adjust the tolerance of the Wand tool," page 25.5).

To use the Grow command

1 Ensure the image is in image edit mode.

2 Select the Wand tool and click it on the area that you want to select ("To use the Wand tool," page 25.4).

3 Choose Image > Select > Grow and similar colors that are adjacent to the current selection will be selected.

✓ Tip
To select similar colors throughout an image, you can also use the Select throughout image checkbox in the Wand dialog box (see "To adjust the tolerance of the Wand tool," page 25.5

To use the Similar command

1 Ensure the image is in image edit mode.

2 Select the Wand tool and click it on the area that you want to select (see "To use the Wand tool," page 25.4).

3 Choose Image > Select > Similar and similar colors throughout the image will be selected.



Original image



Image after tapping Magic Wand on the indicated area and choosing Image > Select > Grow



Image after choosing Image > Select > Similar.

You can repeat the Grow and Similar commands to continue expanding a selection. As more colors are added to the selection, more colors are in the range of colors similar to the selection. Therefore, even though the Tolerance doesn't change, repeating Grow or Similar can expand a selection incrementally.

Grow and Similar can help you isolate elements in an image, such as dark objects against a light background. Select part of one dark object with the Marquee tool. Choose Grow to expand the selection to the entire object. Choose Similar to expand the selection to all similar colors in the image.

Converting paths to selections

You can use vector objects and text to make selections in images. The Path to Selection command makes a selection in an image from the shape of a vector, text, or group object.

With this command, you can outline irregular areas in images with drawing tools to make selections. You can make selections shaped like starbursts and other complex shapes that are easy to create with drawing tools. You can make selections from text characters without first converting the text to paths.

The area selected by a vector or text object depends on whether the object has a visible fill ink and stroke.

- A filled object will select the area covered by the fill. If the object also has a visible stroke, the selection will include the area covered by the stroke.
- An unfilled object will select the area covered by just the stroke of the object.

- An object without a visible fill or stroke will not select anything.

The type of fill ink or pen ink applied to an object is not significant for the selection it will make. However, the shape of the stroke is significant. A visible pen, dash, parallel, or neon stroke will affect the shape of the resulting selection. Also, the end caps, line joins, and arrows applied to a stroke will affect the selection.

To convert a path to a selection

1 Draw or position a vector or text object on a paint object where you want to make a selection.

Note: If you want to preserve the vector or text object, make a copy of it; the object will be deleted when it is converted to a selection.

2 Select both the vector object and the paint object.

3 Choose Image > Path to Selection.

4 The vector or text object is replaced by a selection. The paint object is in edit mode and the selection is outlined by a dashed border.

Converting objects to paths

Most objects drawn with vector tools are paths that can be used to create selections in images. However, some objects must be converted to paths first.

If an object does not create a selection when you choose Path to Selection, you might need to convert the object to a path by selecting the object and choosing Object > Path > Convert to Paths.

Working with image selections

After you make a selection, you can clear it, soften its edges, make it floating, move it, and change its opacity.

Clearing and copying a selection

✓ Tip
If you want Canvas to recall a selection, be sure to save it before leaving edit mode. See "Saving and loading selections in channels" on page 25.17.

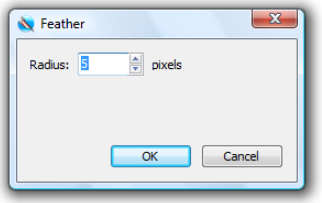
You can replace the pixels in a selection with the current background color by pressing the Delete key, or by choosing Edit > Cut. (The Cut command also transfers the selection to the Clipboard.) Canvas replaces the selected pixels with the color currently displayed in the background color icon. Keep in mind that "deleting" a selection doesn't leave a hole or transparent area in the paint

object, unless the paint object has a visibility mask, as described later in this chapter.

To place a copy of a selection on the Clipboard without clearing the area in the original image, choose Edit > Copy. When a selection has been placed on the Clipboard, you can paste it into another paint object in edit mode, where it will become a floating selection, or paste it into the document to create a new paint object.

Feathering the edges of a selection

You can feather (soften) the edges of a selection so that it blends more naturally into the original image. Use the Feather command to soften the hard edge of a selection and spread the selection over a larger area.



1 With a paint object in edit mode, make a selection and choose Image > Select > Feather.

2 In the Feather dialog box, enter the number of pixels to feather the selection in the Radius text box. The larger the Radius value, the more Canvas softens the selection edge.

3 Click OK to feather the selection.

Pasting into selections

The Paste Into command pastes the Clipboard contents into a selection in an image. This includes a selection in an image channel or a channel mask attached to an object.

The Paste Into command pastes anything that you copy to the Clipboard, including a vector, text, or paint object, an image selection, or a segment of a vector object.

You can use Paste Into to composite images and create effects that would otherwise be difficult to produce. For example, to simulate a picture on a television screen in a photograph, you can select the screen area and paste an image into the selection. You can move the pasted image within the selection to adjust the area that you see.

You can paste transparent objects into opaque images, or opaque objects into transparent images. The background of the image determines the opacity of the pasted selection.

To paste into a selection

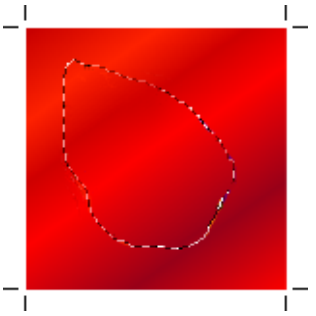
1 Place an object or selection on the Clipboard by choosing Edit > Copy or Edit > Cut.

2 Make a selection in an image (or a channel mask), and choose Edit > Paste Into. The Clipboard contents appear in the selection.

3 You can drag the pasted item or press the arrow keys on the keyboard to move it, to display the areas you want to see. When you finish adjusting the selection, deselect it to merge it into the image.



Object with a symbol fill ink



Feathered selection



Object pasted into selection

Floating and moving selections

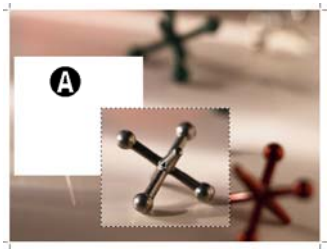
✓ **Tip**
To float a selection and fill behind it with the background color, hold down Alt and choose Image > Select > Float.

You can move and manipulate a selection without affecting the original image by making it a floating selection.

When a selection is floating, it sits on an invisible plane above the original image. When you type text in an image, or paste an object from the Clipboard, Canvas makes the text or pasted item a floating selection.

Moving a selection that is part of the original image creates a floating selection, but also leaves behind an area filled with the background color.

- **To float a copy of a selection:** Make a selection in an image and choose Image > Select > Float.



Dragging a selection floats it and leaves an area filled with the current background color (A).

Remote Move tool 

Deselecting and defloating selections

Deselecting a floating selection makes it part of the original image. To deselect a floating selection, press Esc twice or choose Image > Select > None.

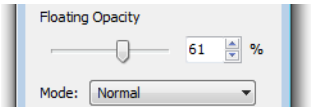
- **To make the floating selection part of the image but still retain the selection:** Press Esc or choose Image > Select > Defloat.

Moving selections

To move a selection, you can press the keyboard arrow keys or drag the selection with the Marquee, Lasso, or Wand tools. If a selection is not floating, it becomes floating when you move it.

To keep the pointer from interfering with your view of a small selection, select the Remote Move tool in the Painting tool palette and drag it anywhere in the drawing area. Canvas moves the selection in the direction you move the pointer.

Changing the opacity of floating selections



Floating Opacity slider in the Channels palette

You can change the opacity of a floating selection and make the pixels behind it partially visible. You can also change the mode to produce different effects.

Note: You cannot make selections partially transparent in Indexed or Black & White image modes.

1 With a paint object in edit mode, select part of the image.

2 Click on the Background color icon in the Toolbox and select a color to use behind the floating selection. This color will start to appear when you make the selection transparent.

- **To use the Floating Opacity slider in the Channels palette to lighten a floating selection:** Fill behind the selection with white or a light color.

3 Hold down the Ctrl key and choose Image > Select > Float. Canvas floats the selection and fills behind it with the background color.

4 Choose Image > Show Channels to open the Channels palette. Set the Floating Opacity value to less than 100 percent to make the selection become transparent and reveal the background color behind the selection.

5 To change the mode, choose a new mode from the Mode menu.

Modifying selections

You can use the Expand, Contract, Smooth, and Border commands to modify selections in images.

These commands make it easy to fine-tune a selection by expanding or contracting the selection border by a specified number of pixels, or by adding or subtracting pixels based on color.

Expanding a selection

You can expand a selection by adding a specified number of pixels to the selection border.

- **To modify an active selection:** Choose Image > Select > Modify > Expand. Type a value in the Radius text box and click OK. Canvas adds the specified area to the selection.

Contracting a selection

You can shrink a selection by subtracting a specified number of pixels from the selection border.

- **To modify an active selection:** Choose Image > Select > Modify > Contract. Type a value in the text box and then click OK. Canvas subtracts the specified area from the selection and the dashed border contracts.

Smoothing a selection

The Smooth command is useful after you have made a color-based selection that has left stray pixels inside or outside of the selected area. The Smooth command includes or eliminates the stray pixels to even out the selection. The value you type in the text box determines which pixels will be included or excluded in the selection at the border.

- **To modify an active selection:** Choose Image > Select > Modify > Smooth. Type a value in the text box and then click OK. Canvas adds or subtracts pixels to the perimeter of the selection based on the radius number of pixels you specified.

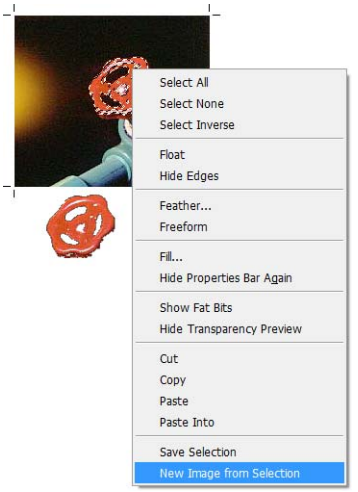
Bordering a selection

After you define a selection, you can select the area at the border of the selection by specifying an offset in pixels from the selection edge.

- **To modify an active selection:** Choose Image > Select > Modify > Border. Type a value in the text box and click OK. Two dashed borders indicate the selected border.

Once you make a selection, you can use the Grow command or the Similar command to expand the selection to include similar colors.

Creating objects from selections



You can make new paint objects from image selections with the New Image from Selection command. This command converts a selection in an image into a new paint object in the same position on the image you are editing. This can be useful for "layering" image compositions.

The result of New Image from Selection is similar to moving a selection to a transparent "layer," a procedure used in some image editing programs. In Canvas you can use separate transparent paint objects to create "layered" image compositions.

Note: This operation doesn't affect the Clipboard contents.

- **To create a paint object from a selection:** With a selection in an image, choose New Image from Selection in the context menu. To display the context menu, right-click within the selection.

New images from selections and floating selections

When you choose New Image from Selection, Canvas removes the selection from the image or deselects the selection in the image. The selection appears as a new paint object in the same location.

Whether a selection is removed from an image depends on whether the selection is floating. The opacity of the resulting object also differs for floating and non-floating selections.

If a selection is not floating, Canvas deselects it but otherwise doesn't change the original image when you create an object from the selection. The selected pixels keep their original opacity in the new object.

If a selection is floating, Canvas removes the selection. The effect is the same as deleting a selection: the background color replaces the

selected pixels, or, if the object has a visibility mask, a clear background replaces the selected pixels. In the new object, the pixels are opaque, regardless of their original opacity.

Clear backgrounds in new paint objects

A paint object created from a selection always has a clear, rather than opaque background, and a visibility mask.

Paint objects are rectangular. If a selection is not rectangular, Canvas places the selection on a clear background. This is why creating a paint object from a selection is like transferring the selection to a clear overlay on the original image.

If you select Preserve Visibility in the Channels palette, a visibility mask preserves the transparency of all pixels in the image. You can paint or use filters without affecting clear areas.

If Preserve Visibility is not selected, you can erase to a clear background and affect all pixels by painting and editing.

Converting selections to paths

Canvas can trace a selection in an image to create a path (vector object) from the selection border. The Selection to Path command traces the active image selection border using the settings you specify. This is useful if you want to convert a selection border to a vector object that can be used as a clipping path, for example.

The accuracy of a path made from a selection depends on the settings you specify and the complexity of the selection border. A very complex selection border can result in a path with hundreds of anchor points, which can cause problems in printing and other operations.

Paths created from selections have no fill ink, black pen ink, and the current stroke setting.

To convert a selection to a path

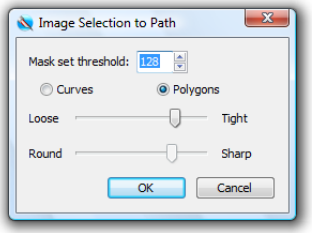
1 Make a selection in an image.

2 Choose Image > Selection to Path.

3 Choose the settings you want and click OK (see “Selection to Path options,” page 25.16). The selection in the image is deselected and a new vector object (or group of vector objects) appears in front of the paint object.

Selection to Path options

A dialog box presents the following options when you use the Selection to Path command.



Mask Set Threshold If a selection edge is feathered, this value defines the edge of the selection for tracing based on selection mask opacity. Enter a value from 1 (nearly transparent) to 255 (opaque). These values correspond to the lightness of pixels for a selection saved as a mask in a channel.

Pixels in the selection mask that are more opaque (lighter) than the threshold value are treated as opaque and part of the selection. Pixels that are less opaque (darker) than the threshold value are treated as transparent and outside the selection. At a threshold of 1, the entire feathered edge will be part of the selection. At 255, only the completely opaque part of the selection will be included.

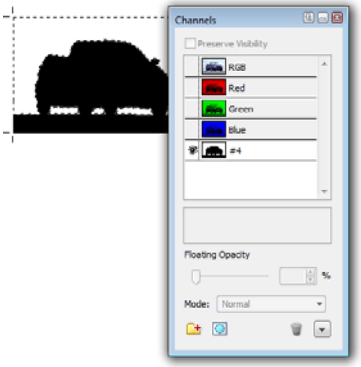
If a selection is not feathered, this value has no effect.

Curves / Polygons Choose Curves to create paths with smooth anchor points and curve segments as appropriate. Choose Polygons to create paths with straight segments only. The Curves option can result in smoother paths with fewer anchor points when the selection border has curves.

Loose /Tight Drag the slider to set the tolerance for tracing irregularities in the selection border. Loose follows the selection border less precisely (more smoothly) and creates fewer anchor points. Tight follows the selection border more precisely (less smoothly) and creates more anchor points.

Round /Sharp Drag the slider to set the tolerance for tracing corners in the selection border. Round creates rounder corners, Sharp creates sharper corners.

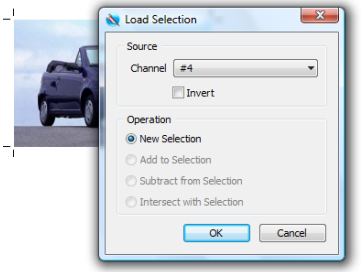
Saving and loading selections in channels



When you have made a selection in an image, you can create an alpha channel from the selection. An alpha channel preserves the shape and opacity of a selection, so you can use it to make the same selection in the image again.

You can think of an alpha channel as a mask that selects some areas and protects other areas from painting and image editing. Because alpha channels make precise selections of varying intensities, alpha channels let you control which areas in an image will be affected by painting tools and filters, and the intensity of the effects.

When you view an alpha channel, you see a grayscale image. When the channel is made from a selection, it contains white areas representing fully selected pixels, black areas representing unselected pixels, and gray areas representing pixels that are partially selected, with the gray lightness values corresponding to the selection opacity.



This section describes how to save a selection in a channel, and how to load a channel to make a selection in an image, using dialog boxes. You can also use shortcuts in the Channels palette, as described under “Channels palette options” on page 25.21.



To save a selection in a channel

1 With an active selection in an image, choose Image > Select > Save.

2 In the Operation area of the Save Selection dialog box, select New Channel and click OK.

You can also click the Selection button in the Channels palette to save the current selection in a new channel.

To load a selection from a channel

1 With a paint object in edit mode, choose Image > Select > Load.

2 In the Load Selection dialog box, choose a channel name in the Channel pop-up menu. To invert the selection, click Invert.

3 Choose an option in the Operation area and click OK.

Option	Result
New Selection	Removes any current selections and creates a new selection
Add to Selection	Preserves the current selection and selects additional pixels based on the channel
Subtract from Selection	Removes pixels from the current selection based on the channel
Intersect with Selection	Creates a new selection composed of pixels that appear in both the current selection and the channel you are loading

Preserving channels in exported images

Canvas image channels are compatible with the alpha channels used in other image-editing programs, including Adobe Photoshop. However, you must use the correct procedure to preserve alpha channels when you export an image into Photoshop format.

If you want to export an image into Photoshop format and preserve the image's alpha channels, be sure to choose Image > Export, rather than the Save As command.

If you use the Save As command and choose Photoshop format, the resulting file will not contain the alpha channels associated with the image.

To export an image with alpha channels

1 Select the paint object in the Canvas document.

2 Choose Image > Export > Photoshop. A directory dialog box appears.

3 Specify a location to save the file, type a file name, and click Save to export the selected image as a Photoshop file.

Understanding image channels

Canvas uses up to 24 channels to store the digital information that makes up the image in a paint object.

There are three types of channels: color or image channels, alpha channels, and channel masks. All images have at least one channel.

An image can also contain one or more alpha channels and a single channel mask, if you create them.

The Channels palette displays the channels of an image. Whenever an image is in edit mode, you can use the Channels palette to select and edit channels.

- **To display the Channels palette:** Choose Image > Show Channels.

Vector objects and text objects do not have color or image channels. However, you can create a channel mask for any object. If an object has a channel mask, you can place the channel mask in edit mode, and use the Channels palette to work with the channel mask and create alpha channels. Alpha channels are stored with an object as long as the object has a channel mask.

Color channels

Images in RGB Color, CMYK Color, and LAB Color mode have separate color channels. A color channel stores one component of the image; e.g., in CMYK Color mode, the Magenta channel stores the magenta parts of the image. This channel contains the image that would appear on the magenta plate if you output color separations.

A paint object's image mode determines the number of color channels. RGB Color images have Red, Green, and Blue color channels. CMYK Color images have Cyan, Magenta, Yellow, and Black channels. LAB Color images have Lightness, A, and B channels.

In the Channels palette, a composite channel appears above the color channels. The composite channel represents the complete image — the composite of the image's color channels. The composite channel is labeled RGB, CMYK, or LAB, depending on the image mode.

Other image modes do not have separate color channels. Images in Black & White, Duotone, Indexed, and Grayscale mode have a single image channel.

Alpha channels

Alpha channels are channels you can use to store and edit selections in any image. Because alpha channels are used for image selections, they are also referred to as "selection masks."

After you make a selection in an image, you can save the selection in an alpha channel. Later, you can load the channel to make the same selection.

An alpha channel is a grayscale channel that is the same size and resolution as the paint object in which it is stored. Pixels in alpha channels can range in lightness from 0 (black) to 255 (white). The lightness levels of pixels in an alpha channel correspond to a range of selection levels.

Black pixels in an alpha channel correspond to masked, or non-selected, pixels in an image. White pixels correspond to selected pixels. Gray pixels correspond to various levels of selection, with lighter grays corresponding to greater selection than darker grays.

Note: If you want black pixels to correspond to selected, rather than masked pixels, click Selected Area in the New Channel or Channel Options dialog box.

Using the Channels palette

The Channels palette displays the channels contained in a paint object when the paint object is in edit mode. The palette also displays the channels contained in any object that has a channel mask when you edit the mask.

You can use the palette to create, duplicate, and delete channels; to change channel options; and to make selections by loading channels.

- **To open the Channels palette:** Choose Image > Show Channels.

Composite channel Select the first channel in the palette to make all color channels visible and active. Paint objects in CMYK Color, RGB Color, and LAB Color modes have composite channels. The channel is labeled "CMYK" for a CMYK Color image, "RGB" for an RGB Color image, and "LAB" for a LAB Color image.

Paint objects in Indexed, Grayscale, Black & White, and Duotone modes have single channels. A vector object that has a channel mask has an "object channel."

Color channels Color channels appear below the composite channel in the Channels palette. Color channels store the color data in an image. The image mode determines the number of color channels. CMYK Color images have Cyan, Magenta, Yellow, and Black color channels. RGB Color images have Red, Green, and Blue

color channels. LAB Color images have “A” and “B” color channels and a Lightness channel. Multichannel images have numbered channels that contain grayscale pixels only.

Alpha channels Alpha channels contain grayscale pixels which can represent a selection. You can use alpha channels to create channel masks. Any paint object can have alpha channels. However, paint objects in Black & White mode must have a channel mask before they can contain alpha channels.

Channel mask

A special channel you can add to any object, a channel mask contains grayscale pixels that represent transparency. Drag a color or alpha channel to the channel mask slot to create a channel mask. You can drag a channel mask into the channel list to create a new alpha channel.

Viewing previews in the Channels palette

To view previews in the Channels palette, choose Palette Options in the palette’s pop-up menu. Click the size of the preview you want to display, or click None. Click OK to close the dialog box.

Channels palette options

Use the Channels palette to work with channels when a paint object is in edit mode.

Active channels are shaded. Editing affects the active channels only. To make a channel active, click the channel name.

A Composite channel. Select this channel to make all color channels visible and active.

B Color channels. Color channels appear below composite channels.

C Alpha channels. Alpha channels contain grayscale pixels which represent a selection.

D Channel mask. A special channel you can add to any object, a channel mask contains grayscale pixels that represent transparency.

E An eye indicates that a channel is visible. If a channel is not visible, click or drag in the column to make it visible.

F Click to make a new alpha channel with default settings. Drag an alpha channel here to duplicate it.

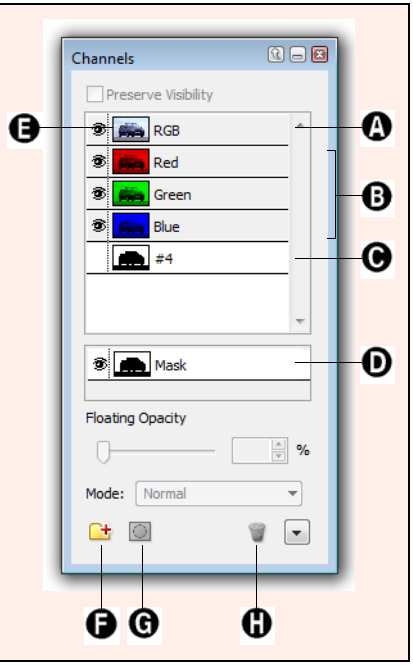
G Click to save the current selection in an alpha channel. Drag a channel here to make a selection in the image from the channel.

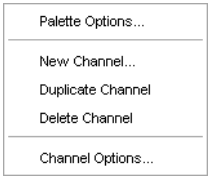
Floating Opacity. If a selection is floating, drag the slider to change the opacity of the selection.

Mode. If a selection is floating, select a mode from the menu. The default mode is Normal.

H Drag channels to the trash to delete them. You cannot delete color channels.

Preserve Visibility. Select this option to preserve the transparency of clear and partially transparent pixels when you edit an image.





Channel palette pop-up menu

The following commands appear in the Channel palette's menu.

Palette Options Lets you select the channel preview size.

New Channel Creates a new alpha channel and lets you select channel options.

Duplicate Channel Creates a new alpha channel from a single active color or alpha channel. This command isn't available if a composite channel or more than one channel is active.

Delete Channel Deletes the active alpha channel. You can't delete color channels or a composite channel.

Channel Options Lets you specify options for the active channel. You can change the name, mask tint color, and opacity of an alpha channel. You also can double-click a channel to set options for it.

Working with alpha channels



To add to the current selection, Shift-drag a channel to the button.

To subtract from the current selection, Ctrl-drag a channel to the button.

To select the intersection of a channel and the current selection, press Ctrl+Shift and drag a channel to the button.



Original image



Alpha channel; white indicates selected area



Alpha channel loaded as selection (in color)



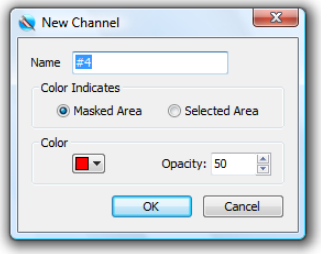
Applied blend affects selected area only

Creating and deleting channels

You can create and delete channels in the Channels palette. Open the Channels palette by choosing Image > Show Channels.

To create an alpha channel

1 With a paint object in edit mode, choose New Channel in the Channels palette menu (see “Channel palette pop-up menu,” page 25.22).



2 In the New Channel dialog box, select options for the new channel and click OK (see “To specify channel options” on page 25.23).

Deleting alpha channels

Although Canvas can store up to 24 channels in an image, you might want to delete unnecessary ones to save memory and disk space. You can delete alpha channels and channel masks, but you cannot delete color channels.

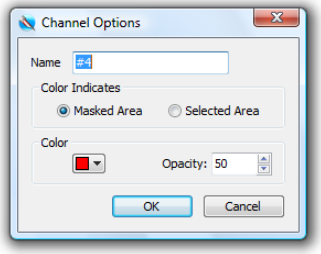
- **To delete an alpha channel:** With an object in image edit mode, drag the alpha channel you want to delete to the trash can icon at the bottom of the Channels palette

Customizing alpha channels

You can change an alpha channel’s name, color indication, and mask tint opacity in the Channel Options dialog box. By default, Canvas numbers alpha channels, sets the mask tint opacity to 50%, and assigns a mask color.

Note: Canvas provides the mask color and opacity settings in the Channel Options dialog box as visual aids only. These settings do not affect the original image or channel.

To specify channel options



1 With a paint object in edit mode, choose Image > Show Channels to open the Channels palette.

2 Click an alpha channel and select Channel Options in the pop-up menu, or double-click the channel you want to edit to open the Channel Options dialog box.

3 Enter a new name in the Name field to rename the channel.

Color Indicates These options control whether white or black pixels in the channel will select pixels in the image when you load the channel.

- If you want white pixels in the channel to indicate selected pixels, choose Masked Area.

- If you choose Selected Area, the normal operation of the channel will be inverted, so that black pixels in the channel will select pixels when the channel is loaded. If you use this option, keep in mind that the channel will make selections that are the inverse of normal channel selections.

- **To change the mask tint color for the channel:** Select a color from the Color pop-up menu. Canvas displays the tint when an alpha channel and at least one other channel are visible.

- **To change the opacity of the tint color:** Enter a value from 1 to 100% in the Opacity text box.

4 Click OK after entering the settings you want.

Activating channels

✓ **Tip**
Painting tools and filters affect active channels only.

To edit a channel, click the channel name in the Channels palette to make it active. Canvas uses shading to indicate that a channel is active.

- You can make more than one channel active by Shift-clicking the names of the channels in the palette.
- To make a channel visible but not active, click the left column to make an eye icon appear.
- You can make more than one channel visible by dragging in the left column in the Channels palette.

To make all color channels in an image both visible and active, click the composite channel in the Channels palette. The composite channel always appears first at the top of the Channels palette.

Editing an alpha channel

You can apply painting tools, filters, and effects to the image in an alpha channel. By editing the image, you can adjust what the channel will select when you load it as a selection.



Canvas displays a shaded mask representing an alpha channel when the alpha channel and the composite channel are visible

1 With an image in edit mode, choose Image > Show Channels.

2 Create a new channel to use as a selection mask by doing one of the following:

- If you have a selection in the image that you want to customize by editing in a channel, use the Save command to create a channel from the selection (see "To save a selection in a channel" on page 25.17).
- To start with a "blank" alpha channel, use the New Channel command. Be sure to choose the Masked Area option under Color Indicates in the New Channel dialog box.

3 In the Channels palette, click the new channel to activate it. The channel appears shaded in the palette and the image changes to show only the channel. Now click in the left column of the first (composite) channel. The original image appears with a transparent colored "mask" on the image. The color mask indicates the areas that will be masked — not selected — by the channel.

4 Use painting tools or filters to edit the image in the channel. The changes you make affect the active channel only.

5 Load the channel by choosing Image > Select > Load to make a selection with the channel.

6 Choose the channel name in the pop-up menu and then click OK.

Channel masks

Channel masks apply transparency effects to objects, including paint objects, vector objects, text objects, and group objects. A channel mask creates transparency in proportion to the luminance of its image.

A channel mask is a grayscale image channel. Black pixels in a channel mask produce 100% transparency in corresponding areas of the masked object. White pixels in a channel mask produce 0% transparency in the masked object. Gray pixels in a channel mask produce partial transparency in the masked object. Darker grays produce greater transparency than lighter grays.

Channel masks are powerful because they let you use painting and image-editing techniques to create transparency effects, and because a channel mask can be applied to any type of object. An object's channel mask is the same size as its bounding box. You can

detach or delete an object's channel mask to eliminate the transparency effect.

Creating channel masks

Use the mouse, New Channel Mask command, Sprite tool, Transparency palette, or Channels palette to make channel masks.

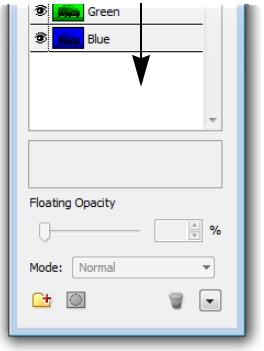
To create a channel mask

Do one of the following:

- Ctrl+double-click the object to be masked.
- Select the object to be masked and choose Object > Transparency > New Channel Mask.
- Click on the object with the Sprite tool.
- Select the object to be masked. In the Transparency palette, choose Channel in the Mask menu.

Canvas creates the channel mask and puts the new mask in edit mode.

- If the object is a paint object, Canvas creates a channel mask with the same resolution as the paint object.
- If the object is a vector, text, or group object, the New Mask dialog box appears. Type the resolution you want for the channel mask and click OK. Canvas creates the channel mask with the specified resolution.



To use the Channels palette

You can create a channel mask for a paint object from an existing alpha channel or color channel.

With a paint object in edit mode, drag an alpha channel into the channel mask slot in the Channels palette. If the slot already contains a channel mask, the channel you drag there replaces the existing channel mask.

Editing channel masks

You can edit an object's channel mask to change the transparency effects it produces. Generally, you can do anything that you can when editing a color channel, alpha channel, or grayscale image: use painting tools, filters, and image-adjustment commands, make selections, and paste selections into a channel mask.

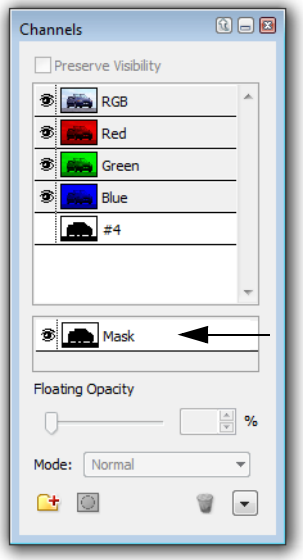
To edit a channel mask

Do any of the following to place a channel mask in edit mode:

- Ctrl+double-click the masked object.
- Select the masked object and choose Object > SpriteLayers > Edit Channel Mask.
- Select the masked object and click Edit in the Transparency palette.

An eye symbol in the Channels palette appears to the left of a channel that is visible. The eye symbol disappears if a channel is hidden.

When you edit a channel mask, the top channel in the palette represents the object itself. For a typical paint object this channel is labeled with the image mode, such as RGB or CMYK. For other objects, the first channel is labeled "Object" (see "Transparency masks," page 34.5).



The channel mask of an object in edit mode is shown in the Channel Mask slot, which is below the channel list.

- **To view the channel mask only:** Click the eye symbol next to the object or composite channel at the top of the channel list. This hides the object channel so only the channel mask is visible.

- **To hide the channel mask:** Click the eye symbol next to the channel mask. This hides the effect of the channel mask on the object.

At least one channel, either the composite/object channel or the channel mask, must be visible. If only one is visible, you can't hide it by clicking its eye symbol.

- **To display a hidden channel:** Click to the left of the channel to restore the eye symbol.

Note: When you edit paint objects you can edit pixels in the images by selecting channels in the Channels palette. However, when you edit other objects, you can't select the "object" channel. You can show or hide the object channel, but you can edit pixels only in the channel mask.

When you finish editing a channel mask, press Esc to leave edit mode.

Detaching and deleting channel masks

If an object has a channel mask, the channel mask controls the transparency of the object. You might want to detach or delete the channel mask to eliminate the transparency effects from the object.

When you delete a channel mask, it no longer exists in the document. When you detach a channel mask, it appears in the document as a separate grayscale paint object.

- **To detach a channel mask:** Select the masked object. Choose Object > SpriteLayers > Detach Mask.

When you detach a channel mask, Canvas removes the channel mask from the object and places it in the document as a separate grayscale paint object. If the channel mask was detached from a vector object, the resulting paint object will contain any alpha channels that were contained in the vector object.

To delete a channel mask

1 Select the masked object.

2 In the Transparency palette, choose None in the Mask pop-up menu.

Note: Deleting the channel mask of a vector, text, or group object also deletes any alpha channels that were contained in the object. Also, if you ungroup a group object that has a channel mask, Canvas deletes the channel mask.

You can delete a paint object's channel mask when the paint object is in edit mode by dragging the channel mask to the trash can icon at the bottom of the Channels palette.

Transparency effects with channel masks

Channel masks let you add transparency to images without altering them permanently. A channel mask creates transparency without changing any pixels in an image. You can remove a channel mask to eliminate the transparency effect at any time.

To make an image transparent

To make parts of an image transparent — to eliminate the background in a photograph, for example — you can create a channel mask from a selection. This procedure explains how to transfer a selection into a channel mask to make selected areas transparent.

1 Choose Image > Show Channels to open the Channels palette. Double-click the paint object to put it into edit mode. You can use various techniques to select the areas you want to be transparent:

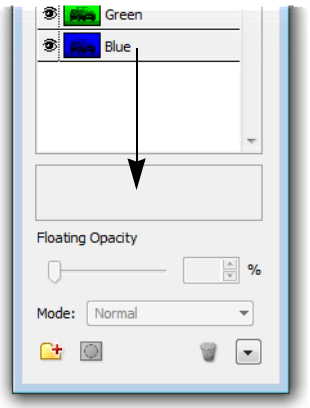
- You can click the Wand tool to select similar colors throughout the image. If a photograph has a colored background, for example, click the background to select it. You can also use the Color Range command to make a selection.
- To soften the edges of the selection, you can use the Image > Select > Feather command.

2 Click the Selection button in the Channels palette to save the selection in a new alpha channel. In the alpha channel, white pixels correspond to the selection. (A partial selection produces gray pixels in the channel). Black pixels in the channel correspond to unselected areas of the image. To create transparent areas from the selection, you need to invert the channel.

3 Press Esc to deselect the selection in the image. Then, click the alpha channel in the Channels palette to make it active.

4 Choose Image > Adjust > Invert. This reverses the white and black areas in the channel.

5 Drag the alpha channel into the Channel Mask slot in the Channels palette. Black areas in the channel mask produce transparent areas in the image. White areas in the channel mask produce opaque areas in the image.



Drag a channel into the Channel Mask slot

6 Press Esc to exit image edit mode. The selection you made is now transparent. If you place the paint object on a background in your document, the background will be visible through the transparent areas of the image.

To create a transparency fade

Create a transparent fade effect using a channel mask. This procedure explains how to create a blend in an alpha channel, and then create a channel mask to make an image fade to transparency.

1 Choose Image > Show Channels to open the Channels palette. Double-click a paint object to put it in edit mode.

2 Click the New Channel button in the Channels palette. A new alpha channel appears in the palette. Click the channel to make it active.

3 Select the Blend tool. With the foreground color set to white and the background color set to black, drag vertically from top to bottom in the channel. This creates a blend from white to black.

- You can change the distance that you drag the Blend tool in the channel to adjust the length and position of the fade to transparency.
- You might need to use the Blend settings in the Properties bar to select the Linear option for the Blend tool before you create the blend in the alpha channel. You can also set other options for the Blend tool to fine-tune blends.

4 Drag the alpha channel into the channel mask slot in the Channels palette. White pixels at the top of the channel produce opaque areas. Black pixels produce completely transparent areas. Gray pixels in the channel mask correspond with partially transparent areas in the image.

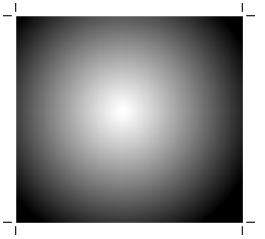
To create a channel mask by rendering

Canvas can create a channel mask when you render a vector, group, paint, or text object. To create the mask, choose the Mask and Transparency options in the Render dialog box. Canvas will create a channel mask that makes blank areas around and inside the objects transparent.

When you make a new paint object by pasting a non-rectangular selection copied from an image, Canvas makes a channel mask to hide white pixels surrounding the selection.



Original



Channel mask from alpha channel

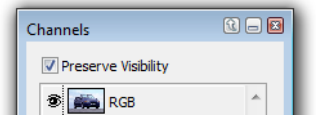


Vignette

Preserving transparency in images

Select the Preserve Visibility checkbox in the Channels palette to preserve transparency when you paint or apply filters to an image. The Preserve Visibility checkbox is available when you edit a paint object that has a visibility mask. A paint object has a visibility mask if it was created with a transparent background, or if you applied a visibility mask with the Add Visibility Mask command.

If a paint object has an opaque background, the Preserve Visibility checkbox is disabled.



To preserve transparency while editing an image

When a paint object is in edit mode, select Preserve Visibility in the Channels palette. When selected, you can paint and edit the image without affecting clear areas or reducing the transparency of partially transparent pixels.

The Preserve Visibility option affects all aspects of image editing. When Preserve Visibility is selected, pasted selections do not affect clear areas. Also, a pasted selection will match the transparency of the existing pixels when you defloat the selection.

You must deselect Preserve Visibility to paint in clear areas of an image. Then, if you want to edit the painted areas, select Preserve Visibility again.

For example, you can deselect Preserve Visibility and paint airbrush strokes in a clear image. Then, select Preserve Visibility and you can paint over the airbrush strokes to change their color, without losing the soft edge or "spilling" color into clear areas.

When Preserve Visibility is selected and you use the Eraser tool, pixels you "erase" are painted with the current background color; they are not erased to clear. Also, when you use any painting tool to apply color, you cannot make pixels more or less transparent. This is why you cannot apply any color in clear areas when Preserve Visibility is selected.

When you select Preserve Visibility, you can paint and apply filters to modify pixels that are less than 100% transparent. You can change the hue, saturation, and intensity of pixels but can't change their transparency.

- **To paint or apply filters to an entire image:** Deselect Preserve Visibility. This turns off the visibility mask and lets painting tools and filters affect the entire image.

✓ Tip
If an image is completely clear (contains no colored pixels), you cannot alter the image when Preserve Visibility is selected.

CHAPTER 26

IMAGE FILTERS & EFFECTS

Canvas provides commands that you can use to transform images for a variety of effects. These commands can be used to alter entire images or only selected areas, as well as image channels.

The commands in the Image > Filter menu are often called "filters" because they "filter" images or selections pixel-by-pixel. This chapter explains how to use these filters as well as other commands in the Image menu.

Note: The Filters menu is also located in the Properties bar for quick access to image effects.



Applying effect filters

You can use the Render, Stylize, and Offset filters to transform images. The Render filters apply forms or textures to an image. The Stylize filters apply a conceptual effect to an image. Stylize filters include Emboss, Trace Contour, and Solarize. The Offset filter shifts the pixels within an image.

Rendering clouds



Image with translucent clouds

You can apply texture to areas in an image, such as skies or walls, by applying the Clouds filter. The Clouds filter renders soft swirls of color using the foreground and background colors.

Note: The Clouds filter completely replaces the original image or selection.

To apply the Clouds filter to an image

1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected. This filter doesn't work with paint objects in Black & White mode, and Indexed mode.

2 Choose Image > Filter > Render > Clouds or use the Filter menu located in the Properties bar.

Applying Clouds filter to selections

1 With a paint object in edit mode, choose Image > Show Channels to open the Channels palette.

2 Select a color channel that shows the most contrast.

3 Drag the selected channel to the new channel button to create a copy of the channel. The channel copy is in black & white.

4 Select the channel copy in the Channels palette and double-click to open the Channel Options dialog box.

5 Enter a name for the channel copy in the dialog box.

6 With the painting tools, apply white to the areas where clouds are to appear. Apply black to the area where clouds won't appear.

7 Select the composite channel to make it active.



Original image



Color channel selected



Painted channel copy



Composite channel with channel loaded



Final image

8 Choose Image > Select > Load. Select the channel copy that you edited. The white area appears as a selection.

9 Select your background and foreground colors in the Inks palette. The colors you select determine the cloud color.

10 Choose Image > Filter > Render > Clouds to affect the selected area.

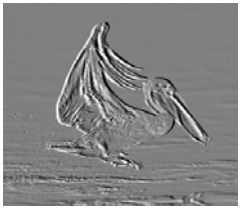
Rendering a color wheel

Fill a selection with a radial blend of colors by choosing Image > Filter > Render > Wheel. The rendered effect looks like the color wheel preview in the Hue/Saturation dialog box. The Wheel filter works with paint objects in RGB Color and CMYK Color.

Unless you make a selection in the image, the Wheel filter replaces the entire image. If you want to apply a translucent wheel effect, follow the steps for the procedure "Applying Clouds filter to selections" on page 26.2, but in the seventh step, choose the Wheel command.



Original (converted to grayscale)



Embossed Angle = 15 Height = 3, Amount = 110

Embossing an image

Make an image appear raised with the Emboss filter. This filter converts low-contrast areas to gray and accentuates high-contrast areas with color (or black and white if the image is Grayscale mode) according to the placement of a theoretical light source. The Emboss filter doesn't work with paint objects in Black & White mode, and Indexed mode.

To apply the Emboss filter

1 Select one or more paint objects to emboss. To apply the emboss filter to a limited area in one image, select the area.

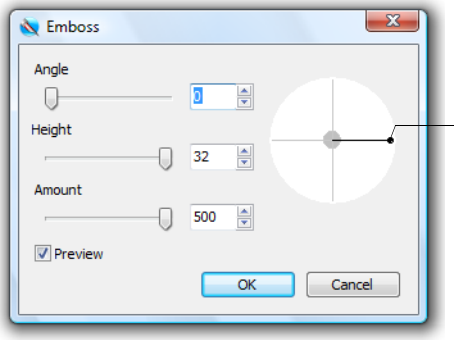
2 Choose Image > Filter > Stylize > Emboss or use the Filter menu in the Properties bar.

3 Enter an Angle from 0 to 360. An angle of 0 is straight right with higher numbers going counter-clockwise.

4 Enter a height from 1 to 32 pixels to set the height of the effect.

5 Enter a number from 1 to 500 in the Amount text box. To retain more color along high-contrast borders, increase this value.

Adjust the Angle, Height, and Amount individually by dragging the sliders...



...or drag the handle to set the Angle, Height, and Amount values simultaneously

Solarizing images

Create surrealistic effects in an image by applying the Solarize filter. The Solarize filter mimics a photographic darkroom procedure that exposes film to light during development.

Solarize CMYK Color, RGB Color and Grayscale mode images. If you make a selection, Canvas filters only selected pixels.

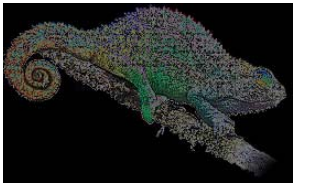
To solarize an image

1 Select one or more paint objects to solarize. To apply the Solarize filter to a limited area in one image, select the area.

2 Choose Image > Filter > Stylize > Solarize or use the Filter menu in the Properties bar.



Original



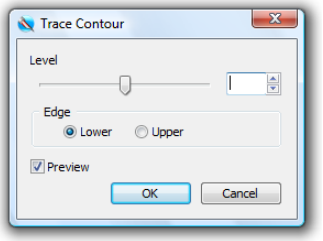
Solarized

Outlining areas based on color value

With the Trace Contour filter, you can outline image areas that border a particular color. This filter makes color outlines if you are working with a color image, and black outlines if you are working with a Grayscale mode image. This command doesn't work with paint objects in Black & White mode, and Indexed mode.

To use the Trace Contour filter

1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected.



2 Choose Image > Filter > Stylize > Trace Contour or use the Filter menu in the Properties bar.

3 Enter a Level value from 0 to 255. The Trace Contour filter uses this color brightness value to determine the areas to trace.

4 Select Upper or Lower in the Edge area. To outline areas with higher brightness levels than the one specified, choose Upper. Choose Lower to outline areas with lower brightness levels.

5 To see the effect of the settings, turn on Preview. When the settings are correct, click OK.



Original



Level =169
Edge = Lower



Level =169
Edge = Upper

Offsetting selections

You can shift an image area with the Offset filter. Canvas fills the vacated area with color, duplicated pixels, or parts of the offset area.



Original



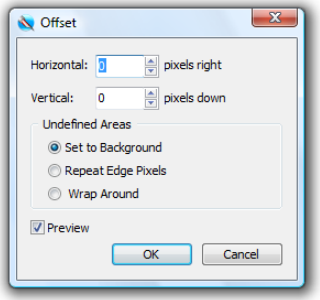
Set to Background



Repeat Edge Pixels



Wrap Around



To offset image areas

1 With an image in edit mode, select an image area.

2 Choose Image > Filter > Other > Offset or use the Filter menu in the Properties bar.

3 Enter horizontal and vertical offset amounts in pixels. Positive values result in offsets to the right and down; use negative numbers (preceded by a minus sign) to offset up and left.

4 Choose an option under Undefined Areas.

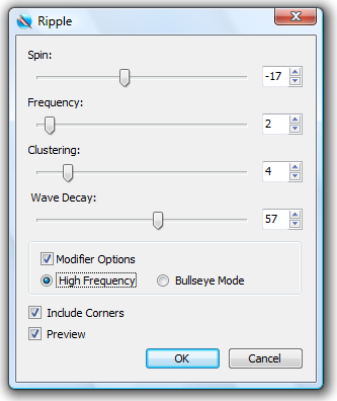
Choose this option	For this effect
Set to Background	Fills area with the background color
Repeat Edge Pixels	Duplicates edge pixels until they fill the area vacated by the offset
Wrap Around	Moves pixels cut off by the offset into the vacated area

5 Turn on Preview to see the effect of the settings.

6 Click OK when the settings are correct.

Ripple effects

With the Ripple filter, create the impression of ripples in an image, like the ripples made by dropping a stone into smooth water. By varying the controls in the Ripple dialog box, produce a range of effects in an image, from slight rippling to extreme distortion.



To apply the Ripple filter

1 Select a paint object. To limit the effect to a particular area, select the area where you want to apply the filter. If you don't make a selection, the filter affects the entire image.

2 Choose Image > Filter > Other > Ripple or use the Filter menu in the Properties bar.

3 Adjust the settings in the Ripple dialog box, and then click OK to apply the settings and close the dialog box.

Ripple settings

Adjust the following settings in the Ripple dialog box.

Spin The Spin value controls the effect of swirling the image around its center point. Type a number from -100 to 100 or drag the slider to set the amount and direction of spin. Positive numbers generate a clockwise spin; negative numbers generate a counter-clockwise spin. Larger values (positive or negative) increase the amount of swirling. If Spin is zero, the filter creates no ripples in the image and none of the other controls produces an effect.

Frequency The Frequency value affects the number of "waves" created in the image. Enter a number from 0 to 50. A high number creates more small waves; a low number creates fewer large waves.

Clustering The Clustering option can create interesting interference patterns in combination with some Frequency values. In general, Frequency values of 15 to 50 and Spin values of 25 and higher are most effective. Enter a Clustering value of 0 to 30. The higher the Clustering value, the more interference ripples appear between the main waves.

Wave Decay The Wave Decay value softens the effect of the Frequency setting by dampening or stretching the waves away from the center of the image. The closer a wave is to the center of the

image, the less it is stretched. Wave Decay creates the impression of blending the waves farthest from the center of the disturbance, especially when Include Corners is selected.

Enter a Wave Decay value of 0 to 100. The higher the value, the more the waves appear stretched toward the edge of the image.

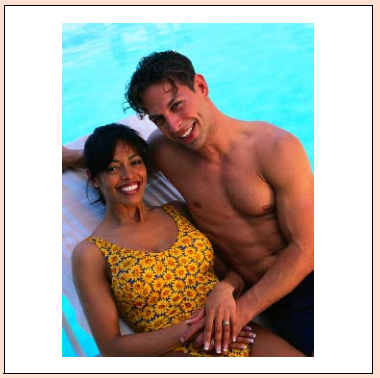
High Frequency The High Frequency option causes an approximate doubling of the effect of the Frequency setting.

Bullseye Mode Selecting Bullseye Mode leaves rings of unchanged original image area between the wave distortions. This creates a pattern of concentric rings like those surrounding a bullseye. This mode can provide a means of integrating a recognizable version of the image with its distortion.

Include Corners This option spreads the filter's effects to the corners of an image or selection. If Include Corners is not selected, the effects are confined to a circular area at the center of the image or selection.

Preview Select Preview to see the effects of the current settings before applying the filter to the image.

Ripple examples



Original



Ripple filter applied in area selected with the Wand tool

Original



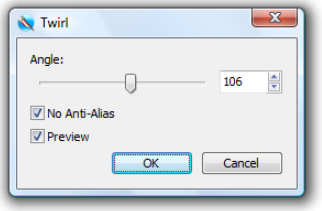
Spin = 20
Frequency = 10
Clustering = 0
Wave Decay = 10



Same settings (above) with Bullseye Mode



Twirl effects



The Twirl filter twists an image around its center to create interesting spiral distortions.

To apply the Twirl filter

1 Select a paint object. To limit the effect to a particular area, select the area where you want to apply the filter. If you don't make a selection, the filter affects the entire image.

2 Choose Image > Filter > Other > Twirl. Adjust the Angle settings in the Twirl dialog box. The Angle value specifies the direction and extent of the effect. Type a number in the box or drag the slider to set the Angle value. Higher numbers (positive or negative) create more twists around the center. A positive number twirls clockwise. A negative number twirls counter-clockwise. Select No Anti-Alias to turn off smoothing of edges in the image.

3 Select Preview to see the effects of the current settings before applying the filter to the image.

4 Click OK to apply the settings and close the dialog box.



Original



Twirl Angle 90



Twirl Angle 180

Spherical distortion

The Spherize filter can distort an image to simulate a reflection on a curved surface.

To apply the Spherize filter

1 Select a paint object. Make a selection to limit the effect to an area. If you don't make a selection, the filter affects the entire image.

2 Choose Image > Filter > Other > Spherize or use the Filter menu in the Properties bar.

3 Adjust the settings in the dialog box and click OK to apply the filter.



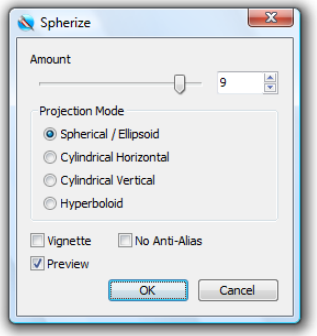
Original paint object



Spherize: Amount = 5



Vignette option selected



Spherize settings

Amount The extent of the distortion. Type a number from 1 to 10 or drag the slider. A higher number simulates a stronger curve.

Projection Mode The shape of the distortion. Select Spherical/Ellipsoid to simulate reflection on a spherical surface like a globe. Select Cylindrical to simulate reflection on a cylinder, such as a can. Select Horizontal to make cylindrical distortion horizontal. Select Vertical to make cylindrical distortion vertical. Select Hyperboloid to simulate reflection on a concave hyperboloid surface.

Vignette Isolates the shape of a spherical distortion from the rest of the image. If the image has a visibility mask, the areas of the image that fall outside of the distorted area will be transparent. If the image does not have a visibility mask, the areas are filled with the current background color. Use this option when Spherical/Ellipsoid is selected.

No Anti-Alias Turns off smoothing of edges in the image. Deselect this option for a smoother effect.

Preview Displays the current effect before you apply the filter.

Artistic Effects

The artistic filters, Crystallize, Lens Flare, Oil Painting, and Stained Glass, can be applied to images, text, and vector objects.

For images, access the filters by choosing Image > Filter > Artistic or use the Filter menu in the Properties bar. For text and vector objects, choose Object > SpriteEffects > Add Effect > Artistic (see “Spriteffects,” page 33.1).

Crystallize

This filter applies a crystal-like appearance to a selected image.



Before Crystallize filter



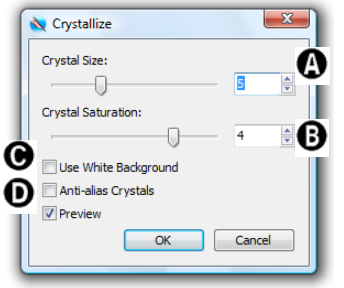
After Crystallize filter is applied

A Crystal Size - The size and saturation of the crystals can be adjusted numerically or by moving the appropriate slider bar.

B Crystal Saturation - The color of the background will influence the appearance of your image.

C Use White Background - By default, the background is set to black. You have the option to set the background to white. You may do this by checking the "Use White Background."

D Select the Anti-alias Crystals option for Web graphics.



Lens Flare

This filter mimics the appearance of a well-known photographic effect. It is caused by reflections of light that may occur inside the camera lens. A flare can often naturally appear as a source of light in a photographic scene or on a highly reflective object.



Before Lens Flare

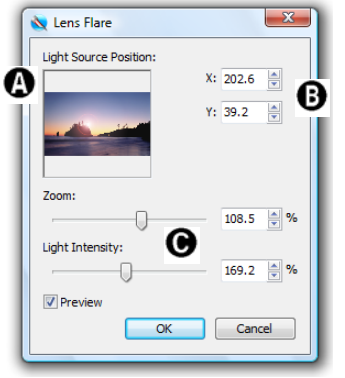


After Lens Flare

A Light Source Position - The flare may be adjusted by using your mouse to move the flare highlight in the preview window.

B The flare may also be moved by entering numerical values in the X or Y coordinates box.

C Zoom and Light Intensity values may also be applied to the flare by either adjusting the appropriate slider bar or by changing the numerical values of the effect.





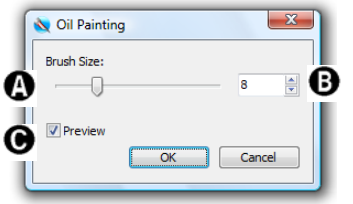
Before Oil Painting



After Oil Painting filter

Oil Painting

Use the Oil Painting filter to give an object the appearance of hand-painted artwork.



A Brush Size - Adjust the size of the brush effect by moving the slider bar.

B You also have the option to enter a numerical value in the brush size field.

C If you wish to preview the effects of the filter, then select the Preview checkbox.



Before Stained Glass



After Stained Glass filter

Stained Glass

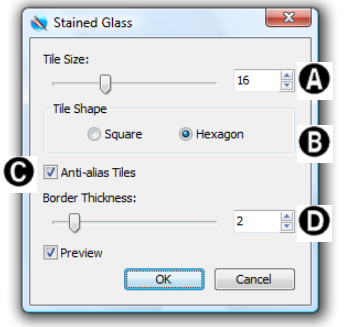
This filter applies a stained-glass appearance to an object.

A Tile Size - Adjust the effect of the filter by moving the Tile Size slider or by changing the numerical value in the field.

B Tile Shape - Select either square or hexagon tile shapes.

C Anti-Alias - If your work is for the Web, select the Anti-alias Tiles option.

D Border Thickness - Adjust the size and the thickness of the space that separates each piece of "stained glass".



Bevel



Before Bevel effect



After Bevel effect

Use the Bevel filter to give any 2D image a 3D appearance. If you are creating Web buttons and want to give the buttons a raised appearance, apply the Bevel filter.

When working with images, you can access the Bevel filter dialog by choosing Image > Filter > Stylize > Bevel. For vector or text objects, choose Object > SpriteEffects > Add Effect > Stylize > Bevel (see "Spriteffects," page 33.1).

Note: For images, ensure you apply a visibility mask to the area of the image to which you'll apply the effect (see "Adding visibility masks to images," page 22.21). If the image has a transparency mask, select the area to be beveled with either the Wand tool or Marquee tools.

A Direction of the light source can be entered by a numeric value, slider bar, or preview handle.

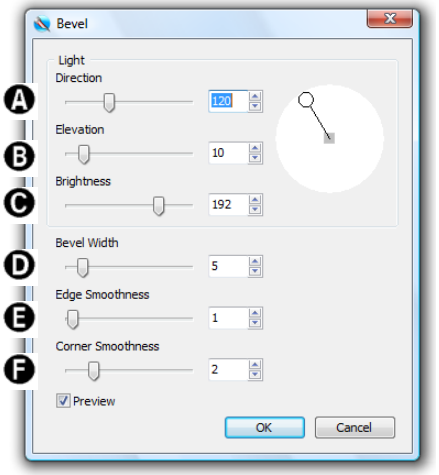
B Elevation of light source can be entered by a numeric value or slider bar.

C Brightness of light source can be entered by a numeric value or slider bar.

D Bevel width can be entered by a numeric value or slider bar.

E Edge Smoothness can be entered by a numeric value or slider bar.

F Corner Smoothness can be entered by a numeric value or slider bar.



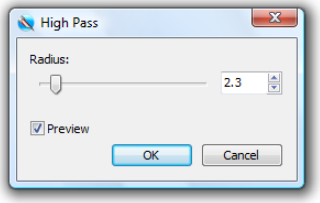
Using the High Pass, Maximum, and Minimum filters

This section describes how you can create selections in alpha channels and resize bright areas in color channels. Isolate areas in an image using the High Pass filter and Threshold command. You can use the Maximum and Minimum filters to spread color areas you might need to trap for commercial printing.

Isolating areas using the High Pass filter

The High Pass filter isolates high contrast edges in an image by removing low contrast detail. The filter makes pixels located in low contrast areas gray. In color images, the High Pass filter outlines high contrast edges in color. Otherwise, it outlines these edges in dark gray. This command doesn't work with paint objects in Black & White mode, and Indexed mode.

To apply the High Pass filter



1 Select one or more paint objects to adjust all the images. Select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected.

2 Choose Image > Filter > Other > High Pass or use the Filter menu in the Properties bar.

3 Enter a radius from 0.1 to 250.0 pixels.

- **To retain more of the original image surrounding high contrast edges:** Enter a high number. If you enter a low number, the filter makes more of the image gray.

Isolating images with the High Pass filter

1 With an image in edit mode, choose Image > Select > All. Then choose Edit > Copy.

2 Choose Image > Show Channels.

3 Create a new alpha channel by clicking the button in the lower-left corner of the Channels palette.

4 Select the new alpha channel and choose Edit > Paste.

5 Choose Image > Filter > Other > High Pass and enter a radius value. Click OK.

6 Choose Image > Adjust > Threshold. Adjust the threshold until you outline the areas you want. Click OK.

7 Paint areas white to include them in the selection. Fill the rest of the image with black.

8 Click the composite channel. Choose Image > Select > Load to load the alpha channel and select an area.



Original Image



High Pass filter



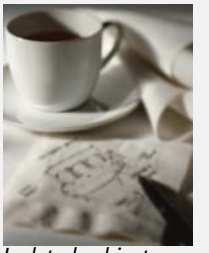
Threshold filter



Editing with Paint tools



Finished alpha channel



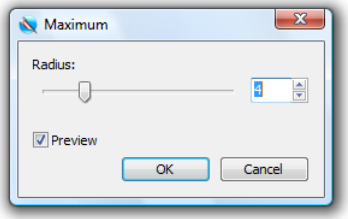
Isolated subject

9 In the example, the final image was finished by choosing Image > Select > Load with Inverse selected.

10 Then, choose Image > Filter > Blur > Gaussian Blur to apply a Gaussian blur of 3.0 pixels.

✓ Tip

To apply a choke or spread to an image manually, use the Maximum or Minimum filters in a color channel.



Maximizing and minimizing bright areas in an image

Increase or decrease light areas in an image with the Maximum and Minimum filters. The Maximum filter adds light to shadows. The Minimum filter shrinks light areas.

When you apply these filters, Canvas compares each pixel to its neighbors within the radius you specify, then replaces it with the lightest or darkest pixel in the group. This command doesn't work with paint objects in Black & White mode, and Indexed mode.

To use the Minimum and Maximum filters

1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected.

2 Choose Image > Filter > Other > Maximum and enter a radius from 1 to 16 pixels to maximize the light areas in an image.

3 Choose Image > Filter > Other > Minimum and enter a radius from 1 to 16 pixels to minimize the light areas in an image,.

4 Select Preview to check the settings and then click OK.



Original



Maximum 6 pixels



Minimum 6 pixels

Filling selections with color

The Fill command lets you quickly and uniformly fill a selection with the foreground or background color, black, white, or gray. In addition, select an opacity level and transfer mode for application of the color.

To fill a selection with a color

1 With an area of an image selected, choose Image > Filter > Other > Fill or use the Filter menu in the Properties bar. The Fill dialog box opens.

2 In the Use pop-up menu, choose a fill option. To make the color appear transparent, set the Opacity level to less than 100%. To use a mode effect, choose an option in the Mode pop-up menu.

3 Click OK to fill the selection.

Creating custom image filters

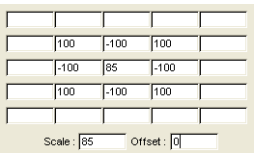
You can create your own special-effect and image-correcting filters using the Custom command. You can also save custom filters and use them in future Canvas documents.

Filters work with an image one pixel at a time. Using a mathematical formula and the color values of pixels within a specified radius, filters assign each pixel a new color value. In a custom filter, you supply the numbers the filter uses to calculate the new color values.

The same filter can produce different effects in other images. To get the most out of custom filters, spend time experimenting.



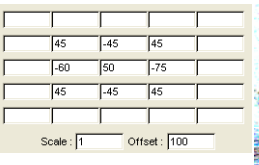
Original



Custom filter



Blurred image



Custom filter



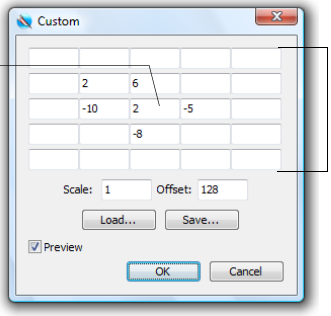
Embossed image

To use Custom filters

1 Select one or more paint objects to adjust all the images. You can select an area in one image in edit mode to adjust the selected area only. If you don't make a selection, the entire image in edit mode is affected. This command doesn't work with paint objects in Black & White mode, and Indexed mode.

2 Choose Image > Filter > Other > Custom. In the Custom dialog box, type values from -999 to 999 in the boxes in the grid. Canvas ignores blank boxes.

This box represents the target pixel in an image



These boxes represent the pixels surrounding a target pixel

3 Enter a Scale value from 1 to 9,999. To retain the general appearance of the original image, the scale should equal the sum of the entries in the configuration grid. For example:

Grid entries	Sum	Scale
2 2 1 -1 -1 3	2+2+1-1-1+3=6	6
-15 7 4 -3 2 8	-15+7+4-3+2+8=3	3

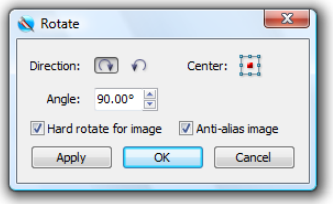
4 Enter an Offset value from -9,999 to 9,999. Positive values increase the brightness of the final outcome while negative values decrease the brightness.

5 Turn on the Preview option to check the filter effect. When the settings are correct, click OK.

- **To save a custom filter:** In the Custom dialog box, enter the filter settings and click Save. Enter a name and location for the filter and click Save.
- **To load a custom filter:** In the Custom dialog box, click Load. In the directory dialog box, select the filter file and click Open.

Rotating images

Canvas gives you the ability of applying a soft rotate or hard rotate to your images. A soft rotate is sufficient if you do not need to export the images to another format; however, if you plan on exporting your images and need them to remain rotated, then you should apply a hard rotate. A hard rotate not only rotates the image but also adds white pixels to the bounding box. Soft rotate does not add pixels.



You can also activate this dialog box by using the keyboard command Ctrl+R.

Anti-aliasing for rotated bitmaps

Sometimes bitmap images can lose their clarity when they are rotated. The anti-aliasing for rotated bitmaps feature addresses this issue.

If you're rotating a bitmap and select Hard rotate for image in the Rotate dialog box, the Anti-alias image checkbox becomes available. The anti-aliasing option results in a smoother, better quality image.

To hard rotate an image with the Rotate dialog box

1 Choose Effects > Rotate Right or Rotate Left > Other.

2 Make sure you select Hard rotate for image to enable Anti-alias image.



Original
Original bitmap before rotation.

Anti-aliasing - Off
Original bitmap after rotation without Anti-aliasing turned on.

Anti-aliasing - On
Bitmaps will not attain a pixelated appearance after rotation if Anti-aliasing is turned on.

To quickly rotate images at multiples of 90°

If you own a digital camera, you always spend time rotating images at 90°.

1 Select the image.

2 Click on the Rotate button in the Properties bar.

3 Select a hard rotate option in the menu and enter a value of 90° (or a multiple) in the field and press Enter.



Distorting images

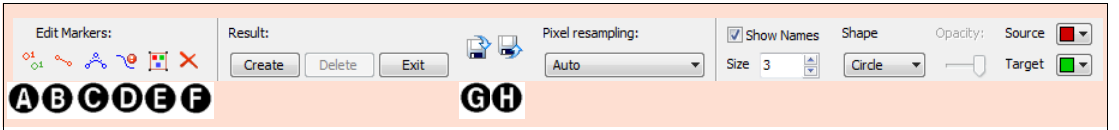
Canvas features an image effect that you can use to warp an image so it fits the bounding box of a vector object.

Shape effect

To use this effect, you must first select an image and vector object.

- **To apply the Shape effect:** Select an image and a vector object and choose Image > Image Warp > Shape.

Note: The Shape command is not available if more than one image or vector object is selected.



Shape effect controls

A Control points. Click to add control points to both the source and target. Every source point must have a corresponding target point. At least 3 points must be defined to enable the Create button.

Control points are saved in relative position to object, so if you drag or scale an object, the points will be scaled correspondingly. Save the document after change the control points configuration. When exiting the session, current point configuration is automatically saved.

B Segment points. Click to add segments to both the source and target. Every source segment must have a corresponding target segment.

C Curve points. Click to add curve segments to both the source and target. Every source curve must have a corresponding target curve.

D End curve points. Click to complete the curve.

E Select all points. Click to select all control points.

F Delete has two functions: delete current curve, if you are creating a curve, or delete selection, if any.

G Save. Click this button to save the control points within the source and target.

H Reload. Click this button to reload the saved points.

Pixel resampling. Select a resampling method.

- Nearest neighbor. Will remove some pixel information from your target image; however, if used, this setting will be the fastest.
- Bilinear. Will use a bilinear interpolation algorithm during downsampling.
- Biquadratic. Estimates the color at a pixel in the destination image by an average of 9 pixels surrounding the closest corresponding pixel in the source image.
- Bicubic. Estimates the colour at a pixel in the destination image by an average of 16 pixels surrounding the closest corresponding pixel in the source image.
- Polygonal. Every source pixel is mapped to a polygon in the target.
- Auto. Canvas selects the most appropriate method for resampling.

Show Names. Select this checkbox if you want to see labels. Use the Size menu to adjust the size of control points.

Shape. Select either Circle or Square for the control point shape.

Opacity. Adjust the transparency of the created object.

Source & Target colors. Select a color from the palettes to distinguish the source and target. By default, the source is red and the target is green.

Create. Click this button to perform the effect.

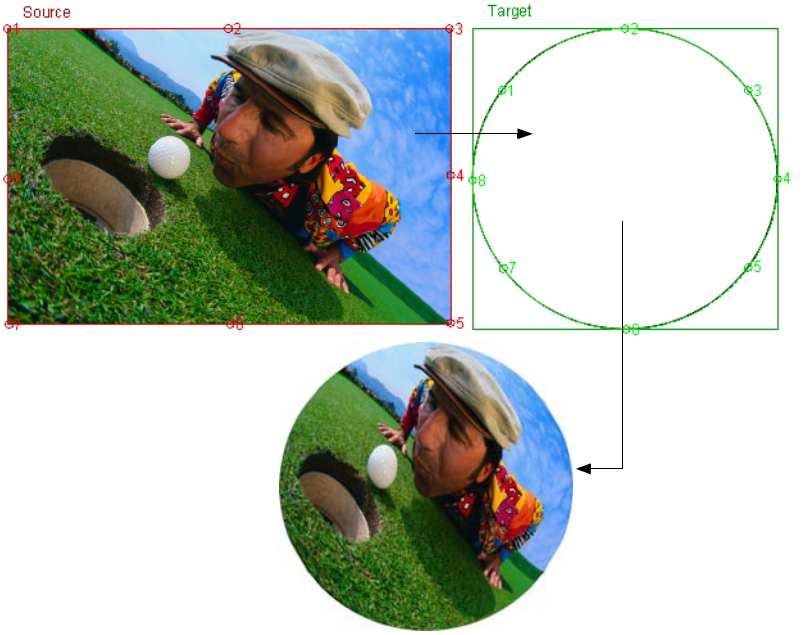
Delete. Click this button to delete the created object.

Exit. Click this button to leave the warp effect before or after clicking Create.

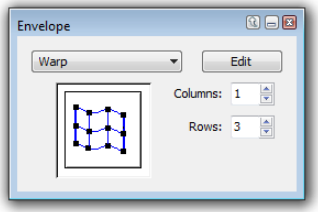
The image is the Source and the vector object is the Target.

Each Source control point has a matching Target control point.

If the vector object contains a fill ink, the fill will be removed after the effect is applied.



Envelope effect



The Envelope command lets you distort image objects, as if an image was drawn on a rubber sheet and then stretched.

When an image object is in envelope edit mode, its bounding box acts like the rubber sheet. Canvas includes several envelope styles that offer various handles you can use to manipulate an object's bounding box.

To learn about the envelope styles and their respective uses, see "Enveloping objects" on page 20.12).



Original image

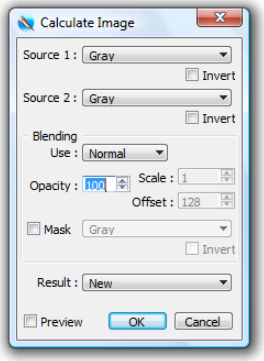
Enveloped image



Combining image channels

The Calculate Image command lets you combine channels to create selection masks for effects like embossing text in an image. By adding, subtracting, and multiplying channels, you can also enhance shadows and highlights. The Calculate Image command combines corresponding pixels from two channels by the method you choose. You can place the result in a new or existing channel.

Note: As shown in "Examples of Calculate blending options" on page 26.24, you can also copy an image and paste it into a new alpha channel of Source 1. Then use the Calculate Image command to combine Source 1 and the new alpha channel (Source 2).



To combine channels

1 With an image in edit mode, choose Image > Calculate.

2 Choose the first channel in the Source 1 menu. If you want to invert the channel, select Invert. For more information, see "Inverting colors in images" on page 24.5.

3 In the Source 2 menu, choose the channel you want to combine with the Source 1 channel. If you want to invert the channel, select Invert.

4 In the Blending area, choose an option in the Use menu. See "Descriptions of Calculate blending options," page 26.23

5 Enter an opacity from 0 to 100 percent for Source 1. Other options are available for some Blending methods.

6 If you want to mask Source 1, select Mask in the Blending area and choose a channel in the menu. To invert the mask, select Invert in the Blending area.

7 Choose the name of a destination channel or choose New in the Result menu. If you select an existing channel, Canvas replaces the channel with the results of the Calculate Image operation.

8 Click OK to calculate the channel using the current settings.

Descriptions of Calculate blending options

You can select various blending methods in the Calculate Image dialog box.

Normal. Places Source 1 over Source 2 at the specified opacity. 100 percent opacity replaces Source 2 with Source 1.

Multiply. Creates a darker channel than the source channels. Black areas in either source create black areas in the resulting channel. White areas do not affect the result.

Screen. Creates a lighter channel than the source channels. White areas in either source create white areas in the resulting channel. Black areas do not affect the result.

Overlay. Places Source 1 over Source 2 without destroying the shadows or highlights of Source 2.

Soft Light. Lightens or darkens pixels in Source 2 depending on the brightness value of the corresponding pixels in Source 1. Pixels in Source 1 that are lighter than 50% black lighten Source 2. Pixels in Source 1 that are darker than 50% black darken Source 2.

Hard Light. Lightens or darkens pixels in Source 2 depending on the brightness value of the corresponding pixels in Source 1. Hard Light works similarly to Soft Light. However, black in Source 1 produces black in the resulting channel and white produces white.

Darken. Replaces pixels in Source 2 with the corresponding pixels in Source 1, if the pixels in Source 1 are darker.

Lighten. Replaces pixels in Source 2 with the corresponding pixels in Source 1, if the pixels in Source 1 are lighter.

Add. Creates a lighter channel than the source channels. Add is similar to Screen but usually produces a higher-contrast image.

If you select the Add option, you can enter a Scale value from 1 to 2 with a precision of three decimal places. To calculate the average brightness value of two channels, choose Add and enter a Scale of 2.

You can brighten or darken the resulting channel by specifying an Offset value. To lighten the overall image, enter an offset from 1 to 255. To darken the image, enter an offset from -1 to -255.

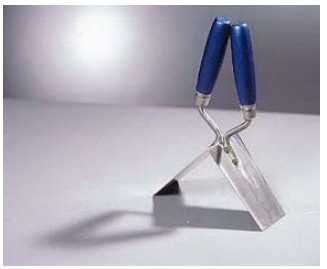
Subtract. Creates a darker channel than the source channels. Subtract is similar to Multiply. However, corresponding pixels of the same color produce black in the resulting channel.

If you select the Subtract option, you can enter a Scale value from 1 to 2 with a precision of three decimal places.

You can brighten or darken the resulting channel by specifying an Offset value. To lighten the overall image, enter an offset from 1 to 255. To darken the image, enter an offset from -1 to -255.

Difference. Compares the color value of each pixel in Source 1 with the corresponding pixel in Source 2, subtracts the darker value from the lighter, and then uses this difference in the resulting channel.

Examples of Calculate blending options



Source 1



Source 2



Multiply



Screen



Overlay



Soft Light



Hard Light



Darken



Lighten



Add



Subtract



Difference

CHAPTER 27

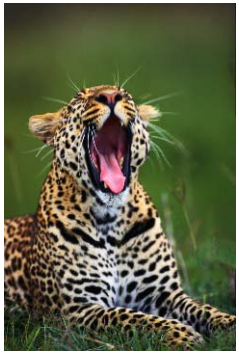
IMAGE PROXIES

Proxies are low-resolution images you can use in Canvas documents. A proxy is a placeholder that is linked to an original image. The original high-resolution image is stored in a Canvas Image File on disk.

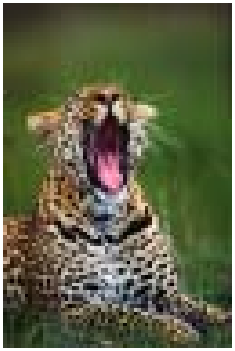
Using proxies

✓ Tip
Proxies are most useful for conserving time and memory when you use large, high-resolution color images in documents.

Proxies can significantly reduce the time required to redraw the screen while you work. Also, a Canvas document that contains proxies requires much less disk storage space than one containing high-resolution images (although the space required to store the document and the linked image files is approximately the same as for the document containing high-resolution images).



A high-resolution image stored in a Canvas Image File on disk.



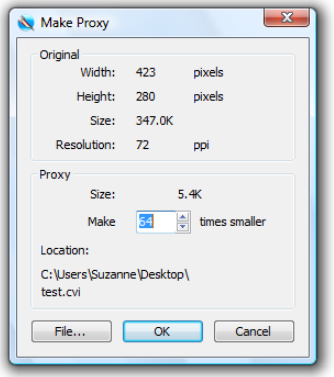
A low-resolution proxy replaces the image in a Canvas document. The proxy is linked to the Canvas Image File.

Replacing an image with a proxy

The procedure described in this section lets you replace an image contained in a Canvas document with a low-resolution proxy. When you do this, Canvas exports the original image to a Canvas Image File, and links the Canvas Image File to the proxy.

If you later double-click the proxy for editing, Canvas loads the original image from the Canvas Image File. You can edit the original image as you would any other Canvas paint object. When you leave image-editing mode, Canvas stores the changes in the Canvas Image File and then displays the proxy again.

To create a proxy linked to an image file



1 In the Canvas document, select the image object you want to replace with a proxy.

2 Choose Image > Proxy > Make Proxy. A directory dialog box appears.

3 Select a file type and location to save the file.

4 Type a name for the image file that Canvas will create.

5 Click Save. The Make Proxy dialog box appears.

6 Type a value in the "Make...Times Smaller" box. The larger this number, the lower the proxy resolution and the less memory required by the proxy in the document. The value must be from 1 to 1,000.

7 Click OK. Canvas replaces the image with a proxy and creates a file containing the original image on disk. The proxy is linked to the image file on disk.

If you click Cancel, Canvas closes the dialog box without replacing the original image, placing the proxy, or storing the image file on disk.

Make Proxy dialog box

You use the Make Proxy dialog box to create proxies linked to Canvas Image Files.

A Width and height of the image.

B Size of the Canvas Image File you are about to create.

C Resolution of the image.

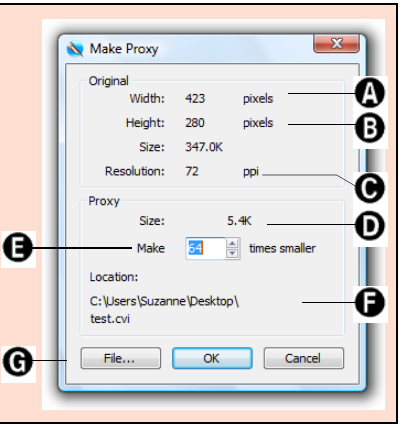
D Memory required by the proxy. The memory required changes if you enter values in the "Make...times smaller" text box.

E Type the proxy reduction factor in this text box. The larger this value, the lower the proxy resolution and the less memory required by the proxy.

F Location of the file on disk.

G Click to change the location that Canvas will store the Canvas Image File.

Click OK to replace the image with the proxy and create the Canvas Image file.



Final output with proxies and linked image files

To produce final high-resolution output from a document, you may need to copy the Canvas document from your disk to another storage media, such as a Zip disk. When you copy a document that contains image proxies, you need to copy the linked high resolution image file also, to be able to print the high resolution images.

Make sure when you copy the documents to another disk, that you maintain the original folder structure. It is a good idea to open the Canvas document that you copied, and check that the links have not been broken (see "To verify proxy links" on page 27.5 for more information).

You can also replace a proxy with its linked image to eliminate the need to copy the image file. To learn how to do this, see "To replace a proxy with its linked image" on page 27.5.

To create a proxy by acquiring a file

You can use the Import command to create a proxy that is linked to a TIFF, JPEG, or CVI file.

You can edit acquired proxies the same as other proxy images. However, some changes you might make, such as adding image channels, are not supported by JPEG or TIFF files.

1 To acquire an image from a file, choose Image > Import and choose a file format in the Import dialog box.

2 In the Import dialog box, select the Acquire As Proxy option. Select the image files to import and click Import.

3 The Proxy Info dialog box appears. Type the proxy resolution in the "Make...Times Smaller" box. The larger the number, the lower the resolution of the proxy image in the document.

4 Click OK. Canvas places the proxy images in the document.

Editing proxies



Paint object in image-edit mode

When you place a proxy object in image-edit mode, Canvas loads and displays the linked image file in place of the proxy. If the original image has changed, you see the changes.

Changes you make in image-edit mode are saved in the linked image file on disk when you exit image-edit mode. Canvas then displays an updated proxy.

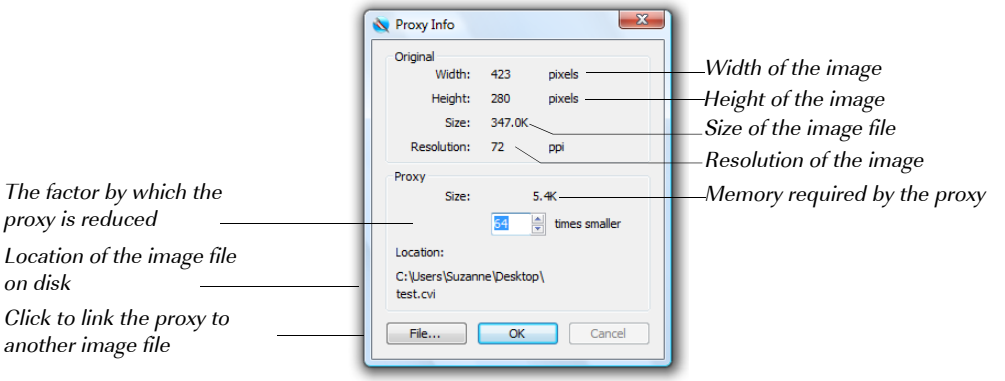
Editing an image linked to a proxy is the same as editing any image in Canvas: you can use painting tools and commands to alter pixels in the original image.

Object editing

Changes you make to a proxy when you do not edit the pixels in the image are object-level edits. You can skew and scale proxies like other objects. Skewing, scaling, and other object-level editing do not affect the image file to which the proxy is linked.

Displaying proxy information

When you select a proxy object, the information area of the Status bar displays the data for the image file to which the proxy is linked in italic type. To display information on the proxy object, choose Image > Proxy > Proxy Info. The Proxy Info dialog box displays the dimensions and resolution of the proxy object and the location of the linked original image on disk.



Removing proxies

To remove a proxy object easily, without replacing it with an original image, select the proxy object and press Delete, or use the Cut or Clear commands in the Edit menu.

To replace a proxy with its linked image

1 Select the proxy you want to replace.

2 Choose Image > Proxy > Unlink Proxy. Canvas asks if you are sure you want to remove the link between the image file and the proxy.

3 Click OK to replace the proxy and remove the link to the image file.

Maintaining proxies

If someone changes the name or location of an image file that is linked to one or more proxies, Canvas alerts you that the file could not be found when you try to edit, unlink, or update any of the proxies.

✓ **Important**
You should always verify the proxy links in a document before final output. If you produce final high-resolution output from a document with unlinked or broken proxy objects, the associated images will not print correctly.

You can check proxies in a document at any time to verify that the links are valid. If Canvas detects unlinked proxies, you can re-link them to existing image files.

To verify proxy links

To determine if any proxy links are broken, choose Image > Proxy > Check Proxies.

If Canvas finds an unlinked proxy, it displays selection handles around the proxy and centers it in the document window. Canvas displays a message telling you that the proxy has a problem because the image file could not be found.

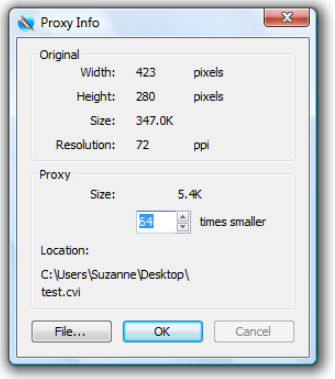
Note: When it finds an unlinked proxy, Canvas displays the proxy's name, if you have assigned a name to the proxy object. You can do this by typing a name in the Name field on the Data tab in the Object Specs palette (Object > Object Specs).

When Canvas tells you that a proxy has a problem, you should follow the procedure "To re-link a proxy," page 27.6. If a proxy does not have a valid link to an image file, Canvas prints the low-resolution proxy when you print the document.

If all proxies in the document have valid links to image files, Canvas displays the message: “No problems found.” Canvas also displays this message if the document contains no proxies.

To re-link a proxy

If you are using the Check Proxies command and Canvas finds an unlinked proxy, you can link the proxy to an image file.



1 After Canvas identifies an unlinked proxy, click Fix in the message box. The Proxy Info dialog box appears.

- If you click OK, Canvas skips the proxy and continues checking other proxies. If you click Cancel, the check ends.

2 Click File in the Proxy Info dialog box. A directory dialog box appears.

3 In the directory dialog box, select an image file to link to the proxy, and then click Open. Canvas returns to the Proxy Info dialog box, which shows the path to the linked image file.

4 Click OK. Canvas closes the Proxy Info dialog box and continues to check for unlinked proxies.

5 If Canvas finds another unlinked proxy in the current document, Canvas again selects the unlinked proxy and displays a message that the proxy has a problem. Repeat the procedure from Step 1 above to re-link unlinked proxies that Canvas selects.

When Canvas doesn’t find any unlinked proxies, it ends the Check Proxies procedure and returns to the document.

To change the file linked to a proxy

Use the following procedure to link a proxy to a different image file.

1 Select the proxy object.

2 Choose Image > Proxy > Proxy Info. The Proxy Info dialog box appears. Click File and a directory dialog box appears.

3 Select the image file you want linked to the proxy and click Open. The Proxy Info dialog box appears, and shows the new path and the name of the linked image file.

4 Click OK to close the Proxy Info dialog box.

Updating proxies

Use the Update Proxies command to update all proxies in a document so they match the image data in their linked image file.

- **To update all proxies in the active document:** Choose Image > Proxy > Update Proxies.
- **To update a specific proxy:** Select the proxy object you want to update and choose Image > Proxy > Update Proxy.

Exporting Canvas Image Files

You can export any image from a Canvas document to create a Canvas Image File on disk. You can then create proxies linked to the Canvas Image File.

This procedure creates a Canvas Image File, but does not link the image file to the document, or replace the image with a proxy in the document.

To export an image to a Canvas Image File

1 Select the paint object in the document and choose Image > Export > Canvas Image File.

2 A directory dialog box appears. Select a location and type a name for the image file, and then click Save. Canvas creates a Canvas Image File.

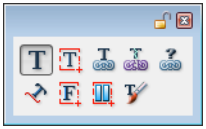
IV

TEXT & TYPOGRAPHY

CHAPTER 28

TEXT ENTRY & LAYOUT

Typing text in a document



Canvas has a full range of text and typography features that let you integrate text with illustrations and images. You can enter, format, edit, and arrange text in Canvas. You can also import text files and use Object Linking and Embedding (OLE) to place text in documents. To help you edit and proof text, Canvas provides spell-checking and text-searching tools.

Depending on the circumstance, use either the Text tool or Vertical Text tool to type text into a document.

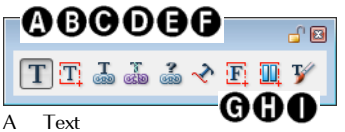
The Vertical Text tool is designed for Japanese and other languages with vertical text. For information on the Vertical Text tool and other features for working with two-byte languages, see "Tools and options for two-byte and vertical text" on page 28.5. Remember that the Vertical Text tool does not appear unless "Enable two-byte script" is selected in the Configuration Center (see "Type settings," page 12.12).

Text objects

All text in a Canvas document is contained in objects called text objects. Text objects can contain a single character or line of text, or thousands of words, sentences, and paragraphs.

Note: Dimension objects contain dimension text (see "Using the Dimensioning tools" on page 19.2).

Text tools



A Text
B Text Object
C Text Link
D Text Unlink
E Link Info
F Path Text
G Text Form Field
H Section
I Text Format Brush

The Text tool palette contains the tools you use to create text objects and edit text.

- Use the Text tool to create text objects and edit text.
- Use the Text Object tool to draw fixed text objects for page layouts.
- Use the Path Text tool to type text along a vector path.
- Use the Text Link tool to link text objects to create text flows.
- Use the Text Unlink tool to break text object links.
- Use the Text Form Field tool to create form text boxes.
- Use the Text Format Brush tool to copy a text format and apply it to other text.

Using the Text tool



Use the Text tool to create new text objects, type text into a document, and edit text.

When you create text objects with the Text tool, you can choose whether or not to set the column width before typing.

- If you set the column width before typing, text wraps to the next line when it reaches the right boundary of the text object.
- If you don't set the column width before typing, the right margin expands indefinitely to accommodate the amount of text you type. This is called a "caption" text object.

Whether you should set the column width before or after typing depends on the amount of text you want to type. For short labels and callouts, you might find it easier to simply type and let Canvas adjust the right margin. However, for paragraphs or newsletter columns, it is probably easier to set the column width before typing.

To type text with the Text tool

1 Select the Text tool. The pointer displays an I-beam when moved into the document window.

2 Do one of the following to set the location and type the text:

✓ Tip
You can change the size of the text object by selecting it and dragging a selection handle.

- **To enter one line of text:** Click in the document; an insertion point appears where you click. Begin typing and the right margin extends to fit the line of text that you type.

- **To define a text column:** Drag diagonally to create a rectangular text object. The object's width matters, but not its length; Canvas contracts or expands the length to accommodate the text you type. An insertion point appears at the top of the object. Begin typing, and when you reach the right margin, Canvas wraps the text to the next line.

3 Press Esc to exit text-editing mode when you finish typing. The text object remains selected.

4 Press Esc to deselect the text object or select another object. You can also click outside the object.

Attributes of new text

When you type text, Canvas applies the current attributes and the current type format settings to the characters you type. For more information about changing ink and stroke attributes, see "Text inks and strokes" on page 32.1).

Type formatting Canvas applies the current settings for the font, style, type size, justification (alignment), leading, and kerning to the characters you type. These settings are selected from the Text menu, the Properties bar, or with the controls in the Type palette (see "Applying text formats" on page 29.3).

✓ **Tip**
If the current fill ink is a gradient, hatch, symbol, or texture, Canvas applies 100% black to the text characters.

Fill inks Canvas applies the current fill ink, if it's a solid color fill ink, to the text characters.

Pen inks The pen ink for text you type is always 100% black, and is not visible until you apply a pen stroke to the text.

Strokes Canvas applies no stroke to text characters you type. This means that no outline appears on the characters, and the pen ink applied to the text is not visible because the pen ink appears only when an object or text has a visible stroke.

Using the Text Format Brush



Use the Text Format Brush to copy text attributes, such as font, font style, fill ink, pen ink, as well as pen stroke, so that you can apply them to other text. This tool does not copy frame ink, frame stroke, or background ink. To apply these items to text, see "To

apply a background ink," page 32.2, "To apply a frame stroke," page 32.3, and "To apply a frame ink," page 32.3.

To copy and apply text attributes

1 Select the Text Format Brush tool. The cursor changes to an eyedropper.

2 Click on a text object to copy the text attributes.

3 Then, click on the text object to which you want to apply the text attributes.

If you want to apply the text attributes to a single character or group of characters, drag across the character or characters until they are all selected. When you release the mouse, the text attributes will be applied.

Creating text layouts



Use the Text Object tool to place text objects, or columns, in page layouts. Text objects created with this tool keep their width and length, unlike text objects made with the Text tool, which shrink and expand in length to fit the amount of text you type. The Text Object tool is especially useful for designing templates and master pages, because you can set up text columns and add type later.

✓ Tip
To hide the bounding boxes of text objects, choose Layout > Display > Hide Text Boxes. To show them again, choose Layout > Display > Show Text Boxes.

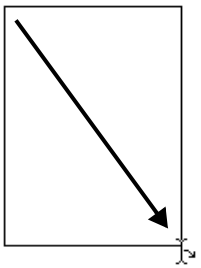
If you enter text into a text object created with the Text Object tool, and there is more text than will fit in the column, an overflow indicator appears at the bottom of the text object (see "Flowing overset text into new text columns" on page 28.13).

Note: The Text Object tool doesn't select text or place a text object in edit mode. For these operations, use the Text tool (see "Using the Text tool" on page 28.2).

To create an empty text object



1 Select the Text Object tool. When you move into the document window, the pointer is an I-beam with an arrow.



Drag the Text Object tool to create an empty text object.

2 Drag to set the width and length of a rectangular text object.

3 Canvas deselects the Text Object tool and either selects the Selection tool or Text tool.

4 Double-click in the text object to select the Text tool. The new text object is in edit mode with an insertion point at the top of the column.

You can begin typing in the new text object immediately. Press Esc to exit text editing mode and select the text object. Press Esc to deselect the text object.

Positioning text objects

Arrange text objects the same way you arrange other types of objects. Drag text objects with the mouse, resize them by dragging a selection handle, "nudge" text objects with keyboard arrow keys, and set coordinates and dimensions in the Properties bar.

Tools and options for two-byte and vertical text

✓ Tip
You must quit and restart Canvas to activate or deactivate the two-byte text preference.

A special preference, *Enable two-byte script*, appears in the Type manager of the Configuration Center if your system is capable of using two-byte languages (see "Preferences for two-byte text entry," page 12.23). Depending on the amount of text in your documents, activating the two-byte text preference might slow down text editing.

For Windows ME, 2000, and XP, the OS supports almost any language setting, including Japanese.

When you activate the two-byte text preference, Canvas selects the metric measurement system by default. Select another system for measurement units by choosing Layout > Rulers (see "Setting up rulers," page 10.7).

The "two-byte" preference also can make available several tools and options that let you create vertical text objects (with or without two-byte fonts), and use an entry window for typing two-byte characters. These tools and options are described in this section.

Available two-byte text tools and options

When the two-byte preference is active, the following items appear:

- The Vertical Text tool appears in the Toolbox (see "Using Vertical Text tool" on page 28.6).

- The Vertical Text Object tool appears in the Toolbox (see "Using Vertical Text Object tool" on page 28.6).
- "Vertical" options appear in the Column Guides dialog box and the Type palette (see "Options for vertical text and columns" on page 28.7).
- The Inline tab appears in the Configuration Center (see "To set inline text-entry preferences," page 12.24).

Using Vertical Text tool



The Vertical Text tool types text in vertical columns that flow from top to bottom and right to left. Create vertical columns of text in languages that use vertical text, or when you work on a publication in which text runs across a page.

✓ Tip
If the Vertical Text tool isn't available because the two-byte text preference isn't selected, get the same effect by rotating text 90° by choosing Effects > Rotate.

To create empty text objects, such as for a document template, to contain vertical text, use the Vertical Text Object tool (see "Using Vertical Text Object tool" on page 28.6).

To type vertical text directly

1 Select the Vertical Text tool. The pointer changes to a horizontal I-beam.

2 Click in the document to place the text insertion point, and then begin typing. Since the text will flow from top to bottom, Canvas expands the bottom of the column to fit the longest line you type.

3 Press Esc to exit text edit mode.

To define a column for vertical text

1 Select the Vertical Text tool. The pointer changes to a horizontal I-beam, indicating that text will flow from top to bottom.

2 Drag the I-beam to set the size of the column, and then begin typing. As you type, text characters run from top to bottom. When the text reaches the bottom edge of the column, it wraps back to the top and onto the next line to the left.

3 Press Esc to exit text edit mode.

Using Vertical Text Object tool



The Vertical Text Object tool lets you create empty text blocks for vertical text. Text objects created with the Vertical Text Object tool maintain their width and length.

To create text objects for vertical text

1 Select the Vertical Text Object tool. The pointer changes to a horizontal I-beam indicating that text will flow from top to bottom.

2 Drag to define the width and length of the text object. Then drag in other locations to create more text objects, or begin typing in the new text object.

3 Press Esc to exit text edit mode.

Options for vertical text and columns

✓ Tip
The Vertical options described in this section are not related to the "Vertical" command that changes the alignment of text bound to a path.

A checkbox labeled "Vertical" appears in two places: the Column Guides dialog box and Type palette.

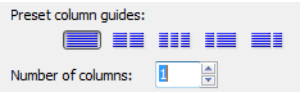
In the Column Guides dialog box, create column guides for vertical text in Publication documents. In the Type palette, specify horizontal or vertical orientation for text objects.

To use vertical text column guides

Use the Column Guides dialog box to set up horizontal guides for columns (text objects) that contain vertical text.

1 Choose Layout > Column Guides. The Column Guides dialog box appears.

2 Select the Vertical checkbox. The column guide buttons at the top of the dialog box change to vertical orientation.



3 Use the preset column buttons or the other options to specify guides for the number of columns that you want to use.

- **To use preset column guides:** Click one of the buttons. The first three buttons are for 1, 2, and 3 text columns respectively. The last two buttons are for 2 columns with a wide and narrow column.
- **To set up guides for any number of columns from 1 to 12:** Use the "Number of columns" text box.

4 Click OK to create guides for the specified number of columns.

To use the Vertical option for text objects

Use the Vertical option in the Type palette to set up the Text tool for vertical text and to orient text objects to contain vertical text.

1 Open the Type palette by double-clicking the Text tool or choosing Text > Type.

2 Do one of the following to set up the Text tool, or to change the orientation of existing text objects:

- **To change the default operation of the Text tool:** Make sure that no objects are selected in the document.
- **To change existing text objects:** Select the text objects.

3 Select the Vertical checkbox in the Type palette and then click Apply to apply the current settings. Canvas applies the vertical option to the selected text objects or to the Text tool.

To change text orientation to horizontal in an object

1 Open the Type palette.

2 Select a text object containing vertical text.

3 Deselect the Vertical checkbox and then click Apply.

To use vertical text in publication layouts

1 Choose Layout > Column Guides and choose the number of columns you want to use.

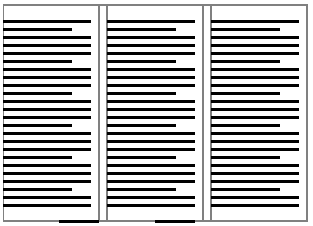
2 Use the Vertical Text Object tool to click between column guides to create a text column sized to fit the column guides.

The column extends from the point you click to the left margin of the page. If the column guides are outside the printable area, the column text remains inside the printable area (see "Using Vertical Text Object tool" on page 28.6).

✓ Tip

When you set the Text tool to create vertical text, lines of text that you type are vertical, with text flowing from top to bottom and lines running from right to left. This is the same as the orientation of text within an existing text object when you apply the Vertical option.

Creating column layouts



A 3-column section

A section is a rectangular area that arranges text in columns. A section is made of column guides, which are non-printing lines that define the text columns and gutters (spaces between columns).

Sections make it easy to arrange and modify text in columns. You can place one or more sections on a page. After you place text in a section, you can change the number or the size of the columns in the section and Canvas will adjust the text to fit.

To create text columns in a document, you could manually arrange separate text objects; however, the Section tool and column guides automate text layout. This section describes how to work with the Section tool and Column Guides to create text layouts.

Creating columns

Create column layouts with the Section tool or Column Guides command (Layout > Column Guides). Use the Section tool to place multiple sections at specified locations on one or more pages. Use the Column Guides command to define sections or change settings for existing sections.

Whether you create or modify sections with the Section tool or Column Guides command, the Column Guides dialog box is the control center for configuring sections.

When you create a section, the section's column guides appear on a guide layer in the document. By default, guide layers are non-printing and have a bright blue override color. Use the Document Layout palette to change the override color or make a guide layer printable (see "Guide layers," page 11.12).

When you add text to a section, Canvas creates a text object in each column in the section. The text objects are placed on the current layer.

Column Guides dialog box

This dialog box contains settings to help automate column layout:

A Section Name: Canvas applies a default name when you create a section. Type a new name in the text box to change a section's name.

B Section options menu: Delete sections, fit sections to a page, or fit sections to the top half or bottom half of a page. Choose an option from the menu.

C Apply To: Depending on the layout, choose from This Page, All Pages, All Left Pages, Left Page, Right Page, or All Right Pages (see "Apply To menu options," page 28.12).

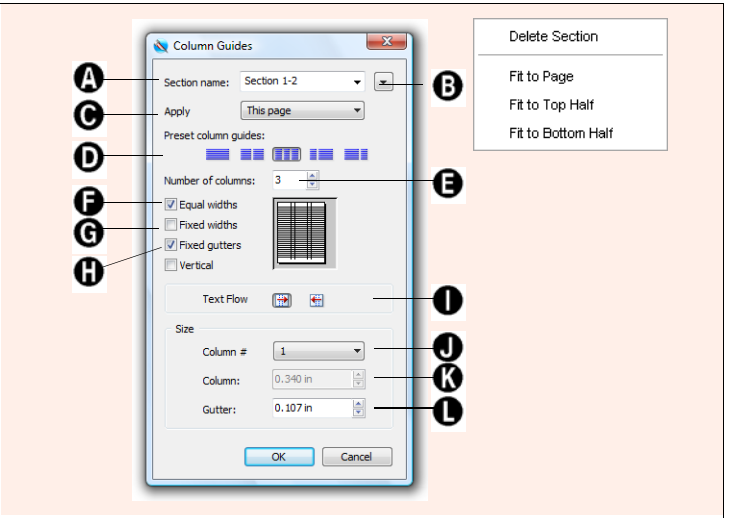
D Preset column guides: Select 1, 2, or 3 columns of equal width, or 2 columns with a wider column on the left or right.

E Number of Columns: Specify the number of columns; it overrides the preset column guides. Type the number of columns. The maximum number depends on the width of a section.

F Equal Widths: This option makes the column widths equal to the value in the Column box, and makes the gutter widths equal to the value in the Gutter box. Deselect this option to set the width of a specific column.

G Fixed Widths: This option prevents changes to the width of the columns.

H Fixed Gutters: This option prevents changes to the width of the column gutters.



If both Fixed Gutters and Fixed Widths are selected, you can't drag the column guides in a section to adjust the widths of columns or gutters.

Vertical: This option appears if "Enable two-byte script" is selected in the Configuration Center. It creates vertical columns for text in a section.

I Text Flow: To change the direction of the text flow, click the button that indicates left to right (the arrow points right) or right to left (the arrow points left).

Size

If Equal Widths is not selected, set widths for columns and gutters.

J Column #: Select the column by number. The widths of the selected column and gutter appear below. Columns are numbered from left to right.

K Column: Enter the width of the column specified in the Column # menu. If you select a preset column option, the Column value can't be changed unless Equal Widths is deselected first.

L Gutter: Enter the width of the gutter.

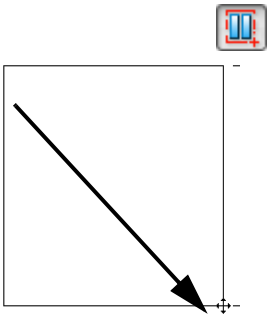
To create sections with the Column Guides command

1 Go to the page where you want to place a new section and choose Layout > Column Guides.

2 In the Column Guides dialog box, select a preset column arrangement or define custom columns. In the Apply To menu, choose where to place the new section. See "Column Guides dialog box" on page 28.10.

3 Click OK to create a new section with the current settings.

If the document contains no sections, Canvas creates one or more new sections, according to the Apply To setting.



Drag to create a section

To create a section with the Section tool

1 Select the Section tool. The cursor changes to a crosshair.

2 Drag the crosshair in the document. The Column Guides dialog box opens.

3 In the Column Guides dialog box, select options for the section. Select preset column guides or specify a custom setup (see "Column Guides dialog box" on page 28.10).

4 Click OK to create a new section with the current settings.

Modifying sections with the Section tool

Use the Section tool to move, resize, and modify sections.

Moving sections

To move a section, drag it with the Section tool. When you move a section, text objects contained in the section move with the section.

Resizing sections

To change the width of a section, drag one of its sides. To change the height of a section, drag the top or bottom border of the section. To change both dimensions at once, drag a corner of the section.

To adjust the width of columns in a section, use the Section tool to drag column guides. The Fixed Widths and Fixed Gutters options in the Column Guides dialog box limit how sections can be resized. If both options are selected, you can't drag the sides, columns, or gutters to resize a section; you can drag the top or bottom to make it longer or shorter.

Modifying sections

To change the settings of a section, double-click the section with the Section tool to open the Column Guides dialog box. Change the settings in the dialog box and click OK to apply the settings to the section.

- **To delete a section:** Double-click the section with the Section tool to open the Column Guides dialog box. Open the Section Options menu and select Delete Section. Click Yes in the confirmation message box.

✓ Tip
Unlike vector, paint, and text objects, you can't use the Selection tool to modify a section.

Applying section settings throughout a document

The Apply To setting controls how Canvas applies the column guides settings. When you click OK, Canvas modifies matching sections and creates new sections as necessary, depending on the setting selected in the Apply To menu.

Apply To menu options

- **This Page :** Applies the settings to the current page only. In a Publication with facing pages, it applies the settings to both (left and right) current pages.
- **All Pages :** Applies the settings to all pages in the document.
- **All Left Pages :** Applies the settings to all left-hand pages in a Publication with facing pages.
- **Left Page :** Applies the settings to the current left-hand page in a Publication with facing pages.
- **Right Page :** Applies the settings to the current right-hand page in a Publication with facing pages.
- **All Right Pages :** Applies the settings to all right-hand pages in a Publication with facing pages.

Displaying column guides

You can display or hide all the section column guides in a document.

- **To show column guides:** Choose Layout > Display > Show Guides when column guides are not displayed.
- **To hide column guides:** Choose Layout > Display > Hide Guides when column guides are displayed.

Typing text in a section

Use the Text tool to type text in a column in a section.

To type text in a section

1 Select the Text tool and click at the top of the first column in the section. An insertion point appears in the column at the height where you clicked. Canvas creates linked text objects in the section when you click in the section with the Text tool.

2 Begin typing. Text will wrap to the next line when it reaches the column edge. If you continue typing to the end of the column, text will flow to the next column in the section.

If a section has multiple columns, you can skip one or more columns by clicking in the section where you want the text flow to begin.

Flowing overset text into new text columns

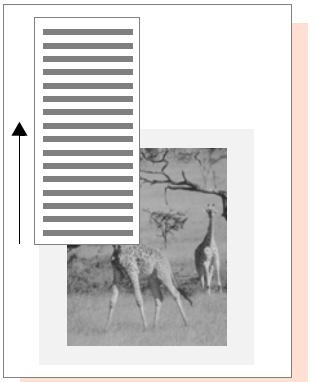
You can flow text when all the text won't fit in a text object.

An indicator tells you when an object has overset text. If you select a text object and drag a handle to reduce its size so all the text does not fit, the overset indicator appears.

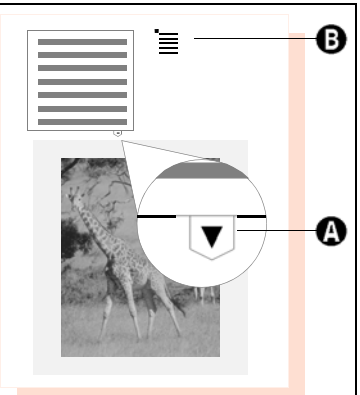
Click the flow symbol (**A**) to change the pointer to a text flow pointer (**B**). You can click or drag the pointer to create a new column for the overset text.

To flow text into a column with the same margins as the original column, click the text flow pointer where you want the upper-left corner of the new column to appear. To flow text into a column with different margins than the original column, drag the text flow pointer to specify the column width.

You can flow text between as many columns as you want.



Resizing a text column can result in overset text



*If you click the flow symbol (**A**), the text flow pointer (**B**) appears*



Clicking with the flow pointer creates a new column the same size as the original, and flows the overset text into it.

A plus sign replaces the overset sign on the first column, indicating that text flows to another column.

Flowing text from column to column

Create text flows so that text runs from one text object to another. You can flow text to a new text object when the text won't all fit in

an existing text object; the term "overset text" is used to refer to the text that doesn't fit in a text object or column.

You can also link empty text objects to create a preset text flow when you create templates for page layouts.

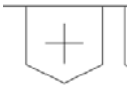
Flowing overset text to a new object

If you reduce the size of a text object, or change the text formatting, and all the text no longer fits in the text object, you can create another text object to hold the overset text. Doing this creates a link between the first and second text object, as shown in "Flowing overset text into new text columns," above.

Defining text flow bars & flow symbols



Text object has overset text



Text flows to another text object

A text flow bar is a solid line with a flow symbol. Text flow bars appear at the bottom of text objects when they contain overset text or are part of text flows. The flow symbol indicates the flow condition.

- An arrow indicates that a text object contains overset text.
- A plus sign indicates that text flows to another text object.
- The last object in a text flow does not display a flow bar unless text is overset.

- **To display text flow bars:** Choose Layout > Display > Show Text Flow Bars. To hide text flow bars, choose Layout > Display > Hide Text Flow Bars.

Linking text objects



After you create text objects with the Text tool or Text Object tool, use the Text Link tool to link the objects and create a text flow. When text you type or insert fills one object, it flows to the next linked text object. The linked text object can be on another page (in a Publication document) or another slide (in a Presentation document). You can link columns in a chain to create articles in a multipage document such as a newsletter. The Text Link tool is especially useful for creating templates for publications.

Note: Text objects created with the Text tool expand as needed when text is added. However, if you use the Text Link tool to link objects created with the Text tool, the objects no longer expand or contract to hold the text. Instead, they remain a fixed length, the same as objects created with the Text Object tool.

✓ Tip
If text boxes aren't visible, choose Display > Show Text Boxes in the Layout menu; this makes it easier to find and link empty text objects.

To link text objects

You can use this procedure to link an object containing text or an empty text object to other text objects.

1 With the Text or Text Object tool, create at least two text objects. Select the Text Link tool. The pointer displays the number "1".

2 Click the first text object — the object you want to flow *from*. The text link pointer changes to the number "2".

3 Click the next text object — the object you want to flow *to*. If you click anything but a text object, Canvas cancels the linking operation.

4 To link another text object to the chain, repeat the linking procedure; i.e., click the object text will flow from, and then click the object the text will flow to.

5 Press Esc when you finish.

Unlinking text objects



Use the Text Unlink tool to break the links between text objects that have been linked into a text flow.

- **To unlink one text object from the next object in the flow:** Select the Text Unlink tool and click the first text object.

Checking text flows



The Link Info tool lets you check text flows in a document. Use the tool to display arrows showing the flow of text among linked text objects.

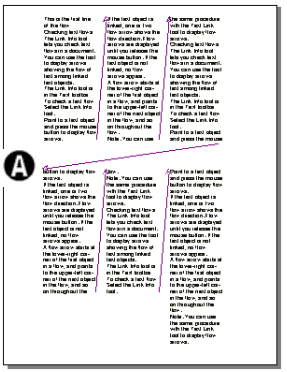
To check a text flow

1 Select the Link Info tool.

2 Point to a text object. Press and hold down the mouse to display flow arrows.

If the text object is part of a linked text flow, arrows show the flow sequence. Flow arrows are displayed until you release the mouse button. If the text object is not linked, no flow arrows appear.

A flow arrow starts at the lower-right corner of the first object in a flow, and points to the upper-left corner of the next object in the flow, and so on throughout the flow.



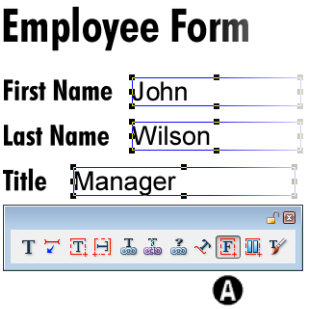
A Flow arrow

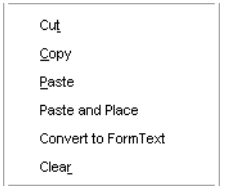
Text Form Field tool

The Text Form Field tool is ideal for numerous types of forms and documents. This feature is designed to assist you when you need to perform repetitive text entry tasks.

To navigate inside a form, first create the Text Form boxes and then place them in the appropriate locations. After placement, you can quickly move the cursor to each Text Form box by using the Tab key. All text that is entered into the Text Form box may be formatted in the same manner as it is in the regular Text box.

The Tab order of the Text Form boxes may be arranged and edited using the features of the Document Layout palette (see "Using the Document Layout palette," page 11.2).





To use the Text Form Field tool

1 Create your form.

2 Select the Text Form Field tool (A).

3 Click and drag in the document location to create Form Text boxes.

4 You may now jump to each form text object by pressing the Tab key. You may Tab in reverse order by pressing Shift-Tab.

To better track the Form Text boxes, we suggest that you apply a name to each box (see "Data tab settings" on page 16.35 for more information on naming objects in Canvas).

To convert a regular text box to a form text box

1 Select the regular text box and then right-click to open the context menu.

2 Select Convert to Form Text.

Convert Form Text objects to Normal text by opening the context menu and selecting Convert to NormalText.

CHAPTER 29

FORMATTING TEXT

You can control all aspects of text formatting in Canvas. This chapter explains how to specify font, font styles, type size, character position and scaling, kerning, letter and word spacing, paragraph alignment and spacing, and hyphenation. This chapter also explains how to select text for formatting and how to apply format settings.

You can also save format settings as named character and paragraph styles so you can use them again (see "Working with type styles," page 30.1).

Selecting text and objects

The following section is a review of some basic selection techniques used to format text.

To select and deselect text objects

Select text objects the same way you select other objects in Canvas.

- **To select a single object:** Use a Selection tool to click the text object or drag a selection rectangle around the object.
- **To select multiple objects:** Shift-click text objects with a Selection tool. You can also drag a selection rectangle around all the objects you want to select.
- **To deselect one object:** Press Shift and click the object. Other objects remain selected.
- **To deselect all objects:** Press Esc or click an area of the screen where there are no objects.

To select all text objects

To select all text objects with a single command, select the Text tool and then choose Edit > Select All.

Illustration This procedure selects all text objects on the current layer.

Publication This procedure selects all text objects on the current page or current two-page spread.

Animation This procedure selects all text objects on the current layer of the current frame.

Presentation This procedure selects all text objects on the current layer of the current slide.

To select text within a text object

Before you can select specific characters, words, lines, or paragraphs, the text object must be in edit mode.

1 To place an object in edit mode, use one of these methods:

- With a Selection tool, double-click the text object. The pointer becomes an I-beam and an insertion point appears in the text.
- Select the Text tool. The pointer becomes an I-beam. Click the I-beam within the text. An insertion point appears.
- For bound text only, click the Path Text tool. The Path Text tool is in the Text tools palette (see "Tool palettes," page 9.6).

2 Use one of the following methods to highlight the text you want to select.

To	Do this
Select a continuous block of text	Drag the I-beam over text.
Select all text between the insertion point and another location	Press the Shift key and click where you want the selection to end.
Deselect text between the insertion point and another location within the selection	Press the Shift key and click within the highlighted text.
Select a word	Double-click the word with the I-beam pointer.
Select a line of text	Triple-click the line with the I-beam pointer.
Select all text in the text object	Choose Edit > Select All.
Deselect all highlighted text	Click anywhere in the text object or layout. Clicking outside the selected text object creates another text object at that location. Choosing another tool in the Toolbox ends text edit mode.

Working with linked text objects

When you link text objects so text flows from one column to another, you can select all of the text in the flow. This lets you apply formatting changes and text styles to all the text at once, even if the columns are on separate pages or slides.

For information on linking text objects, see "Flowing text from column to column" on page 28.13.

To select all text in a flow

1 Select the Text tool and click one of the linked text objects to place the text object in edit mode and set the insertion point in the text. You can also double-click a text object with the Selection tool to enter edit mode.

2 Choose Edit > Select All. Canvas highlights all the text in the linked text objects.

3 Click outside any text object or press Esc to deselect the text.

Note: When text is highlighted, anything you type replaces the highlighted text. If you select a long text flow across several columns, and then type a single letter or press the Spacebar, all the highlighted text is erased. If this happens, choose Edit > Undo or Window > Palettes > Undos.

To apply type formatting to a text flow

Once you select the text in a flow, you can apply formatting changes using the Properties bar, Type palette, or Text menu commands. Of course, changes that you make to selected text on other pages or slides will not be shown until you switch to the other pages or slides.

Applying text formats

✓ Tip
You must apply or save the new settings before clicking the pointer anywhere outside the Type palette. If you don't, the settings will be lost.

Canvas provides three ways to format text: the Properties bar, Text menu, and Type palette. The Type palette is also used when you create and save paragraph and character styles (see "Working with type styles," page 30.1). The Type palette can be used to apply the paragraph and character styles.

When you use menu commands or the Properties bar to apply formatting, the settings you choose affect the document immediately. However, with the Type palette, the settings take effect when you click Apply. You do not have to click Apply before switching to

another tab within the Type palette; Canvas remembers all changes and applies them simultaneously with one click.

- **To apply character formatting to existing text:** Select the characters you want to change. Choose the formatting you want to apply.

- **To apply paragraph formatting to existing text:** Select text in the paragraph you want to change, or place the insertion point anywhere in the paragraph. Choose the formatting you want to apply.

To establish formatting for new text objects

When you create a new text object, Canvas applies a preset format to text you type. You can define the preset format for new text objects. To establish or modify the preset, follow these steps:

1 Be sure you have not selected any text or text objects, and no text objects are in edit mode. To deselect all objects, press Esc twice.

2 Use one of the methods to choose formatting options. If you use the Type palette, be sure to click the Apply button after making changes.

Canvas uses the specified settings to format new text objects that you create.

To change formatting before typing new text

Set the format for text you are about to type — without changing the preset format for new text objects.

1 Place the text object in edit mode (see "To select text within a text object," page 29.2). The pointer should appear as an I-beam and an insertion point (a flashing vertical line) should appear in the text.

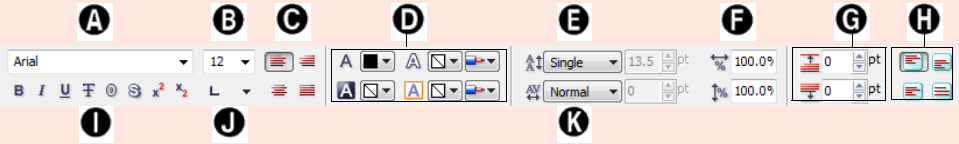
2 Place the insertion point by clicking the I-beam where you want the new formatting to begin.

3 Use one of the methods to choose formatting options. If you use the Type palette, be sure to click the Apply button after making changes.

4 Begin typing. The text appears with the chosen formatting. If you begin typing in the middle of a paragraph, only the new text has the new settings.

Formatting text with the Properties bar

When using various tools to create or select text objects, the text formatting options appear in the Properties bar. Format your text using the Properties bar options in addition to the Type palette (Text > Type) and Text menu commands.



Text formatting options

A Font. Select one from the menu. The font applies to selected text objects, highlighted text, or the next text you type.

B Size. Select a size or enter one and press Enter. The size applies to selected text objects, highlighted text, or the next text you type.

C Horizontal alignment. Select left, center, right, or justify.

D Text attributes. Use the pop-up palettes to apply a text fill ink, text pen ink, background ink, and text frame ink. For the text stroke and frame stroke, you can also assign a pen width.

E Leading. Select an option or enter a value and press Enter.

F Scaling. Specify percentages (horizontal & vertical) by which you want to scale the current type size.

G Space. Insert spacing before or after a paragraph by entering values in the fields.

H Vertical alignment. Select top, bottom, center, or justify.

I Text styles. Click buttons to assign standard text styles.

J Tab. Select left, right, center, decimal, or comma from the menu and then click in the ruler to set the tab (see "Positioning tabs").

K Kerning. Select an option from the menu or enter a value and press Enter.

Specifying fonts

Select a font using any of the methods (see "Formatting text with the Properties bar," page 29.5 and "Using the Type palette," page 29.13).

To choose a font from the menu

1 Choose Text > Font. A checkmark appears next to the current font.

2 Choose a font in the submenu. The font setting changes.

✓ Tip

In Windows, the Font menu may also be set to display in single or multi-column mode (see "Windows-only type preferences," page 12.16).

The Fonts palette

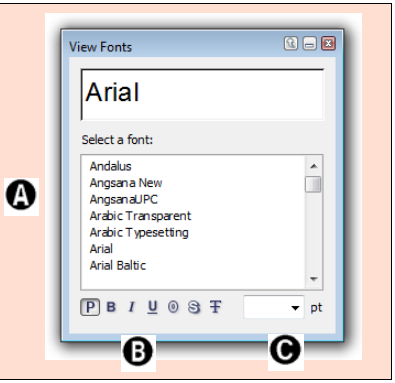
Use this palette to quickly view and apply fonts, font styles, as well as type size.

To open the palette, choose Text > Font > View Fonts or Window > Palettes > View Fonts. Use the scrollbar to view the available fonts.

A To select a font, click the font name in the list.

B To apply appearance font styles, click the style buttons.

C To change type size, enter a size in the field or select one from the menu.



To apply font styles using the Type palette

Open the Type palette. Choose Text > Type or Window > Palettes > Type.

1 Click the Character tab to bring it to the front.

2 Click the Style buttons to change appearance styles.

3 Choose Upper, Lower, Normal, Title, or Small Caps in the Case menu.

4 Choose Normal, Superscript, or Subscript in the Baseline menu. If you are applying superscript or subscript, specify the distance from the baseline (in points) in the text box. Normal baseline always has an elevation of zero points.

5 Click Apply to implement the font style settings.

✓ Tip

Clicking the Plain button turns off all active appearance styles. Clicking an active appearance style button turns the style off.

Tips for font installation and use

On Windows systems, Canvas uses fonts installed in the Fonts folder. You can access the Fonts folder via the Control Panel. Use the Install New Font command in the File menu to add fonts to your system. You can also drag and drop font files or font file shortcuts to the Fonts folder. To specify that you want to see only TrueType fonts in your programs, you can use the Options command in the Views menu.

Canvas can use fonts that are properly installed as described above. If fonts that you use in another application are not available in Canvas, that application probably stores its fonts in a different location and has its own font management capabilities.

Guidelines for choosing fonts

There are three types of fonts widely available: PostScript, TrueType, and OpenType. You can't distinguish the three types in the Canvas menus; however, you should be aware of the different types of fonts you have, because each font is best suited for particular purposes.

PostScript Type 1 fonts are the standard for imagesetting. PostScript produces high-quality printed text. For onscreen display, however, PostScript needs screen fonts. If the screen font for a particular point size is not installed, the text appears jagged onscreen. To compensate for this, you can use Adobe Type Manager (ATM) software. If a screen font is unavailable, ATM uses the PostScript printer font for both screen display and printing. In addition, ATM lets you print PostScript fonts to non-PostScript printers.

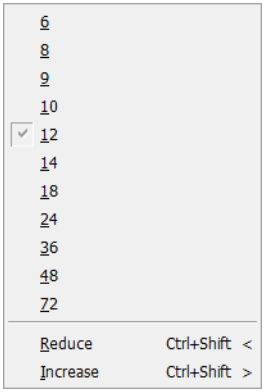
TrueType fonts are suitable for most desktop publishing purposes when you are printing in-house. TrueType fonts produce good quality printed text, and the onscreen appearance closely resembles the printed output, even when the screen font is unavailable.

OpenType fonts are the solution to font sharing across platforms. Canvas offers basic support for OpenType fonts, including vertical glyph substitutions in East-Asian fonts.

When typing in Canvas, all entered letters are not stored as Unicode characters, although they are exported as such in some of the export formats; e.g., HTML or SVG. However, the current script/code-page of the font is used (obtained from the system). Thus, the user can type in his regional alphabet if the user has the right font that supports it; e.g., Arial-CE for a Central European languages or MSMincho for Japanese.

Specifying type size

Choose from standard type sizes using either the Properties bar, Text menu, Type palette, or Fonts palette. To reduce or increase a font size in 1-point increments, choose Text > Size. You can also increase/decrease text size in 1-point increments by using the keyboard commands Ctrl+Shift+< (Reduce) or Ctrl+Shift+> (Increase).



Text > Size submenu

To set type size using menu commands

1 Choose Text > Size. A checkmark appears next to the current type size.

2 Choose one of the sizes in the submenu. The size setting applies immediately.

Applying font styles

✓ **Tip**
Styles can be chosen and applied with either the Properties bar, Text menu, or Type palette.

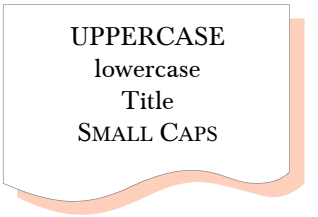
Font styles are different character types, such as bold, italic, or superscript, as well as capitalization modes (see "Types of font styles," page 29.8).

Font styles can be categorized into three groups: appearance, capitalization, and baseline position. You can apply multiple appearance styles to the same text; however, you are restricted to one each of capitalization and baseline styles.

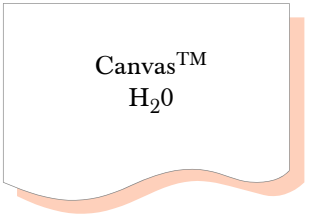
Types of font styles



Appearance styles



Capitalization styles



Baseline shift:
"TM" superscripted
"2" subscripted

Appearance styles

✓ **Tip**
Applying the Plain setting removes other font styles that have been applied to revert text to its standard appearance.

Appearance styles include plain, bold, italic, underline, outline, shadow, small caps, and strikethrough. Except for the Plain option, use as many of these appearances as you like on the same text. Depending on the typeface, using certain styles might not have the desired effect, and can even make text appear ugly when printed; e.g., applying bold to a heavy weight typeface can make characters look too thick. Similarly, applying italic to an already italicized font might exaggerate the slant of the characters.

Capitalization styles

Capitalization styles format text as uppercase, lowercase, or title (first letter of each word capitalized) styles. Apply one of these capitalization styles to the same text: Normal, Upper, Lower, and Title.

Baseline position

The baseline of text is the imaginary horizontal line on which characters sit. To position characters above (superscript) or below (subscript) the normal baseline, shift the baseline position.

Canvas does not change the type size of superscript and subscript text. Unless you reduce the type size of shifted text, the line size increases by the amount of the baseline shift. As a result, the line spacing might change, depending on the leading setting. If you don't want the line spacing to change, reduce the type size of shifted text by the same amount (or more) of the baseline shift, or you can specify leading in points (see "Setting line and paragraph spacing," page 29.15).

If you use the Style submenu to change baseline position, you can choose either Superscript or Subscript to shift text the baseline by roughly 27 to 33 percent of point size of the line; e.g., superscript text in a line of 12-point text appears 4.0 points above the normal baseline.

If you use the Character tab of the Type palette to change the baseline position, you can specify the exact distance (in points) of the text above or below the normal baseline.

To apply font styles using menu commands

1 Choose Text > Style to open the Style submenu. Checkmarks appear next to the active styles.

2 Choose the font style you want to apply. Choosing an active style turns off the style. Canvas implements the setting immediately.

Specifying spacing between characters

Kerning affects the amount of space to the right of one or more characters. Kerning options can be chosen and applied with either the Properties bar, Text menu, or Type palette (see "Formatting text with the Properties bar," page 29.5 and "Using the Type palette," page 29.13).

Tighten kerning to place characters closer together, and loosen kerning to space characters farther apart. Apply kerning settings before typing, or change the kerning for one character, a selection of text, or an entire text object.

Default kerning

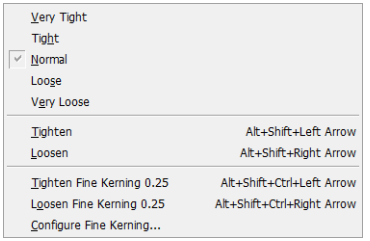
Kerned manually



Headlines often need manual kerning for visual balance

Canvas can also adjust letter and word spacing for paragraphs following minimum, maximum, and desired guidelines that you set (see "Adjusting letter and word spacing" on page 29.22).

Note: Canvas does not apply kerning to text characters based on kerning pairs defined in a particular font. Kern individual characters by placing the insertion point and choosing Text > Kerning or using the Kerning controls in the Properties bar or on the Character tab of the Type palette.



Kerning options

In the Kerning submenu, you can choose a standard kerning amount: Very Tight, Tight, Normal, Loose, and Very Loose.

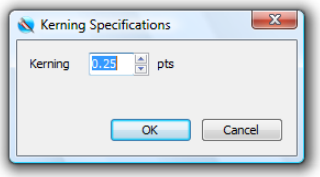
Kern characters in half-point increments using the Tighten and Loosen commands. Also, set a fine kerning amount using the Configure Fine Kern command (see "To set the fine kerning amount," page 29.11). Then, use the Tighten Fine and Loosen Fine commands to kern characters by that specified amount.

To select kerning amount

1 Choose Text > Kerning and select one of the following options:

Option	Result
Tight	8% less space than normal between characters
Very Tight	14% less space than normal between characters
Normal	Default spacing
Loose	8% more space than normal between characters
Very Loose	14% more space than normal between characters
Tighten	Reduce kerning by 0.5 points. You cannot tighten kerning to less than the width of one character
Loosen	Increase kerning by 0.5 points

Option	Result
Tighten Fine	Reduce kerning by amount specified in the Kerning Specifications dialog box
Loosen Fine	Increase kerning by amount specified in the Kerning Specifications dialog box



To set the fine kerning amount

1 Choose Text > Kerning > Configure Fine Kern. The Kerning Specifications dialog box opens.

2 Specify the amount of kerning (in points) for the Tighten Fine and Loosen Fine commands to apply.

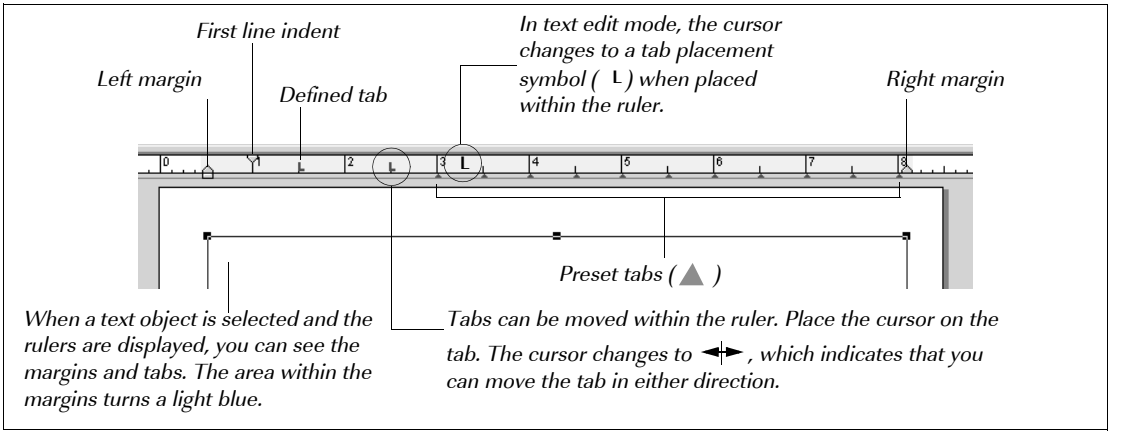
3 Click OK.

Positioning tabs

Tip
The document ruler shows tab positions for one selected object. You cannot set tabs for multiple selected text objects.

You can add tabs as well as adjust margins and indents in the document ruler while a text object is selected or you are in text edit mode. To indicate a selected a text object or text edit mode, the ruler turns light blue. Margin icons and preset tabs appear as well.

A new text object has tab stops at half-inch intervals beginning at the left border of the text object. You can move the insertion point to each of these tab positions by pressing the Tab key. In addition, you can edit a default tab by double-clicking it on the ruler.



To set tabs

Setting a tab moves the default tab stops to the right.

- **To reposition a set tab:** Drag the tab marker to a new position.

You have two ways to set a tab position:

- Select a tab definition from the Tab menu in the Properties bar and click in the ruler. A new tab applies to selected text objects, the current paragraph, or all highlighted paragraphs.
- Click in the ruler first and then edit the tab definition.



Tab menu

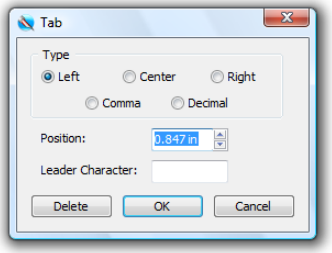
Left. The left edge of the text is flush with the tab position.

Center. Text is centered around the tab position.

Right. The right edge of text is flush with the tab position.

Decimal. The first decimal (or period) in a string of text aligns directly under the tab position; e.g., if you align "123.45.678" to a decimal tab, the decimal between the "3" and "4" will fall under the tab position.

Comma. The first comma in a string of text aligns directly under the tab position.



Double-click on a tab in the document ruler. The Tabs dialog box opens to edit the tab you selected.

To edit a defined tab

1 Double-click on the defined tab in the ruler. The Tab dialog box opens.

2 Define the tab using the Type, Position, and Leader controls.

3 Click OK.

Position Specify the distance between the tab and the left border of the text object.

Type Change the alignment setting of a tab by choosing one of these options.

Leader Character Use a character to fill tabbed space. To adjust the spacing of the leader character, use kerning options. To specify a leader character, type a character in the text box.

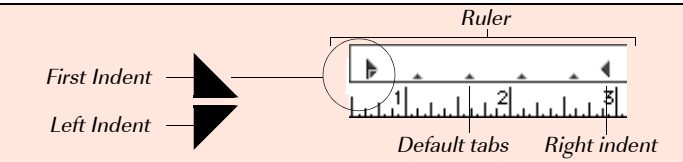
Setting indents

Set the right and left indents of a selected text object by dragging the Right and Left Indent markers in the ruler

To indent the first line of a paragraph, drag the First Indent marker to the desired position in the ruler.

To set the distance between the left border of a text object and the left margin of a paragraph, drag the Left Indent marker.

To set the distance between the right border of a text object and the right edge of a paragraph, drag the Right Indent marker.



To delete a defined tab

1 Double-click on the defined tab in the ruler. The Tab dialog box opens.

2 Click the Delete button.

3 Then click OK.

You can also select the tab in the ruler and drag it off the ruler either up, down, left, or right.

Using the Type palette

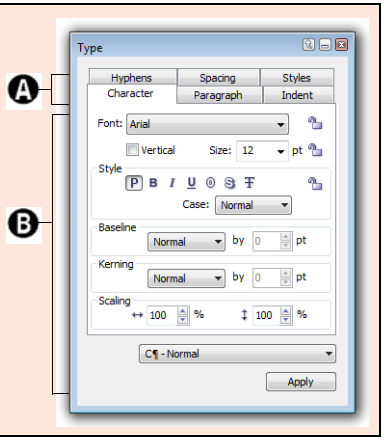
To open the Type palette, choose Text > Type. The Type palette contains six tabs: Character, Hyphens, Indents, Paragraph, Spacing, and Styles.

When you adjust settings in the Type palette, the new settings don't take effect until you click Apply. Be sure that you don't click outside the palette before applying the settings, or they will be lost.

A Click a tab to bring it to the front.

B Configure the settings you want and click Apply to implement them.

For information about creating and applying type styles, see "Working with type styles," page 30.1)



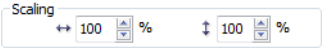
Horizontal and vertical text scaling

Canvas provides independent control of horizontal and vertical scaling of text. Using this feature, you can stretch characters to create extended and condensed letterforms.



To scale an entire text object, you can also select the text object, press Alt and drag a selection handle. Depending on the direction of the drag, Canvas scales text horizontally or vertically.

To scale characters using the Type palette



1 To specify the vertical and horizontal scale of characters, enter percentages in the Scale boxes. To scale proportionately, enter the same percentage in both boxes. Canvas applies these percentages to the point size displayed in the Size box.

2 Click Apply to implement the scaling settings.

Canvas doesn't limit the percentage you can scale characters; however, extremely high and low settings can distort some fonts and make them unreadable. In addition, scaling requires significant amounts of memory for text display, which might cause performance problems for some systems.

Applying paragraph formatting

In Canvas, you can control paragraph attributes, such as justification and leading. Paragraph attributes affect entire paragraphs, even if you select a single character, or place the insertion point anywhere in the paragraph. If you select text in multiple paragraphs, all the paragraphs will be affected.

Paragraph-level formatting includes leading and paragraph spacing, indents, tabs, alignment (justification), automatic letter and word spacing, hyphenation, and widow and orphan controls.

Setting line and paragraph spacing

Using the Text menu, Properties bar, or Type palette, adjust the spacing, or leading, between lines of text. You can also insert extra space before and after paragraphs using the Type palette.

Canvas provides two methods of specifying leading: ratio (or percentage) and point size.

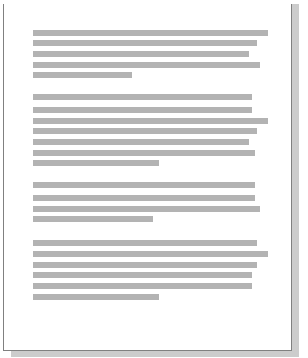
- **Ratio and percentage leading :** are based on the normal leading of the largest type size in the preceding line. The normal leading is usually designed to be slightly larger than the point size of the type; e.g., a single line of 12-point text usually occupies about 15 points of vertical space when you specify 100% or Single Space leading. Therefore, double spaced, or 200%, leading for 12-point text increases the line spacing to about 30 points.

- **Leading specified in points :** is independent of the type size and normal leading of the typeface. The space from baseline to baseline is exactly the number of points specified, regardless of the size of the type. Using point size leading lets you maintain consistent line spacing, and fit text to specific space requirements; e.g., you have 10 lines of text, and exactly 120 points of vertical space to place the text. To make the text fit, set the leading to 12 points.

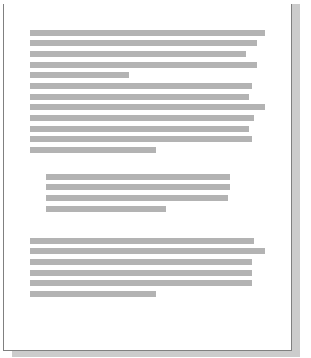
✓ **Tip**
The text settings in the Properties bar provides the same options as the Leading submenu.

Choose Text > Leading to set Single, $1^1/_2$, or Double Space leading. You can also choose the Tighten or Loosen commands to fine-tune the current leading in 0.5-point increments. You can tighten and loosen the leading repeatedly, but the line spacing cannot be less than zero.

The Paragraph tab of the Type palette lets you adjust the leading by a specified percentage or point size. You can also add space between paragraphs by specifying additional spacing in points on the Paragraph tab of the Type palette.



A page of text with "after paragraph" spacing



A page of text that does not have paragraph spacing, but uses both "before" and "after paragraph" spacing for block quotes

To set leading using menu commands

1 Choose Text > Leading. A checkmark appears next to the current leading setting.

2 Choose a standard leading in the submenu, or choose Tighten or Loosen. Canvas applies the setting immediately.

To set leading in the Type palette

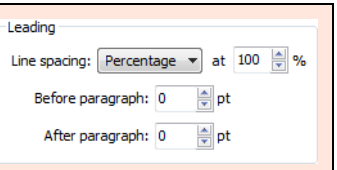
Click the Paragraph tab of the Type palette. After configuring the settings, click Apply to implement them.

Percentage leading. To set the leading using a percentage of the line size, choose Percentage in the Line Spacing menu and enter an amount in the At box. A leading of 100% is the same as the Normal setting in the Text > Leading submenu. Double space is 200%, and 1.5 space is 150%.

Point size leading. To specify leading in points, choose Points in the Line Spacing menu and enter an amount in the At box. Although each font's standard leading might be different, normal leading is generally between 110% and 125% of the largest type size on the line; therefore, for 10-point type, normal leading is approximately 12 points.

Before paragraph. To insert space before the first line of a paragraph, specify the number of points in the Before paragraph box. This option does not apply to the first paragraph in a column.

After paragraph. To insert space after the last line of a paragraph, specify the number of points in the After paragraph box. Canvas inserts space after every paragraph, including the last paragraph in a column.



Note: Force a line break without creating a new paragraph by pressing Shift-Return. See "To control line breaks," page 29.16.

To control line breaks

"Soft" returns are forced line breaks which do not create new paragraphs.

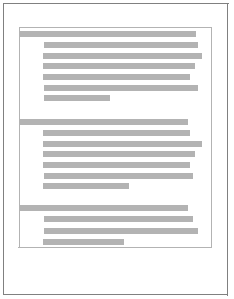
1 Place the insertion point where you want the soft return.

2 Press Shift+Enter. Text to the right of the soft return moves to the next line.

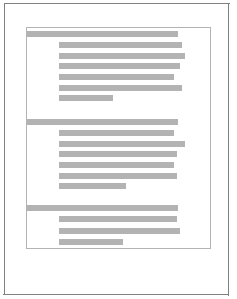
- **To view soft return symbols:** Choose Layout > Display > Show Text Invisibles.
- **To hide soft return symbols:** Choose Layout > Display > Hide Text Invisibles.

Setting indents

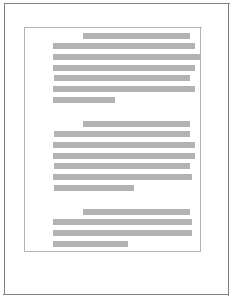
You can set the amount of space between the left and right borders of a text object and the edges of each paragraph using the Indents tab of the Type palette or the Properties bar. For text wrapped around an object, you can also use the Indents tab to set the distance between the edge of the object and the text.



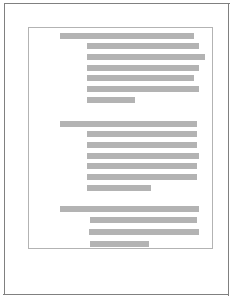
Left 1 in.



Left 1 in., Right 1 in.



First line 1.5 in., Left 1 in.



First line 1 in., Left 1.5 in

Note: The Properties bar shows indent positions for one selected object at a time; therefore, you cannot use it to set indents for the preset format or for multiple selected objects.

To set indents on the Type palette

Click the Indents tab of the Type palette.

Left. To specify the distance between the left border of a text object and the left indent of a paragraph, enter the distance in the Left box.

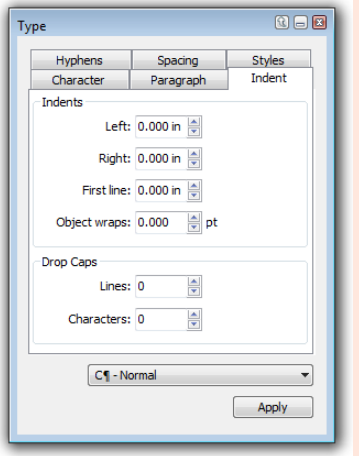
Right. To specify the distance between the right border of a text object and the right indent of a paragraph, enter the distance in the Right box.

First Line. To specify a different indent for the first line of a paragraph, enter the distance in the First Line box.

Canvas measures the first line indent from the left border of the bounding box.

Object Wraps. To specify the distance between an object and the edge of text wrapped around or inside that object, enter the number of points in the Object Wraps box.

Click Apply to implement the indent settings.

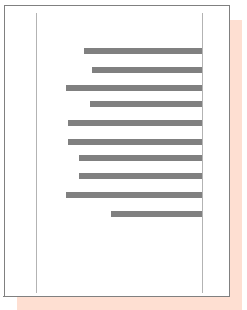


Paragraph alignment

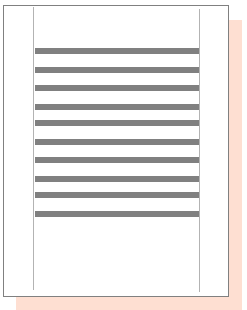
Canvas aligns text to the indents of a text object. Canvas has four alignment, or justification, settings: flush right, flush left, full (flush with both right and left indents), or centered. You can set alignment in either the Text > Justification submenu, Properties bar, or Paragraph tab of the Type palette.



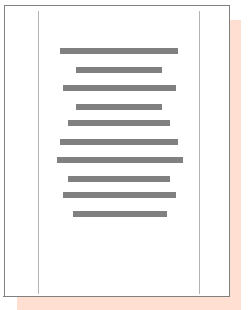
Left-justified



Right-justified



Full-justified



Center-justified

✓ Tip
You can set letter- and word-spacing parameters to improve the appearance of text (see "Adjusting letter and word spacing" on page 29.22).

Note: Full justification may create wide letter or word spacing, especially in narrow text columns. Other justification settings (without hyphenation) might appear too ragged on one or both sides.

To set justification using menu commands

1 Choose Text > Justification. A checkmark appears next to the current justification setting.

2 Choose an alignment option in the submenu. Canvas applies the justification setting immediately.

To set justification using the text settings in Properties bar

1 Drag the Text tool in the layout area or select a text object to make the text settings appear in the Properties bar.

2 Click a justification button. Canvas applies the justification setting immediately.

To set justification using the Type palette

1 Open the Type palette and click the Paragraph tab to bring it to the front.

2 Click a Justification button.

3 Click Apply to implement the justification setting.

Using vertical justification

Canvas can align text relative to the top and bottom borders of text objects. Canvas has four vertical justification, or alignment, settings: Top, Bottom, Vertical Full, and Vertical Center.

✓ Tip
There must be space in the text object to use vertical justification, not including space created by empty paragraphs. The text objects must be created with the Text Object tool, not the Text tool.

Vertical justification applies to an entire text object. To change the setting, select one or more text objects. Choose Text > Justification and choose a vertical justification setting in the submenu. A checkmark appears next to the selected setting.

Top vertical justification is the default setting for new text objects. Copying or duplicating text objects preserves their vertical justification settings; however, if you copy a text selection and paste it into another object, the text follows the vertical justification of the text object in which you paste it.



Vertical justification settings

Choose vertical justification settings in the Justification submenu.

Top Sets all lines of type starting from the top of a text object. This is the traditional vertical alignment for text objects; e.g., if a text object contains three lines of type, they appear at the top of the text object. Spacing between lines is controlled by the Line Spacing, Before Paragraph, and After Paragraph settings of the text.

Vertical Center Sets all lines of type so they are spaced evenly above and below the vertical center of a text object. If a text object contains three lines of type, for example, the lines appear at the center of the text object. Spacing between lines is controlled by the Line Spacing, Before Paragraph, and After Paragraph settings of the text.

Bottom Sets all lines of type at the bottom of the text object. If a text object contains three lines of type, for example, the lines appear at the bottom of the text object. Spacing between lines is controlled by the Line Spacing, Before Paragraph, and After Paragraph settings of the text.

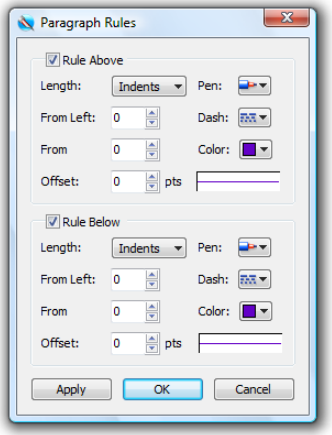
Vertical Full Sets all lines of type so they are evenly spaced between the top and bottom borders of the text object. If a text object contains three lines of type, for example, one line appears at the top, one appears at the center, and one appears at the bottom of the text object. Because it distributes type from the top to the bottom of a text object, Vertical Full justification can cause very wide spacing between lines if a large text object contains a little text. You can drag a handle at the top or bottom of a text object to adjust its height and alter the spacing between lines of text.

Paragraph rules

✓ Tip
The Paragraph Rules command is not available unless a text object is in edit mode.

Paragraph rules are horizontal lines that Canvas draws above a paragraph, below a paragraph, or both. You can select pen type, dash, color, length, and offset for paragraph rules.





To apply paragraph rules

1 Place the insertion point or make a selection in the paragraph. You can highlight multiple paragraphs to select them.

2 Choose Text > Rules. The Paragraph Rules dialog box opens.

3 In the Paragraph Rules dialog box, select Rule Above or Rule Below. You can select either or both options. The options for Rule Above and Rule Below can be set independently.

4 Select rule options, then click Apply to preview the rules.

5 Click OK to apply the rules and close the dialog box.

Paragraph Rules options

When you configure a paragraph rule, a preview of the rule appears in the box in the Rule Above or Rule Below section of the Paragraph Rules dialog box.

Rule Above and Rule Below Draws rules above or below selected paragraphs. Both can be selected. The size, placement, and attributes of rules are based on the settings in the dialog box. If a paragraph has rules and you clear the checkboxes, Canvas removes the rules.

Length Use the menu to choose an option for the length of paragraph rules.

- **Indents :** sets the rule length based on the values in the From Left and From Right boxes. These values set the distances from the ends of the rules to the right and left borders of the text object (independent of paragraph indents).
- **Text:** makes the rule length equal to the first line (for rules above) or last line (for rules below) of a paragraph. The From Left

and From Right options are not available when the Text option is selected.

Offset Enter a value in points to space the rule away from the adjacent line of text. The position for rules above is measured from the descenders of the last line of the previous paragraph. For rules below, the position is measured from the descenders of the last line of the current paragraph. You can enter a minimum value of -10 points to move the rule closer to the text. You can enter a maximum value of 72 points to move the rule away from the text.

Pen Select a stroke for the rule from the Pen pop-up palette. You can select a solid pen, neon, or parallel stroke.

Dash To apply a dash to the rule, select a dash style from the Dash pop-up palette.

Color Select a color for the rule from the Color pop-up palette.

Adjusting letter and word spacing

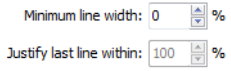
Depending on the type of justification you choose, you might want to adjust letter and word spacing to reduce raggedness or eliminate unusual spacing; e.g., left-justified paragraphs might appear too ragged on the right edge, and full-justified paragraphs might have large spaces between characters and words.

You can specify a minimum line width for a paragraph to reduce raggedness. In addition, Canvas has letter- and word-spacing parameters to let you specify minimum, maximum, and desired spacing guidelines.

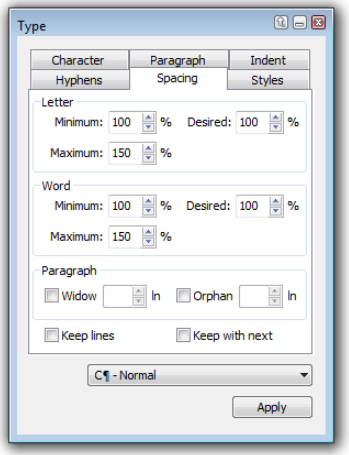
To adjust letter and word spacing

1 Depending on how you want the letter and word spacing settings to apply, do one of the following:

- **To change existing text:** Select the paragraphs or text objects. To set spacing for only one paragraph, place the insertion point anywhere in the paragraph.
- **To set the spacing before typing a new paragraph:** Place the insertion point at the beginning of the paragraph.
- **To apply the spacing settings to the preset format:** Deselect all objects.



Spacing settings on the Paragraph tab



2 Open the Type palette by choosing Text > Type.

3 Click the Paragraph tab to bring it to the front, if necessary.

4 Depending on the type of justification applied to the text, use the following options on the Paragraph tab:

- For right-, left-, and center-justified text: To set the "Minimum line widths," enter a percentage in the text box. The percentage tells Canvas to adjust letter and word spacing so that each line is at least as wide as specified; e.g., if you create a two-inch wide, left-justified paragraph and set the minimum line width to 75%, Canvas adjusts the spacing so that each line is at least 1.5 inches wide. Only the last line in a paragraph is unaffected by the "Minimum line widths" setting.
- For full-justified text: To tell Canvas when the last line of a paragraph is wide enough to be justified (flush with both right and left margins), enter a percentage in the "Justify Last Line Within" box; e.g., you create a two-inch wide, full-justified paragraph and tell Canvas to justify the last line within 75%. If the last line is less than 1.5 inches wide, Canvas does not justify the line. However, if the last line is wider than 1.5 inches, Canvas justifies the line.

5 To set letter and word spacing parameters, click the Spacing tab to bring it to the front, if necessary. Set the minimum, desired, and maximum spacing in the Letter and Word areas. Specify each setting as a percentage of the current spacing. The desired spacing must be greater than the minimum and less than the maximum. The maximum spacing cannot be less than the minimum.

Canvas will try to adjust spacing to the desired percentage, but might not be able to depending on minimum line width and justification settings. In these cases, Canvas will then try to adjust the spacing within the minimum and maximum percentages you specify. However, if the minimum and maximum spacing parameters are still in conflict with minimum line width or full justification settings, Canvas will ignore the spacing parameters.

To change the spacing of a paragraph by a set amount, you can set the minimum, desired, and maximum percentages to the same value. This has a similar effect to kerning the entire paragraph.

6 Click Apply to implement the settings.

✓ Tip

If you applied kerning to characters within the selection, Canvas adjusts the spacing as a percentage of the kerning.

Automatic hyphenation

Canvas can insert a hyphen in the last word of a line to give text objects a more balanced, even appearance. You can also control the hyphenation properties so that Canvas only hyphenates under specific circumstances. Hyphenation settings apply to entire paragraphs. To hyphenate a specific word, you can manually insert a hyphen.

Hyphenation settings on the Type palette

Click the Hyphen tab to bring it to the front. Turn hyphenation on and configure the following settings.

After word beginning. Specify the minimum number of letters that must precede a hyphen.

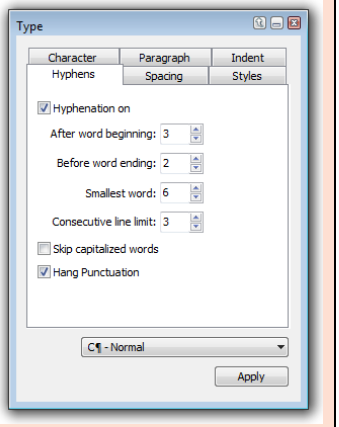
Before word ending. Specify the minimum number of letters that must follow a hyphen.

Smallest word. Specify the minimum number of letters that a word must have to be hyphenated.

Consecutive line limit. Specify the number of consecutive lines that can end in hyphens; e.g., if four consecutive lines could end in hyphens but the limit is three, Canvas does not hyphenate the last word of the fourth line.

Skip capitalized words. Turn this option on to prevent proper names and other words beginning with a capital letter from being hyphenated.

Click Apply to implement the hyphenation settings.



Specifying text flow options

You can set text flow options to avoid leaving just a few lines at the top or bottom of a column of flowed text. The term *widow* describes the first line of a paragraph that appears at the bottom of a column, and *orphan* refers to the last line of a paragraph that appears at the top of a column. Canvas can prevent widows and orphans in a text flow by moving the page or column break higher and sending lines to the next page or column. In addition, you can specify that all lines in a paragraph stay together, or that certain pairs of paragraphs always remain together in the same column.

To modify a column break in a particular paragraph, keep all lines in a paragraph together, or keep two paragraphs together, you should change the text flow settings for the specific paragraph only. In most cases, you won't want these settings to apply to every column break.

Note: Although you can specify widow and orphan settings for individual paragraphs, you should apply these settings to entire objects. This way, as you edit and move paragraphs, the location of the column break can change without causing widows and orphans.

To prevent widows and orphans

1 Open the Type palette and click the Spacing tab. Configure the widows and orphans settings (described next).

Widow and orphan settings

Use the Paragraph area of the Spacing tab to configure widows and orphans protection properties. If an "X" appears in a checkbox, that feature is active.

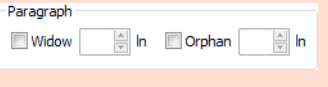
Widow. Turn on to activate widow protection.

Specify the minimum number of lines that can appear in the last paragraph of a column.

Orphan. Turn on to activate orphan protection.

Specify the minimum number of lines that can appear at the top of a column in a linked flow.

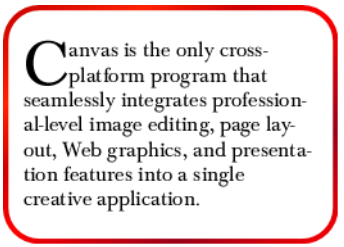
Keep all lines. To prevent Canvas from inserting a column break in a paragraph, turn on this option. This prevents widows and orphans, but might leave a lot of blank space at the bottom of a column.



Keep with next. To prevent two paragraphs from being separated by a column break, turn on this option. This option is useful for keeping a one-line paragraph, such as a heading, together with its section.

Click Apply to implement the text flow settings.

Setting drop caps


Canvas is the only cross-platform program that seamlessly integrates professional-level image editing, page layout, Web graphics, and presentation features into a single creative application.

Drop caps are large characters that extend below the normal baseline of the first line of an opening paragraph. Canvas indents the text below the first line to make room for the drop caps. You can format drop caps for any selected paragraphs.

To set up a drop cap

1 Depending on how you want the drop cap to apply, do one of the following:

To apply to	Do this
First paragraph in a text object	Select the object or place the insertion point anywhere in the first paragraph
All other paragraphs	Place the insertion point in a paragraph, or select a paragraph. You can also select multiple consecutive paragraphs
A new paragraph you are about to type	Place the insertion point at the beginning of the paragraph

To apply to	Do this
The preset format	Deselect all objects. Canvas will apply drop caps to the first paragraph of all new text objects you create with the Text tool

2 Configure the drop cap options described below.

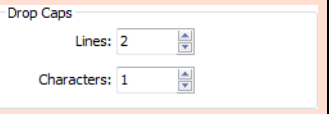
Drop cap settings

If necessary, open the Type palette by choosing Text > Type. Click the Indents tab to bring it to the front.

Lines. Specify the number of lines you want the drop caps to occupy. This determines the vertical height of the drop cap.

Characters. Specify the number of characters to enlarge for drop caps. Canvas always applies this setting beginning with the first character in a paragraph.

Click Apply to implement the drop cap settings.



Inserting headers and footers

You can add header and footer text objects using commands in the Text > Insert menu. Headers and footers are special text objects that can contain codes for the current date, current time, and page number, in addition to text you type. Canvas updates the date, time, and page number codes each time it redraws the screen.

In Publication documents, Canvas inserts headers at the top of the publication layout area (above the page margins) and footers at the bottom of the publication layout area (below the page margins). In other documents, Canvas places the header in the upper left corner of the page and the footer in the lower left corner.

✓ Tip
You can't add headers and footers in edit mode, press Esc to end text editing.

Both types of objects initially span the width of the page, but you can resize and move them just like other text objects.

To insert header and footer text objects Choose Text > Insert > Header or Text > Insert > Footer. Canvas creates the text object, and places it in edit mode.

Inserting dates, times, and page numbers

✓ Tip
Refer to your system documentation for information on setting the current date and time.

Insert date, time, and page number codes in header and footer text objects. Canvas will update the values for these codes each time it redraws the screen, unless the Date Stamp and Time Stamp commands are used. Canvas uses the date and time as set in the operating system.

You can insert the current date and time in text objects (see "Text objects," page 28.1); however, Canvas does not update this text since it is "stamped" into the document as regular text. You can change page number (symbol $P) and total page count (symbol $T) displayed by adding a simple formula to them.

You can apply text formatting or Type Styles (see "Working with type styles," page 30.1) to the date, time, and page codes; e.g., change fonts, type sizes, and justification, as you would apply formatting to normal text with the Text menu, Properties bar, or Type palette.

When entering the formula, remember the following:

- The formula can contain only "+" and "-" as operators or numbers. Do not use spaces between the characters.
- The formula may be of any length, but it must be in a formula format.

• **To insert the date, time, or page number:** With a header or footer object in edit mode, choose Text > Insert (see "Date and time commands" and "Page numbering commands").

Date and time commands

To insert	In this type of object	Do this
Updating date code	Header or footer	Choose Insert > Date, or type *$d*
Date stamp	Any text object	Choose Insert > Date Stamp
Updating time code	Header or footer	Choose Insert > Time, or type *$e*
Time stamp	Any text object	Choose Insert > Time Stamp

Page numbering commands

To insert	In this type of object	Do this
Current page number	Header or footer (page count is static in normal text objects)	Choose Text > Insert > Page #, or type *$p*
Total page count	Header or footer (page count is static in normal text objects)	Choose Text > Insert > Total Page #, or type *$t*

To insert	In this type of object	Do this
Page # of total pages e.g., Page 2 of 8	Header or footer (page count is static in normal text objects)	Choose Text > Insert > Page # of Total Page #, or type Page $P of $T
Page -# of total pages e.g., Page -2 of 4	Header or footer (page count is static in normal text objects)	Choose Text > Insert > Page #+4-8 of Total Page #+4-8, or type Page $P+4-8 of $T+4-8

Note: If you unintentionally place spaces between the page numbers and operators, the page numbering will create errors; e.g., the formula *Page $P+4 -8 of $T+4 -8* would appear as *Page 6 -8 of 12 -8*.

CHAPTER 30

WORKING WITH TYPE STYLES

✓ **Tip**
Before you start defining type styles, review the chapter "Formatting text," page 29.1 to learn about fonts, font styles, etc.

Define text formatting settings and save them as character and paragraph type styles using the Styles tab in the Type palette. Canvas stores type styles with documents. When you open a document, Canvas loads the associated styles so you can apply them; however, Canvas also gives you the option of saving defined styles in a file which can be shared with others (see "Saving and loading type styles," page 30.3).

Type styles make it easy to apply formats and maintain consistency throughout a document. Base styles on each other to form a "family" of styles, so that styles inherit the character and paragraph attributes of a parent style. Organizing styles in this manner makes global style changes a simple matter of changing the parent style.

- **To open the Type palette:** Choose Text > Type or double-click the Text tool.

Creating new type styles

You can create two kinds of styles, character and paragraph, which incorporate different formatting attributes. After establishing character and paragraph styles, apply them independently to create new combinations.

Character style attributes	Paragraph style attributes
Font	Leading
Type size	Indents
Font style	Justification
Capitalization style	Drop caps
Baseline position	Hyphens
Kerning	Letter and word spacing
Colors (optional)	Text flow settings
	Character attributes and colors (optional)

To create a type style

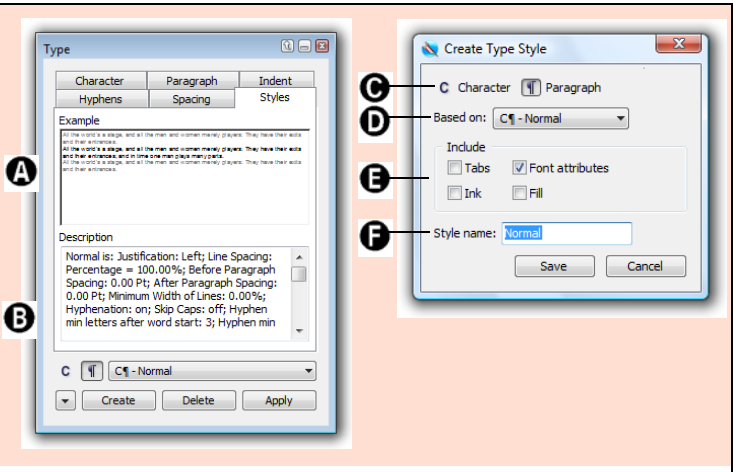
To save the attributes of existing text as a style, place the insertion point in the text and open the Type palette. You can also create a type style without first applying the text settings to text.

Choose settings for a type style on the other tabs and then click the Styles tab to bring it to the front.

A Example. Displays a sample of text with the current formatting settings applied.

B Description. Lists the current character or paragraph attributes. The **C** and ¶ icons toggle between descriptions of character and paragraph attributes.

To save a type style, click Create to open the Create Type Style dialog box.



Create Type Style dialog box

Configure the following style settings.

C Character or Paragraph. Click a button to specify what kind of style you want to create.

D Based on. If there are existing styles, choose a style name on which to base the new style. To disable this feature, choose None (see "Using style families," page 30.2).

E Include. Select the attributes to save as part of the style. You can include ink settings (fill and stroke attributes that have been applied to existing text) in character and paragraph styles. These inks don't affect the current inks for vector objects.

For paragraph styles, you can also include font attributes and tab settings.

If a text selection has a frame or background ink, you can't include these attributes in a style. In addition, when text doesn't have a stroke, you can't include strokes in a style.

F Style name. Type a name for the style. Click Save to store the style and close the dialog box.

✓ Tip
A style's own attributes always take precedence over attributes inherited from the parent style.

Using style families

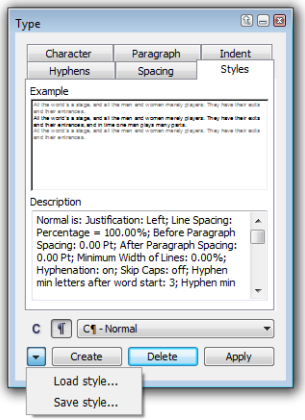
When you base a style on an existing style, the new style "inherits" the attributes of the parent style. When the parent style changes, Canvas also updates all related styles. In addition to inherited attributes, the style possesses its own attributes, which you specify.

You create a style, Body2, based on a parent style, Body1. The fonts are the same, but the type sizes are different. Body2 uses 10 point type, while Body1 uses 12 point. If you change the font for the parent style, the font also changes for Body2. However, if the *point size* changes for the parent style, Body2 does not change, because Body2's own attributes take precedence. To make Body2 always use the same point size as Body1, you must set the point sizes equal, base Body2 on Body1, and save the style again.

In addition, if you later change Body2's *font*, this style will no longer inherit fonts from the parent style. Body2's font will override Body1's font setting.

Careful planning will save you from time-consuming corrections when basing styles on each other. In some cases, changing a parent style's attributes may cause unwanted changes throughout the style family; e.g., if you base ten styles on Body1, and later decide that you want Body1 (but not the whole family of styles) to be double spaced, you must first change the leading for Body1, then *remove* the leading setting from each of the other ten styles.

Saving and loading type styles



You can save type styles to files and then load them into other documents. This feature helps maintain consistency between documents, and lets you share type styles with other Canvas users.

To save a type style to disk

1 Press the menu icon at the bottom of the Styles tab.

2 Choose Save Style in the menu. A directory dialog box opens.

3 Type a file name and specify a location to save the file.

4 Then click Save.

To load a type style

1 Press the menu icon at the bottom-left of the Styles tab.

2 Choose Load Style in the menu. A directory dialog box opens.

3 Locate and select the styles file.

4 Then click Open.

Copying type styles between documents

Another way to transfer type styles from one document to another is to copy text that uses the style and paste the text into a different document. Canvas transfers the style with the text. When you save the document, Canvas also stores the transferred style.

A type style based on another style cannot inherit attributes across documents; e.g., Body2 is based on a parent style, Body1, and you copy only Body2 to a new document. Body2 in the new document

no longer inherits attributes from Body1, which is still in the original document.

However, if you copy both Body1 and Body2 to a new document, the relationship is preserved, and Body2 will inherit attributes from its parent style.

If you happen to paste a style that already exists in the other document, Canvas modifies the name of the pasted style to avoid overriding type styles; e.g., a style named "Body 2" could become "Body 2 -2" when pasted in the new document.

Using type styles

Once you've created your document's type styles, you can start applying them, modifying their attributes, and deleting them from the document. All these processes are done with the Type palette.

Applying type styles

You can apply type styles with the Type palette. Applying type styles with the Type palette is similar to applying individual character or paragraph formats; however, instead of configuring settings on each of the tabs in the palette, simply choose style names from the menu on the Type palette.

The menu displays the current type style name. The **C** and ¶ indicate if the style is a character or paragraph style, or both. If "+++" appears to the right of a style name, the style has been modified but not saved. If you choose a style in the menu when "+++" appears next to the current style, you will lose the modifications to the style. Therefore, if you want to use the settings again, you must save the modified style with a new name before applying other styles.

To apply a style to selected text or text objects with Type palette

1 Select the text or text object(s) to which you want to apply a style.

2 Choose a style in the menu on the Type palette.

3 Click Apply to implement the style.

If the text you selected already had a style applied, Canvas replaces the style with the style you choose. In addition, if you apply a paragraph style with font attributes to highlighted text, the font

attributes affect the selection only, and the paragraph attributes affect the entire paragraph.

To use a type style as the current format setting

Deselect all text objects by pressing Esc, if necessary.

1 Choose a style in the menu on the Type palette.

2 Click Apply. Canvas formats new text objects with the specified style.

Tips on using type styles

By putting some forethought into the purpose and design of type styles, you ensure that you are using this feature effectively. This planning will be especially useful when editing styles and documents, allowing you to make a few modifications that update entire documents.

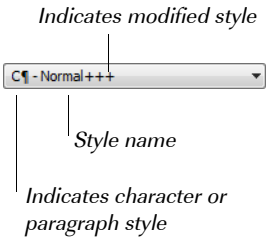
Design a template. If several people need to use the styles, save the styles in a template document. This way, everyone uses a common source for the styles.

Create a "normal" type style. This will make it easy to revert formatted text to a basic style. When you apply the normal style, it will have the effect of removing or overriding other styles.

Name styles by their function; e.g., a heading style might consist of boldface type. Rather than name this style "Bold," name it "Heading," or something that similarly describes its usage. This will make it easier to remember when to use which style.

Always apply a style. If you use styles in documents, use them throughout. If you apply styles only sometimes, you will encounter difficulties maintaining consistency and performing global style changes.

Create style families when possible. You might want to use the Based On feature (see "Creating new type styles" on page 30.1) to create style families for styles that share some attributes. This will make global changes easier. See "Using style families" on page 30.2, for more information.



Modifying type styles

You can change the attributes of a type style and save the style with the same name. When you change a style's attributes, all styles in the family automatically inherit the new shared attributes.

To modify a type style

1 Choose the style you want to edit from the menu.

2 Change the style's attributes. Canvas displays "+++" after the style name to indicate that changes were made to the style.

3 Click the Styles tab and click Create. The Create Type Style dialog box opens (see "Create Type Style dialog box," page 30.2).

✓ Tip
The options in the Include area change for Character and Paragraph styles.

The current style name is in the Based On menu and Style Name box. To replace the style, do not change these settings.

4 Select the checkboxes of the attributes that you want to include.

5 Click Save. Confirm that you want to replace the existing style with the new style. Click OK.

Deleting type styles

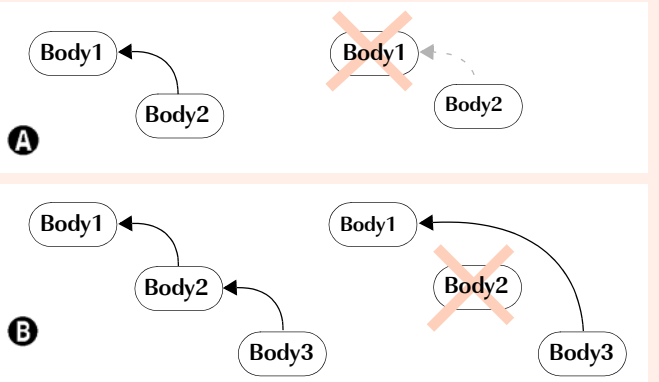
To minimize confusion when choosing styles to apply, delete type styles you no longer use. Text using a deleted type style retains its formatting, but no longer has a named style. See the following illustration for other effects of deleting a type style that is part of a style family.

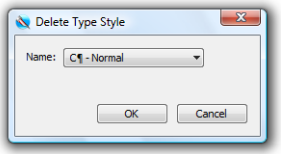
Deleting parent styles

The diagram shows the results of deleting type styles on which other styles are based. Arrows indicate relation between styles.

A Body2 is based on Body1. Deleting Body1 makes Body2 an independent style.

B Body3 is based on Body2, which in turn is based on Body1. Deleting Body2 makes Body3 based on Body1.





To delete a style

1 Click Delete on the Styles tab of the Type palette. The Delete Type Style dialog box opens.

2 Choose the style to delete from the Name menu.

3 Click OK.

Applying character formatting

Canvas gives you precise control over the appearance of each character. Set the font, type size, font style, kerning, capitalization style, scale, and baseline position using menu commands, Properties bar, or the Character tab of the Type palette.

Character attributes are applied by selecting the specific characters that you want to modify. Select any portion of text — from one character to entire text objects (see "Selecting text and objects," page 29.1).

To set character attributes

The Character tab lets you control all character attributes. Some attributes, such as type face, type size, font style, baseline, and kerning, are also available in the Text menu or Properties bar.

Font. Choose a typeface in the menu.

Size. Choose a type size in the menu or type a number in the text box.

Style. Click a button to select a font style.

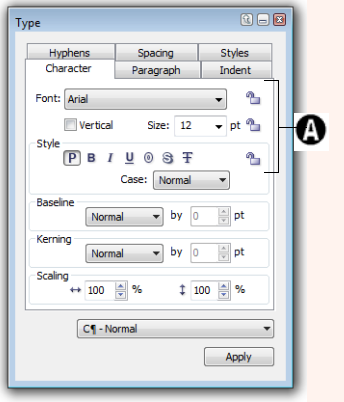
Case. Choose a capitalization style in the menu.

Baseline. Specify subscript or superscript settings to one hundredth of a point precision.

Kerning. Tighten and loosen kerning by hundredths of a point.

Scaling. Specify percentages by which you want to scale the current type size. Set individual horizontal and vertical scaling percentages.

A Locks. To prevent accidental or unwanted changes to the type face, type size, or font style of specific text, you can set these locks. If you want to change locked text, you must first unlock the text.



Preventing changes to character attributes

On the Character tab in the Type palette, you can lock the current font, type size, and font style to prevent accidental changes. This feature is especially useful when several people are using the same Canvas document. In addition, you can also use this feature to selectively exempt sections of text from global formatting changes. Once you lock a setting, no one can change it without first unlocking it.

To lock character attributes

Lock button 

1 Click the Character tab on the Type palette.

2 Change any font, size, or style attributes at this time.

3 Click the Lock button to the right of the attribute.

4 Click Apply. Canvas first applies the new font attributes, *then* locks the new attributes.

CHAPTER 31

TEXT EDITING & PROOFING

You can insert, search, replace, move, delete, copy, and spell check text in Canvas documents. This chapter describes how to navigate through text for editing, make text selections, and use spelling tools and the Find feature for text search-and-replace.

Text edit mode

To edit text, put a text object in edit mode. In edit mode, you can revise, delete, insert, and select specific text. Only one object is in text edit mode at a time.

Entering text edit mode

Put a text object in edit mode with the Text tool or Selection tool. When a text object is in edit mode, the text object becomes opaque, the selection handles disappear, and a flashing insertion point appears. Also, the Text tool becomes the active tool.



In edit mode, an insertion point appears in the text object.

- **To enter edit mode using the Text tool:** Select the Text tool and click in a text object. An insertion point appears where you click, and you can begin typing or editing.
- **To enter edit mode using the Selection tool:** With the Selection tool, double-click a text object. If you double-click on a word, the word becomes selected and is highlighted. The Text tool is selected, and you can begin typing or editing.
- **To edit text bound to a path:** With the Path Text tool or the Text tool, click the text. An insertion point appears in the bound text, and you can begin typing or editing.
- **To leave text edit mode:** Press Esc when you finish text editing. Canvas switches to the Selection tool from the Text tool. The text object you were editing is selected.

Text selection and navigation

Move the insertion point and select characters, words, lines, and paragraphs using the mouse or keyboard.

The mouse lets you quickly select text or text objects and move the insertion point. However, if you work with a lot of text, you might find that the keyboard techniques let you move the insertion point more precisely to edit more quickly.

Making text selections

Before you can cut, copy, move, delete, type over, or perform other operations on text characters, you need to select the text within a text object. You can select text when a text object is in edit mode.

The phrases "selected text," "text selection," and "highlighted text" all refer to an active selection of characters within a text object. Selected text appears highlighted; the highlight color depends on your system's color settings.

Keep in mind that a text selection is not the same as a selected text object. When you select a text object, you can move, copy, delete, and perform other operations on the entire object. When you make a text selection, the editing actions will affect only the highlighted characters within the object.

- **To deselect all highlighted text:** Click anywhere in the text object or layout. Clicking outside the selected text object creates another text object at that location.

Using the keyboard for text editing

While editing text, use the key combinations listed in the following table to move the insertion point and select text.

Key combinations for text editing

Press this key	and these keys	to do this in edit mode
None	Up arrow, Down arrow, Right arrow, Left arrow	Move insertion point 1 space right or left
	Page Up, Page Down	Move insertion point 3 lines up at the left margin (Page Up) or down at the right margin (Page Down)
	Home, End	Move insertion point to the beginning (Home) or end (End) of the text object

Press this key	and these keys	to do this in edit mode
Ctrl	Right arrow, Left arrow	Move insertion point to the next word end (Right arrow) or beginning (Left arrow)
	Up arrow, Down arrow	Move insertion point to the left margin of the line, or up 1 line at the left margin (Up arrow), or down 1 line to the left margin (Down arrow)
	Home, End	Move insertion point to beginning (Home) or end (End) of line
Shift	Right arrow, Left arrow	Extend selection 1 space right or left
	Up arrow, Down arrow	Extend selection 1 line up or down
	Page Up, Page Down	Extend selection 3 lines up or down
	Home, End	Extend selection to the beginning (Home) or end (End) of the text object
Shift + Ctrl	Right arrow, Left arrow	Extend the selection 1 word right or left
	Up arrow, Down arrow,	Extend the selection to left margin (Up arrow) or right margin (Down arrow). From the margin, extend the selection to the other margin, or up or down 1 line
	Page Up, Page Down	Extend selection 3 lines up or down

Using the mouse for text editing

Using the mouse and modifier keys, you can quickly place the insertion point, select specific words, and select sections of text in edit mode. For information on putting a text object in edit mode, see "Text edit mode" on page 31.1.

Mouse actions for text editing

To do this in text	Do this with the pointer
Select a continuous block of text	Drag over the text you want to select
Select all text between the insertion point and another location	Press the Shift key and click where you want the selection to end. Windows users can use the right mouse button like the Shift key (hold down the right button and click with the left).
To deselect all highlighted text	Click anywhere in the text object. (Clicking outside the text object creates a new text object at that location or puts another text object into edit mode.)
Deselect text between the insertion point and another location in the selection	Press Shift and click in the highlighted text

To do this in text	Do this with the pointer
Select a word	Double-click the word
Select a line of text	Triple-click the line

Copying, pasting, deleting, and moving text selections

✓ Tip
To help you in editing text, display symbols for spaces, paragraph breaks, and tabs. Choose Layout > Display > Show Text Invisibles. To hide these symbols, choose Layout > Display > Hide Text Invisibles.

You can cut and copy a text selection, and then paste the selected text in the same document, in another Canvas document, or to and from a non-Canvas document using the Clipboard. Whether pasted text retains its formatting depends on the operating system and the source of the text.

- Text pasted from another application can be embedded into a Canvas document, using Object Linking and Embedding (OLE) to preserve its formatting. See "Embedded text objects and editions containing text" on page 31.16.

If you copy and paste selected text (and not an entire text object) within Canvas, the text retains its character attributes, but it adopts the paragraph formatting of the surrounding text.

To copy and paste selected text

When you copy selected text, you can create a new text object or insert the text into an existing text object.

1 Select the text you want to copy.

2 Choose Edit > Copy to copy the selection to the Clipboard.

3 Depending how you want to paste the selection, do one of the following:

- **To paste text into an existing text object:** Put the insertion point in the text where you want to paste the insertion.
- **To paste text as a new text object:** Be sure no objects are in text edit mode by pressing Esc. You can set the width of the new text object by selecting the Text tool and dragging. Otherwise, text will be pasted in one long line that might extend off the screen (see "Creating text layouts" on page 28.4).

4 Choose Edit > Paste to insert the text from the Clipboard.

To cut text

1 Select the text you want to cut.

2 Choose Edit > Cut. The text is cut to the Clipboard and is ready to be pasted to another area.

To delete text

1 Select the text you want to delete.

2 Choose Edit > Clear, or press Delete.

- **To replace selected text:** Begin typing, or use the Paste command, to replace a text selection with the text you type or paste from the Clipboard. This saves the step of deleting the selected text.

- **To replace all text in a text object:** Select a text object and begin typing. The text adopts the formatting of the replaced text. If multiple text objects are selected, the text you type replaces the text in the object that was created first.

Changing text attributes

While a text object is selected, you can change the formatting of all the text it contains using the Text menu, Type palette, or Properties bar.

Finding and changing text

Use the Text tab in the Find palette to search for specific text or characters in selected text objects and entire documents. You can replace or delete found text selections one at a time or all at once (see "Text search options," page 31.7).

The Text tab also lets you search for text with specific font, size, and style attributes, and change the attributes of found text.

To find and change text

1 Choose Edit > Find to open the Find palette. Click the Text tab to select it. To search for text, type the text in the Find box or select a special text character. Specify that you want to find only whole words or text matching the capitalization (case) of the Find text.

2 If you want to replace found text or characters, type the replacement text in the Change To box or select a special text character. When the Change To box contains at least one character (including a space), the Change All button is available.

3 Click Find to locate the first occurrence of the specified item. If one or more text objects are selected, Canvas searches the text

contained in the first selected object. If no text objects are selected, Canvas searches the entire document.

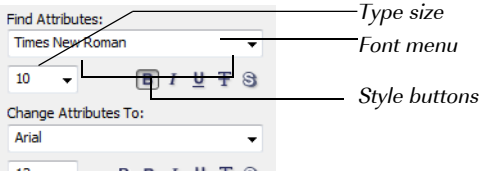
4 If Canvas finds the specified item, it highlights the text or character in the document. Click Find to search for the next occurrence of the specified text. If the Change To box contains replacement text or a special character, the Change button is available. Click Change to replace the highlighted item with the Change To text or special character.

5 To continue searching, click Find. Repeat the previous step if Canvas finds another occurrence of the search item. When Canvas completes the operation, it displays a message. Click OK in the message box to continue.

Note: You can click Change All to replace all occurrences of the Find text or special character with the text in the Change To box, without first clicking Find.

Finding and changing text attributes

You can search for and change text attributes (whether or not you also search for specific text). The text attributes you can seek and change are font, type size, and text style (see "Find Attributes," page 31.7 and "Change Attributes To," page 31.7).



To search for text attributes

1 Click the arrow at the bottom-left corner of the Find palette.

2 In the Find Attributes section, select a font name from the font pop-up menu. Type a size (in points) or select a size from the size pop-up menu. Click the style buttons to set the styles you want.

3 In the Change Attributes To section, specify replacement attributes in the same way that you specify the Find attributes.

4 Click Change or Change All to replace the attributes specified in the Find Attributes section with the attributes specified in

the Change Attributes To section. If you have also typed text in the Find box, the replacement text attributes can be applied only to text that matches the Find text.

Clicking the Clear button removes all settings in the Find Attributes and Change Attributes To areas.

Text search options

The options on the Text tab in the Find palette let you specify criteria for text and character searching and replacement.

Find. Type the text or select the special character (1) that you want to find. Leave this box blank to search for text attributes only.

Change To. If you want to replace found text or characters, enter replacement text or character (1) here. If you want to delete found text or characters, leave the Change To box empty.

Whole Word. Select Whole Word to specify that the Find text is an entire word; e.g., if you type "time" and select Whole Word, Canvas will not find "times," "untimely," or "timer."

Match Case. Select Match Case to include the capitalization of the Find text in the search criteria; e.g., if you type "Time" and select this option, Canvas will not find "TIME" or "time."

Change. If Canvas locates the specified text and attributes, it highlights the text in the document. Click Change to replace the highlighted text with the Change To text and to apply the replacement attributes specified in the Change Attributes To section.

Change All. Click to replace all occurrences of the text and attributes you specified with the replacement text and attributes. Canvas makes the changes without highlighting found text.

Find button. Click to search for the next occurrence of text specified in the Find text box and attributes specified in the Find Attributes area.

Find Attributes

The text attributes that you specify here tell Canvas what to search for.

A Click to display Attributes options.

B To search for a particular font, select the font name from the pop-up menu.

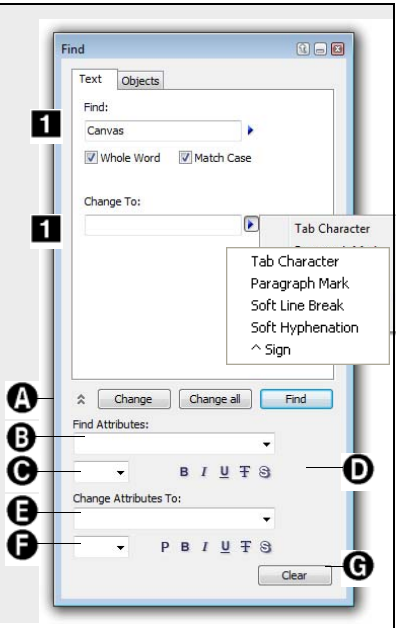
C To search for a type size, enter the size or select the size from the pop-up menu.

D To search for a type style, select a style button. You can select bold, italic, underline, outline, strikethrough, and shadow styles.

Change Attributes To

The text attributes that you specify here can be applied to text that matches the attributes specified in the Find Attributes area.

E Select the font from the pop-up menu.



F Enter the replacement size (in points) or select the size from the pop-up menu.

G Click style buttons to specify replacement styles. You can choose bold, italic, underline, outline, strikethrough, and shadow.

Clear. Click to delete all the settings from the Find Attributes and Change Attributes To areas.

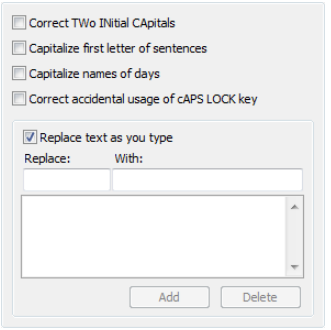
Automatic text correction

Canvas can automatically fix typographical mistakes as you type. The Auto Correct manager lets you select several automatic correction options. It also lets you specify common misspellings, typing

errors, and abbreviations that you want Canvas to replace as you type.

When any text replacement option is active, Canvas checks each word you type. It corrects or replaces text as appropriate once you press the Spacebar.

Auto Correct options



Use the options in the Auto Correct manager to specify corrections you want Canvas to make as you type (see "Auto Correct," page 12.11).

To set up automatic correction

1 Choose Text > Spell Checker > Auto Correct.

2 In the Auto Correct manager, select the replacement options to use.

3 Click OK to implement the current settings.

Setting up text replacement

Specify abbreviations, common misspellings, and other text that you want Canvas to replace as you type.

Use this feature to expand abbreviations for common phrases and long names that you type throughout a document: e.g., if you often type "Department of Agriculture," you can specify that the abbreviation "DA" be replaced by the full name.

To set up text replacement

1 Choose Text > Spell Checker > Auto Correct. In the Auto Correct manager, be sure Replace Text as You Type is selected.

2 In the Replace box, type text that you want to be replaced. In the With box, type the replacement text. Click Add to place the text in the scrolling list.

3 Repeat this procedure to specify more automatic replacements. Add as many items to the scrolling list as you want. When you finish, click OK.

Note: Auto Correct does not remove specified text from a document if you type nothing in the With box. Also, Auto Correct won't replace spaces with more or fewer spaces (such as replacing two

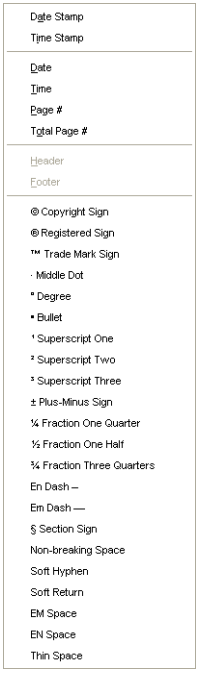
spaces with one space); however, you can use the Text tab in the Find palette to find and replace spaces.

- **To remove replacement entries:** Select the entry in the scrolling list and click Delete.

Automatic spelling correction

When you use the Spelling menu ("To use the spelling pop-up menu," page 31.13) to correct a misspelling, Canvas adds the item to the Auto Correction list. The misspelled word appears under Replace and the correction appears under With. If you make the same spelling mistake again and "Replace Text as You Type" is selected in the Auto Correct manager, Canvas corrects the error. If "Replace Text as You Type" is not selected, Canvas won't make these automatic corrections.

Inserting special characters and graphics in text



Sometimes it is necessary to enter special typographic symbols into text. You can insert special characters using the command Text > Insert and the Character Map.

To insert a symbol

1 While in text edit mode, place the text I-beam at the location in which you wish to insert the symbol.

2 Choose Text > Insert.

3 Select a symbol from the submenu list and release the mouse. The selected symbol will automatically be inserted.



After using the insert symbol command.

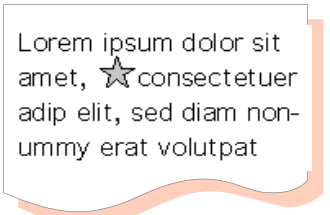
Typographic quotes

You can set a preference so Canvas inserts typographic ("curly") quotation marks in text you type. For more information, see "Use Smart Quotes," page 12.14.

Placing graphics in text objects

Use the Insert Picture command to anchor graphics in a text object. This feature lets you use custom bullets, special illustrations for drop caps, and small logos within text. An inserted picture behaves like a text character.

- Inserted pictures move with the surrounding text.
- Indent and justification settings apply to inserted pictures.
- An inserted picture's baseline and kerning can be adjusted.
- An inserted picture rotates and skews with the surrounding text.



Text with an inserted picture

Some text formatting features do not apply to inserted pictures.

- If you scale the surrounding text, an inserted picture does not distort or scale with the text.
- Spread and Overprint commands do not affect inserted pictures.
- Strokes or inks applied to the text don't affect inserted pictures.
- Inserted pictures might not be imported from the Clipboard by other applications.

Inserting a picture into text

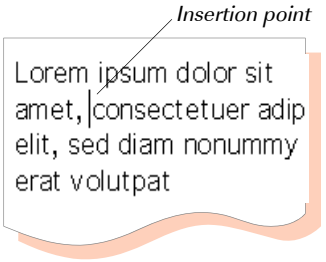
The Insert Picture command is available when any object is on the Clipboard and the insertion point is in a text object.

When the insertion point is in a text object and you choose the Insert Picture command, Canvas inserts the contents of the Clipboard as a raster image into the text.

Since Canvas converts the Clipboard contents to a raster image when you use Insert Picture, you cannot edit objects that have been inserted into text; e.g., if you insert a multigon object into text, you can't use editing handles to reshape or scale it. If you insert text characters using the Insert Picture command, the inserted text characters are not editable.

To use the Insert Picture command

1 Select the object or objects that you want to insert into text.



2 Choose Edit > Cut or Edit > Copy to place the selection on the Clipboard. If you selected multiple objects, they become a single composite graphic when inserted into text.

3 Select the Text tool.

4 Click in the text where you want to insert the graphic. An insertion point appears where you click.

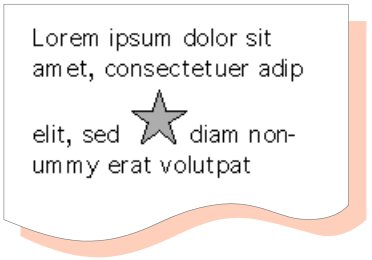
5 Choose Text > Insert Picture. The Clipboard contents appear at the insertion point.

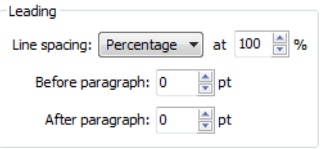
How inserted pictures affect leading

When you use the Insert Picture command, the leading of the paragraph might change, depending on the Line spacing method:

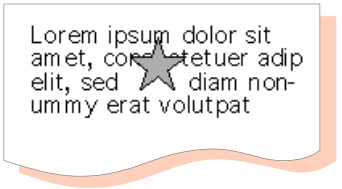
- If the Line spacing is defined by Percentage, Canvas adjusts the Line spacing to fit the picture based on the defined percentage, if necessary.
- If the Line spacing is defined by Points, the spacing between lines stays the same, regardless of the size of the picture.

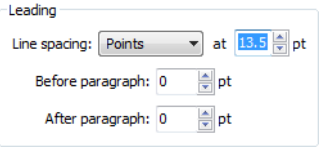
Line spacing set to 100%





Line spacing set to 12 points





Using dynamic objects for inserted pictures

If you want to be able to edit an inserted picture, you can insert a dynamic object into text. A dynamic object is an object linked to an editable original in the Symbol Library palette. If you change the

original in the Symbol Library palette, the inserted picture dynamic object will change to match the original.

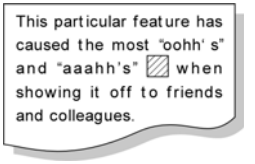
For example, you can use the Insert Picture command to place simple placeholder dynamic objects (such as small squares) where you want finished graphics to appear in text. When the final graphic is available, replace the placeholder dynamic object in the Symbol Library palette with the finished graphic. With this method, you do not have to change each instance of a graphic individually or alter the publication's layout.



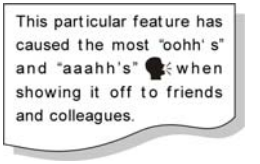
Placeholder object



Final graphic



Text with placeholder dynamic object inserted



Placeholder dynamic object replaced by apple graphic

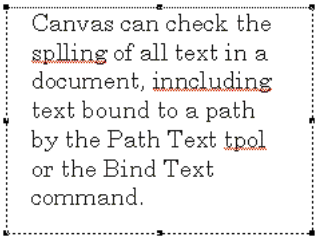
Checking the spelling of text

Canvas can check the spelling of all text in a document, including text bound to a path by the Path Text tool or the Bind Text command. Canvas can check the spelling of specific words, selections and entire documents. Canvas can also check the spelling of words as you type.

✓ **Tip**
The Canvas dictionary file can't be modified.

Canvas checks the spelling of text by looking up words in the Canvas Dictionary and the User Dictionary. The Canvas dictionary contains 100,000 words. You can add words to the User Dictionary to stop Canvas from marking unrecognized words that are spelled correctly.

Showing and hiding unrecognized words



Unrecognized words marked

Canvas marks words that it can't find in either the Canvas Dictionary or the User Dictionary with a red wavy underline. Canvas can check spelling while you type or after you finish entering text.

When Show Spelling Errors is active, Canvas checks the spelling of a word after you type it and press the Spacebar, tab, or deselect the text object. Canvas marks an unrecognized word with a red wavy underline.

- **To mark unrecognized words:** Choose Layout > Display > Show Spelling Errors.
- **To not mark unrecognized words:** Choose Layout > Display > Hide Spelling Errors.

Using the spelling pop-up menu

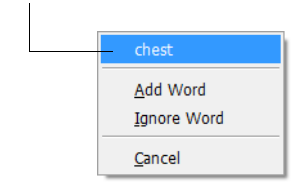
While using the Text tool to edit text, you can choose suggested replacements for words marked as unrecognized.

The spelling pop-up menu lets you choose replacement words. You can also use the menu to add unrecognized words to the User Dictionary.

To use the spelling pop-up menu

With a text object in edit mode, point to a word that Canvas has marked as unrecognized. Right-click the word to open the spelling menu. Do one of the following:

Suggested words



Spelling menu

- **To replace an unrecognized word with a suggested word:** Choose the suggested word in the menu.

When you choose a replacement word in the Spelling menu, Canvas adds the unrecognized word and the replacement word to the Auto Correct manager. The unrecognized word appears in the Replace text box and the suggested word appears in the With text box (see "Checking the spelling of text" on page 31.12).

- **Add Word:** To add an unrecognized word to the User Dictionary, choose Add Word. After you choose Add Word, Canvas adds the word to the User Dictionary and will recognize any future use of the word.
- **Ignore Word:** To ignore the spelling of the unrecognized word, click Ignore Word. If you choose Ignore Word, Canvas will ignore the word in any document until you quit Canvas.

- **Cancel:** To close the spelling menu without making any changes, choose Cancel or click outside the menu.

Spell checking a selection or document

Check the spelling of selected text, a selected text object, and an entire document using commands in the Spell Checker menu.

- **To limit the spell checking to specific text or text object:** Select the text or text object.

- **To spell check an entire document:** You don't have to select anything.

To begin spell checking

1 Choose Text > Spell Checker > Spell Check Selection (if you selected text or a text object), or Text > Spell Checker > Spell Check Document.

If Canvas finds an unrecognized word, the Spelling Checker dialog box appears (see "Spelling Checker," page 31.14). Canvas displays a message when the spell check is complete.

2 Click OK to close the message box.

Note: Canvas deselects any selected objects (but not text) when you use the Spell Check Selection or Spell Check Document commands.

Spelling Checker

The Spelling Checker dialog box appears during spell checking of a selection or document if Canvas finds a word that isn't in its dictionaries.

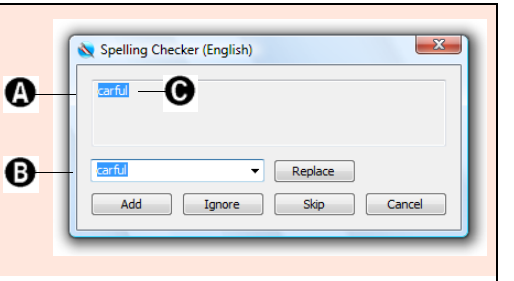
A Canvas displays unrecognized words in context. You cannot edit the text in this box.

B Type a new spelling in this text box or click the down-arrow to choose from the list of suggested spellings.

C The highlighted word in this box is the unrecognized word.

Replace. Click this button to replace the unrecognized word with the contents of the text box (**B**) and continue to spell check the document.

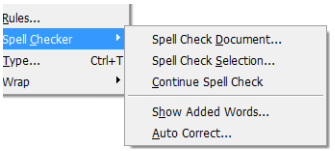
Add. If Canvas doesn't recognize a word that is actually spelled correctly, add the word to the User Dictionary so that Canvas recognizes it in future documents (see "Modifying the User Dictionary" on page 31.15). After saving the word, Canvas continues to spell check.



Ignore. Allows an unrecognized word in the current document without adding the word to the dictionary. Canvas ignores all instances of the word until you close Canvas.

Skip. Allows the current instance of an unrecognized word, but Canvas alerts you the next time this word occurs.

Cancel. Interrupts the spell check and closes the dialog box.

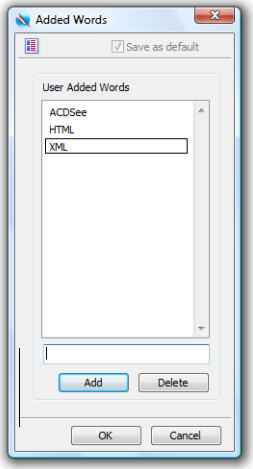


Continuing a spell check

If you cancel a spell check, chooseText > Spell Checker > Continue Spell Check to pick up where you left off. Canvas remembers the words you chose to ignore.

Modifying the User Dictionary

In addition to more than 100,000 words in the Canvas Dictionary, you can store an unlimited number of words in a personal user dictionary (see "Spell Check Dictionary," page 12.12).



Add words to the dictionary by typing the word in this text box and clicking Add

To add words to the User Dictionary

1 Choose Text > Spell Checker > Show Added Words. The User Added Words manager appears.

2 Type a new word to add.

3 Click the Add button. Words you add to the user dictionary appear in a scrolling list.

4 Click OK to close the manager.

To delete words in the User Dictionary

1 Choose Text > Spell Checker > Show Added Words. The User Added Words manager appears.

2 Select a word and then click Delete.

3 Click OK to close the manager.

Importing text from other applications

You can import text created in other applications into Canvas. This capability is especially useful if you are compiling documents from different applications into a Canvas layout; e.g., you might need to assemble a publication with contributions from several writers who each use different word processors.

✓ Tip
The Import command is used to import raster images, not text.

Canvas supports several methods for importing text. You can open a text file, place a text file, paste text from the Clipboard into a Canvas document, and use OLE.

Opening a text file with the Open command creates a new Canvas Publication document for the imported file. Placing, pasting, and embedding text inserts the text into the current document. For information on pasting text from the Clipboard, see "Copying, pasting, deleting, and moving text selections" on page 31.4.

The formatting of imported text might differ from the formatting of the original text in its native application. Although some software products might have similar capabilities, the methods used can vary significantly. It might be necessary to reformat imported text using the typographic tools in Canvas.

Embedded text objects and editions containing text

In Windows, use Object Linking and Embedding (OLE) to insert text in a Canvas document with the Paste Special command.

However, Canvas treats embedded text objects and editions as objects, not text. You cannot apply effects, such as wraps or binds, to text in these objects. In addition, Canvas cannot spell check, hyphenate, or format this text. All formatting and effects must be performed in the original application or publisher. For more details and procedures, see "Using Object Linking and Embedding" on page 13.27.

Placing text in documents

✓ Tip
If you have difficulty opening or placing a text document because of the formatting, try converting the file to plain text before importing the file.
Also, try copying and pasting the text you want to import. This removes formatting that Canvas doesn't understand.

Place text by typing or pasting text from the Clipboard. You can also place text by choosing File > Place.

To place text using the same margins as the original file, click the Place icon in the document. If the file you are importing contains text only (no images or objects), you can also drag the Place pointer to simultaneously import and set margins for the text. However, if the file you want to import has images or objects, dragging the Place icon scales the text, images, and objects as a group.

To place text into sections

To create sections in a document, see "Creating columns" on page 28.9. Use the Place command to place text from a text file into a section.

1 Select the Text tool and click at the top of the first column in the section. An insertion point appears in the column at the height where you clicked.

2 Choose File > Place. Select the text file you want to place and click Place. The text from the text file appears in the section and flows from column to column.

If the final column in a section contains overset text, you can flow the text into another text object or section, or resize the section to

contain the overset text (see “Flowing overset text into new text columns” on page 28.13).

To paste text into a section

After you create a section, you can paste text from the Clipboard to create text columns (see “Creating columns” on page 28.9).

1 Use the Edit > Copy command to place text on the Clipboard.

2 Select the Text tool and click at the top of the first column in the section. An insertion point appears in the column at the height where you clicked.

3 Choose Edit > Paste. The text on the Clipboard appears in the section and flows from column to column.

If the final column in a section contains overset text, you can flow the text into another text object or section, or resize the section to contain the overset text (see “Flowing overset text into new text columns” on page 28.13).

Exporting text from Canvas documents

Copy text from Canvas and paste it into other applications using the Clipboard. In addition, you can use the Canvas file filters to save selections and documents in other file formats (see “File & data exchange,” page 13.1). Keep in mind that if you save a document containing text and use a format that supports only raster images, Canvas rasterizes the text before saving the file, so you can’t edit it in the saved file.

✓ Tip
Always save a copy in Canvas format of files you want to export, in case the file conversion doesn’t give the results that you expected.

Also, several Canvas typographic capabilities aren’t available in other applications; e.g., character inks and strokes, text typed on a path, and wrapped text are unlikely to convert reliably. In some cases, such as rotated text, the export filters might rasterize the characters, and you will not be able to edit them as text.

To export text to other file formats

1 Choose File > Save As.

2 In the Save as type menu, choose a file format. Type a name for the file, and then click Save.

Note: Canvas warns you that saving files in other formats might result in a loss of some information whenever you save using a format other than Canvas.

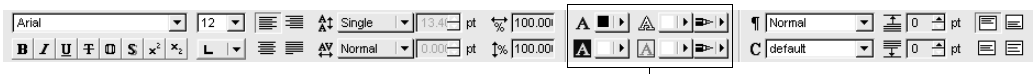
CHAPTER
32

TYPE EFFECTS

This chapter explains how to apply various effects to type. In Canvas, you can wrap text inside objects, repel text from objects, bind text to the path of an object, and slant the margins of a text object.

Text inks and strokes

You can apply fill inks, pen inks, strokes, frame inks, background inks, and frame strokes using the Fill Ink, Pen Ink, and Stroke icons in the Toolbox. You can also use the Properties bar that has icons and popout palettes that let you apply fill inks, frame inks, background inks, and frame strokes (see "Formatting text with the Properties bar," page 29.5).

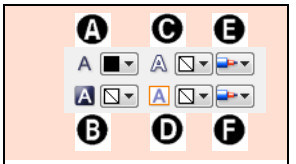


Current attributes

By using the icons in the Toolbox, you can set the pen ink, fill ink and stroke current attributes for text; however, you can't set frame inks, background inks, and frame strokes to be current attributes; i.e., you can't set a frame ink, background ink, or frame stroke that will be applied when you create new text objects (see "Attributes of new text" on page 28.3).

✓ Tip
When you convert text to paths, Canvas keeps the pen ink, fill ink and stroke, but any background inks, frame inks, or frame strokes are removed.

Applying inks and strokes



Inks and Strokes icon on the Properties bar

A	Fill ink
B	Background Ink
C	Outline ink
D	Frame ink
E	Outline stroke
F	Frame stroke

You can apply the following attributes to one or more text objects, and to text selections.

Fill ink An ink applied to the inside, as opposed to the outline, of the characters in a text object or text selection. You can also apply a fill ink with the Fill Ink icon in the Toolbox.

Background ink An ink applied to the background of a text object or a text selection.

Outline ink An ink applied to the stroke of text characters. You can also apply a pen ink with the Pen Ink icon in the Toolbox.

Frame ink An ink applied to the stroke on the bounding box of a text object, or a box around a text selection.

Outline stroke The outline of text characters. You can also apply a stroke with the Stroke icon in the Toolbox.

Frame stroke A stroke applied to the bounding box of the text object, or a box around a text selection. The frame ink appears on the frame stroke.



Background ink



Fill ink

To apply a fill ink

1 Select a text object, text characters, or place the insertion point in existing text.

2 Click on the Fill ink icon in the Properties bar and select an ink from the popup palette. Or, select an ink from the Fill Ink palette in the Toolbox.

To apply a background ink

1 Select a text object or text characters.

2 Click on the Background ink icon in the Properties bar and select an ink from the popup palette.

If a text selection spans more than one line of text, the background ink appears separately on each line of text.

To apply an outline ink

1 Select a text object, text characters, or place the insertion point in existing text.

2 Click on the Outline ink icon in the Properties bar and select an ink from the popup palette.



Frame ink and stroke

To apply a frame ink

1 Select a text object or text characters.

2 Click on the Frame ink icon in the Properties bar and select an ink from the popup palette.

If a text selection spans more than one line of text, the ink appears on boxes around the selected characters on each line of text.

To apply an outline stroke

1 Select a text object or text characters.

2 Click on the Outline stroke icon in the Properties bar and select a pen stroke from the popup palette.

To apply a frame stroke

1 Select a text object or text characters.

2 Click on the Frame stroke icon in the Properties bar and select a pen stroke from the popup palette.

If a text selection spans more than one line of text, the stroke outlines the selection separately on each line of text.

Wrapping and repelling text

Make text flow around or inside objects by using the Text > Wrap commands.

Wrapping text inside an object

When you wrap text inside a vector object, Canvas adjusts the text object's margins so that text fits within the shape of the vector object. A text object can be wrapped inside only one object at a time.

✓ **Tip**
You can also wrap text within the bounding box of a paint object with both methods.

Canvas has two methods of wrapping text inside an object. Select an existing text object and a vector object and choose the Text > Wrap > Inside Shape. Also, select an existing vector object and simply begin typing; the text will stay inside the shape of the vector object.

If you wrap text inside an open vector object, such as an arc, the text wraps between the bounding box and the concave side of the arc. If you try to wrap text to a line or a narrow arc, the text will not be visible. If this occurs, choose Text > Wrap > Remove Wrap or choose Edit > Undo to make the text visible again.



Vector object with wrapped text

To wrap existing text inside an object

1 Select a vector object and a text object.

2 Choose Text > Wrap > Inside Shape. Canvas places the text inside the object.

If there is more text than can fit inside the shape, Canvas inserts a column break in the text object and displays an overset symbol. Resize the object to fit the text or flow the excess text to another column (see "Flowing overset text into new text columns" on page 28.13).

To type new text inside an object

1 Activate the Auto type into object preference (see "Type settings," page 12.12).

2 Select a vector object.

3 Begin typing. Canvas adjusts margins so that text you type remains within the left and right borders of the object.

If the object is too small to contain all the text you type, the text object extends below the object. Resize the object to fit the text or resize the text object to fit the shape, and then flow any excess text to another column.



Center-justified text wrapped inside an oval

✓ **Tip**
To remove effects, also use the Undos palette or keyboard command: Ctrl+Z.

Removing wrap effects

Restore text margins to the standard rectangular shape by choosing Text > Wrap > Remove Wrap.

- **To remove a wrap effect:** Select a wrapped text object. Choose Text > Wrap > Remove Wrap.

Repelling text from objects

To make text flow around an object, apply a repel setting to the object. You also can set the amount of space between the object and text it repels.

An object with a repel setting repels all text. Move the object and it will repel text wherever you place it.

You can apply repel settings to objects before any text has been created or placed in a document. You can also apply a repel setting to a text object to make it repel the text in other text objects.

An object can repel text that is contained in text objects. A repel setting does not repel text that has been bound to a path with the Path Text tool or the Bind Text command.

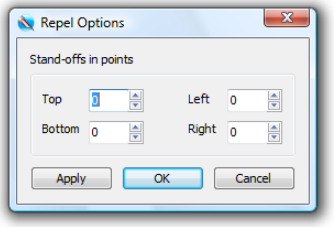
Examples of repelled text



One object repelling text

Two objects repelling text

Two objects repelling two columns of text



To make objects repel text

1 Select one or more objects that you want to repel text.

2 Choose Text > Wrap > Repel. Canvas applies the repel setting. The initial repel amount is zero points.

To set repel space

Use this procedure to set the amount of space between an object and text that it repels.

1 Select the object that has a repel setting and choose Text > Wrap > Repel Options.

2 Enter a value from -30 to 30 points in the four boxes. These values specify the amount of space between the top, bottom, left, and right sides of the object and text that the object repels.

3 Click Apply to view the effect of the current settings. Click OK to apply the settings and close the dialog box.

✓ Tip

When entering values, you can use the Tab key to move between value fields.

To remove a repel setting

Select an object that you do not want to repel text. Choose Text > Wrap > Remove Wrap. Canvas removes the repel setting from the selected object.

Binding text to vector objects

Bind the baseline of text to the path of most types of vector objects. Canvas adjusts the vertical orientation of each character to match the path.



Depending on how you want to bind text, you can choose Effects > Bind Text or the Path Text tool. The Bind Text command lets you bind existing text to an object, and the Path Text tool lets you type new text directly on the path of a selected object.

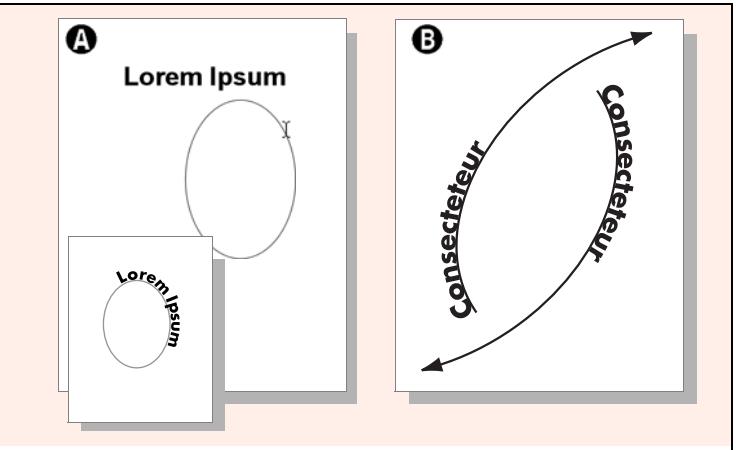
Canvas lets you bind multiple text objects to one vector object, but a text object can bind to only one vector object at a time. Also, you can bind only one text object to a vector object using the Path Text tool. To bind additional text objects to the same vector object after using the Path Text tool, you must create a separate text object and choose Effects > Bind Text.

Position and direction of bound text

Whether you use the Bind Text command or Path Text tool, the location where you click the pointer determines the alignment position.

A This text is center-justified. The I-beam pointer (which appears after choosing the Bind Text command or the Path Text tool) determines where text binds. In the example, the pointer is clicked in the upper-right quadrant of the oval. The inset shows the bound text, centered around the point where the pointer was clicked.

B For open-ended objects, such as arcs, bound text initially flows in the direction the object was drawn. In this example, the arrows indicate the direction the arcs were drawn. Text objects bound to these arcs follow the direction of the arcs.



To bind existing text using a menu command

1 Select a text object and vector object.

2 Choose Effects > Bind Text. When the pointer is on the edge of the selected object, the pointer becomes an I-beam.

3 Click to place the selected text on the path. Text aligns to the point where you click; e.g., if the text is center-justified, Canvas binds the text so that it is centered around the point you click.

4 To change the alignment and position of bound text, see "Working with bound text," page 32.8

To type on a path using the Path Text tool

1 Select the Path Text tool. When the pointer is on the edge of an object, the pointer becomes a crosshair.

2 Click where you want to start typing on the path. An insertion point appears.

3 Begin typing. The text aligns to the location where you placed the insertion point and follows the path of the object.

4 To change the alignment and position of bound text, see "Working with bound text," page 32.8.

Working with bound text

Once you bind text, you can change its starting position, alignment, baseline position, and flow direction. In addition, you can edit the shape and location of the vector object to which text is bound, and Canvas will fit the text to the new path.

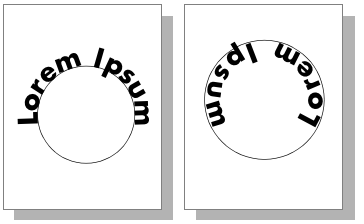
You can also edit bound text by selecting the Path Text tool and clicking the text object, or by double-clicking a bound text object with a Selection tool. However, text editing might be difficult and slow while the text is bound to an object; you might want to remove the text bind, make changes, and re-bind the text.

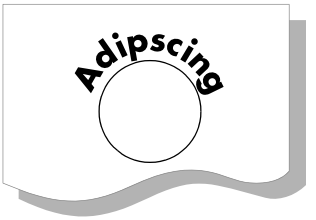
Bound text and its binding object move together, just like grouped objects. However, unlike grouped objects, you can select and change attributes (such as stroke and ink) individually for the text and the object.

To position and align bound text

Canvas has three Bind Position handles that you can drag to place text anywhere on, above, or below an object. The handles appear when you select a bound text object.

Bind Position handles

Handle		Description	Example
	Reverse Flow handle	Click to switch the vertical orientation of type relative to the object path and reverse the flow direction.	

Handle		Description	Example
	Alignment handle	Drag to specify the point where you want type to align. For example, center-justified text will center around the location of this handle. Canvas spreads full-justified text along the entire path or object starting at the location of the handle.	 *Text is centered around the alignment handle*
	Baseline Shift handle	Drag to change the elevation of the baseline relative to the vector object. Baseline Shift lets you insert space between bound type and the object.	

Changing the appearance of bound text

Once you bind text to a path using the Path Text tool or Bind Text command, use the context menu to change the orientation of the text characters relative to the path, and to make the path visible or invisible. The bound text commands appear in the context menu when a bound text object is selected.

- **To access the context menu:** Select an object with bound text and right-click (see "Using context-sensitive menus," page 9.24).

Bound text commands

Command	Description
Show Path / Hide Path	Choose Show Path to make the path visible. Choose Hide Path to make the path invisible.
Vertical Text	Choose Vertical Text to keep the baseline of the text characters horizontal, rather than perpendicular to the path. This also keeps the vertical axis of each character vertical, rather than angled to follow a curved path. The Vertical Text command is available when the text is bound with the Tangent Text option.

Command	Description
Tangent Text	Choose Tangent Text to keep the baseline of the text characters tangent to the path, rather than horizontal. This angles the vertical axis of each character away from vertical as needed to follow the path. By default, Canvas uses the Tangent Text option when it first binds text to a path. The Tangent Text command is available in the context menu when the text is bound with the Vertical Text option.

- **To remove a text bind effect:** Select a bound text object and choose Effects > Remove Effects. Canvas straightens the text baseline and separates it from the vector object.

Binding text to a circle

Create circular logos with text on top flowing clockwise and text on the bottom flowing counterclockwise. Achieve this effect by binding two text objects to a circle and using the Bind Position handles to arrange the text.

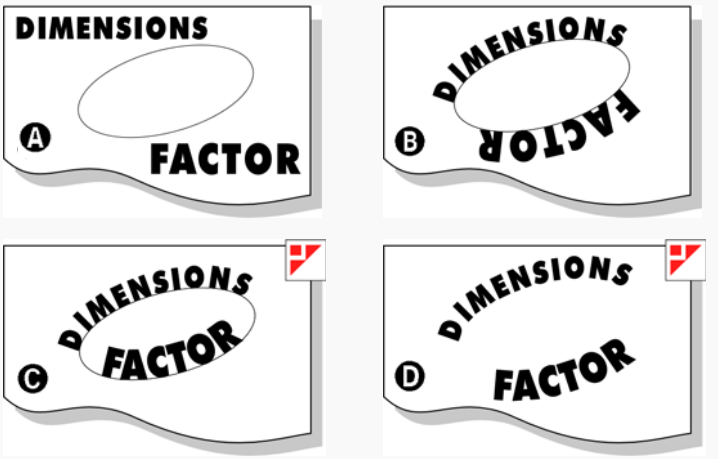
To create a circular logo

A Create a circular object using the Oval tool and then two text objects.

B Use the Path Text tool to create and bind the first text object. Then create the second text object and bind it to the vector object by using the Bind Text command. One text object is bound to the top of the circle, the other to the bottom of the circle. Text initially flows clockwise.

C Clicking the Reverse Flow handle (highlighted in inset) makes "FACTOR" flow counter-clockwise inside the circle.

D Dragging the Baseline Shift handle (highlighted in inset) positions "FACTOR" outside the circle. Removing the circle completes the design.



Using text as clipping paths

Make a pattern, gradient, or image appear to span an entire selection, rather than begin and end within each character; e.g., instead of a gradient completing a blend pattern within each character of a word, make a gradient begin a blend in the first character and finish the blend in the last character.

In Canvas, you create these kinds of "continuous" fills using background objects and foreground text object clipping paths. The intersection of the background and foreground objects provides the appearance of a continuous fill. This method lets you use elaborate background designs, including paint objects, to fill characters. For more information, see "Using clipping paths" on page 20.4.

To use text as a clipping path

1 Position the text object in front of the object to be clipped, and then select both objects.

2 Choose Object > Clipping Path > Make.



Text object in front of image object



Clipping path appears filled with image object

Applying vector effects to type

Apply the following vector effects to text objects: Envelope, Extrude, Rotate, Freeform rotate and skew, Flip, Shadow, and Path editing.

Use effects to add dimension to text objects and create striking designs. This section describes briefly how to apply each of these effects (see "Vector effects" on page 20.1).

Before applying vector effects to type

Depending on the number and kind of effects you apply to text, you might not be able to edit the text afterwards; e.g., you can edit text after rotating and skewing, but if you also extrude the text, Canvas converts the text to vector objects. In addition, depending on the speed of your system, editing rotated and skewed text might be slow. Therefore, you might want to finish all text editing, formatting, and layout before applying effects.

Freeform and rotate effects

In Canvas, you can place a text object in freeform mode and then drag any of the hollow selection handles of the bounding box to rotate and skew text. Choose Effects > Rotate Right/Left > Other to perform exact rotations.

- **To freeform edit a text object:** Select a text object. Choose Effects > Freeform. Drag a circular selection handle to rotate the text object, or a square handle to skew the text.

- **To rotate a text object an exact amount:** Choose Effects > Rotate > Other to open the Rotate dialog box. Specify the degree and center of rotation. Click Apply to see the effect of the settings, or click OK to accept the settings.

This design consists of rotated (black) and skewed (color) type. Each word was divided into two text objects, which were arranged to create the effect.



Flipping text

You can flip text horizontally, vertically, or both. Choose Effects > Flip to create mirror-image copies of text.

- **To flip text:** Select the text object(s). Depending on the direction you want to flip text, choose Effects > Flip > Horizontal, Vertical, or Both Axes. Canvas implements the setting immediately.



Shadow effects

In Canvas, when you apply a shadow to text, the shadow is a separate object that you can color, edit, and apply effects to independently of the original text object. By applying the right combination of effects, you can achieve oblique shadows and other lighting effects.

Since Canvas creates a separate object for the shadow, changes to the original text object do not change the shadow. Finalize text before applying shadows to ensure that the text is the same for both objects.

To create a shadow

1 Select the text object(s) to which you want to apply shadows.

2 Choose Effects > Shadow to open the Shadow dialog box.

3 Specify Object or Image. Image activates the Image Options area.

4 Specify the offset amounts as well as a color for the shadow.

5 In the Image Options area, specify Gaussian Blur, mode, resolution, and anti-alias.

Canvas creates the shadows and arranges them behind the original text object(s).

Text shadow effects

Combine Canvas effects to create different types of shadows.

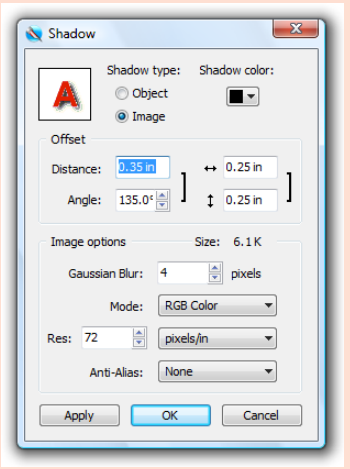
A An object shadow, slightly offset and shaded black.

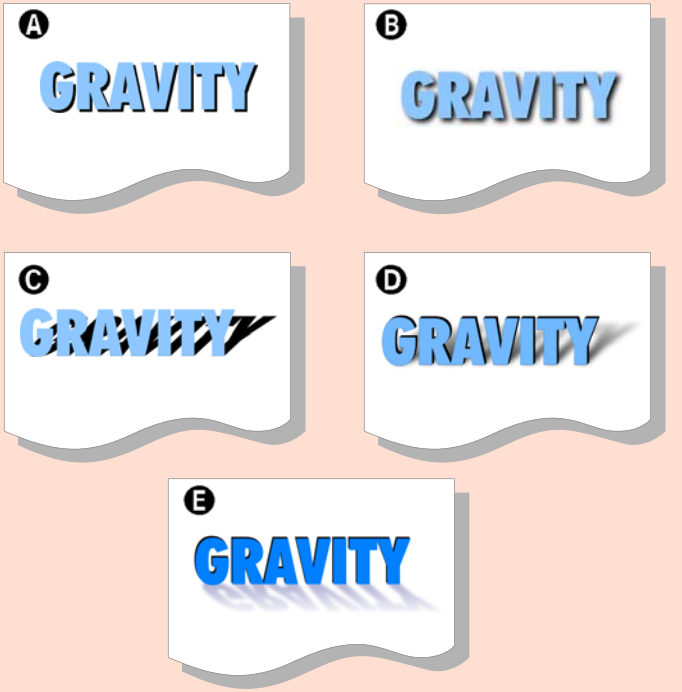
B A black image shadow, slightly offset with Gaussian Blur

C The shadow object was skewed to create an oblique shadow.

D This example consists of three objects: the original text object, a slightly offset shadow, and an oblique shadow.

E This example consists of three objects: the original text object, a slightly offset shadow object, and a duplicated shadow object. The duplicate has been flipped, skewed, and filled with a gradient ink.





Envelope text effects

✓ **Tip**
You cannot edit text after applying an envelope effect. however, you can apply an extrusion to an enveloped object.

Use the Envelope effect to warp and distort type to create new character forms and stretch text like rubber. When you apply this effect to a text object, you can drag selection handles to reshape text. Depending on the type of envelope, text stretches in different ways. Using this effect, add perspective to text or simulate stretching type around a 3-D object (see "Enveloping objects," page 20.12 for more information about the Envelope effect).

- **To edit the envelope of a text object:** Select a text object and choose Effects > Envelope. Choose a type of envelope effect in the pop-up menu and click Apply. Then, drag the envelope handles to reshape the text.

Extruding text

✓ **Tip**
You cannot edit text after applying an envelope effect.

Extrude text and add lighting effects to make text appear three-dimensional. As with vector objects, you can rotate and scale extruded text to change the apparent depth, size, and orientation. For text, you can only use the Parallel option in the Extrude palette.

Canvas removes stroke and fill attributes before extruding text because they can interfere with the three-dimensional effect. Add color to extruded objects by choosing a fill ink from the Presets palette and a color for the light source in the Extrude palette (see "Extruding objects," page 20.15 for more information about the Extrude effect).

Extruded text with lighting effects



To extrude text

1 Select a text object and choose Effects > Extrude to open the Extrude palette.

2 Choose Parallel in the menu

3 Configure the settings and click Apply.

4 Use the extrusion handles to shape and rotate the text.

Converting text to paths

Canvas can create path outlines of characters so you can edit the shape of each character. Once you convert text to paths, Canvas treats the paths as objects. You cannot edit the objects as text (change font type, type size, or run spell check, etc.).

To convert text to paths

1 Select a text object and choose Object > Path > Convert to Paths. If the text object contains multiple characters, Canvas creates a grouped object.

2 To ungroup the object and edit individual characters, choose Object > Ungroup. You can also use the Direct Selection tool to select individual objects without ungrouping.

3 Double-click an object to place it in path edit mode. To put several shapes in path edit mode at the same time, select multiple objects and choose Object > Path > Edit Path.

4 Use path-editing techniques to change the object, and then press Esc to exit edit mode.

Typing text on paths

Use the Path Text tool to type text so it follows the path of a vector object, such as a circle, polygon, or open curve. You can also use the tool to create text that flows along multiple paths.

To type text on a path



1 Select the Path Text tool. In the document window, the pointer is an arrow. The arrow changes to an I-beam when you point to a vector object path.

2 Click the path to set the insertion point. Begin typing and the text follows the vector path. You can type multiple lines of text. To start a new line, press Enter at the end of the previous line.

3 When you finish typing, press Esc. The text object becomes selected.



Flowing text

As you type text on a path, if you reach the end, you can flow text to another path. Click the overset symbol at the end of the text object. Then, click the next vector path at the point where you want the overset text to start flowing. Continue typing to enter additional text.

If you don't want to flow overset bound text, resize the path so that all the bound text can flow along it. If no text is overset, the overset symbol does not appear at the end of the text object.

To link text to another path with the Text Link tool

1 Select the Text Link tool, and the pointer displays the number "1."

2 Click the first text object, and the pointer changes to the number "2".

3 Click the object to which you want the text to flow.

4 Press Esc when you finish.

Adjusting text on a path See the section about adjusting bound text, starting with "Binding text to vector objects" on page 32.6, for information on changing the text baseline, flipping the text, and adjusting the spacing between the text and the path.

V

SPRITE TECHNOLOGY

CHAPTER 33

SPRITEFFECTS

In Canvas, you could always modify objects with image-editing techniques — if you converted the objects to images; however, you lost the ability to edit vector paths and text. Also, applying filters and adjustments would change an image permanently. Canvas' SpriteEffects technology lets you apply image filters and adjustments to vector objects, images, text, and grouped objects.

You can apply effects temporarily, adjust effects settings, change the order of effects, and hide or remove effects individually. You don't have to use Undo or save intermediate versions to preserve an original illustration, since objects remain editable. You can still edit object paths, insert and delete text, as well as change inks and strokes.

When SpriteEffects are printed or exported to file formats outside of Canvas, the effects are rendered as images. This is like taking a snapshot of the objects and printing the resulting image. In your Canvas documents, the objects keep their original editing features.

Before SpriteEffects, commands such as Blur, Hue/Saturation, Invert, Emboss, Twirl, and many others could be applied to paint objects (images) only. SpriteEffects technology offers new power and flexibility for creative art, technical illustration, and graphics production.

Using SpriteEffects

There are two ways to use SpriteEffects:

- Apply effects directly to objects
- Apply effects to lens objects

Applying effects directly to objects

You can apply image effects and adjustment commands directly to vector, text, paint, and group objects. You could apply the Blur command to a text object, then use the Hue/Saturation command to highlight the text edges with color for example.

When you apply effects directly, an entire object, including its fill ink, pen ink, and stroke, is affected.

Applying effects to lens objects

Another way to use SpriteEffects is to create a *lens* object from a vector or text object. Then, you apply effects to the lens. The effects will appear on objects that are viewed through the lens.

Lenses can magnify objects and view objects in other locations. If you move the *viewpoint* of a lens, whatever is behind the viewpoint will appear in the lens. If you move the lens, the viewpoint can remain fixed or move with the lens.

Using plug-in filters with SpriteEffects

Plug-ins must be Adobe Photoshop 4.0. compatible and also support Photoshop Actions to be used with SpriteEffects.

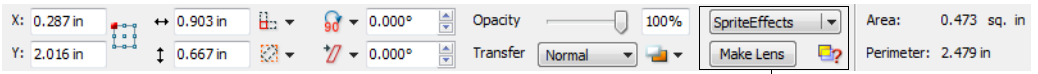
Plug-ins can be installed by copying them to the Plug-ins folder in the Canvas Tools folder. For information on settings and options for a plug-in, refer to the documentation from the manufacturer.

Note: Effects commands in the Image > Filter and Image > Adjust submenus are available for traditional image editing. These commands are not available when other types of objects are selected.

Applying an effect

Because many types of filters and adjustments can be applied through SpriteEffects, general procedures are given here. You can locate specific information for effects commands by looking up the commands in the index.

When a vector or text object is selected, the SpriteEffects icon and SpriteEffects menu appears in the Properties bar.



SpriteEffects icon & menu

To apply a single effect

Use this basic procedure to apply one effect using a filter or adjustment command. You can apply an effect by accessing the SpriteEffects menu in the Properties bar or by choosing Object > SpriteEffects > Add Effect.

1 Select an object. You can select any type of object, including a lens.

2 Choose the command to apply. If the selected command has no options, Canvas applies the command to the object, which remains selected.

3 Do the following if there are options for the command and a dialog box appears:

- Choose the settings and options you want to use.
- If there is a Preview option, select it to see the effect of the current settings.
- Click OK to apply the current settings.

- **To apply multiple effects:** Repeat the procedure above to apply more than one effect to an object.

Using the SpriteEffects palette

All SpriteEffects features are available in the palette, except Attach and Detach, which are in the Object > SpriteEffects submenu.

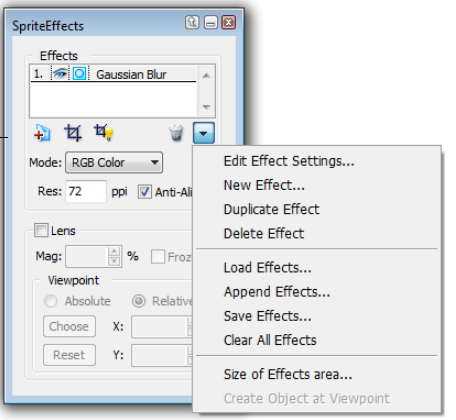
- **To display the SpriteEffects palette:** Choose Object > SpriteEffects > Show Palette. You can also open the palette by clicking the SpriteEffects icon in the Properties bar. Keep the palette open while you work or dock it on the Docking bar.

If an object is selected, its SpriteEffects settings are shown in the palette. When no object is selected, the controls in the palette are not available.

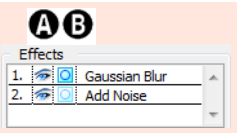
SpriteEffects palette

The SpriteEffects palette is the control center for applying effects, creating lenses, and editing effects on objects.

New Filter Effect button



Using the effects list



Effects list

A Show effect

B Mask

When you select an object that has effects, use the list at the top of the SpriteEffects palette to arrange the order of effects. You can also show or hide effects, and change the mask setting.

Effects that are applied to the selected object are listed in order of application, with the first effect at the top. If no effects appear in the list, the selected object has none, or more than one object (or no object) is selected.

To modify effect's settings

1 Select the effect name and choose Edit Effect Settings in the palette menu. Or, double-click the effect name in the Effects list.

2 Use the dialog box to adjust the settings for the effect.

3 Click OK to apply the current settings.

Some filter and adjustment commands (including Blur, Desaturate, Invert, and Sharpen) do not have editable settings, so choosing Edit Effect Settings or double-clicking the effect does nothing.

To arrange effects

To change the order in which effects are applied, drag an effect up or down and drop it in the list.

To show and hide effects

1 Select the object whose effects you want to hide/show.

2 Click the eye symbol to hide/show the effect.

Hiding an effect temporarily removes the effect from the object. Showing an effect re-applies the effect to the selected object.

To duplicate or remove effects

Use the SpriteEffects palette to duplicate or remove effects that have been applied to a selected object. Removing an effect deletes it from the Effects list.

1 Select the object whose effects you want to edit.

2 In the SpriteEffects palette, do any of the following:

Duplicate Effect Select an effect in the list and choose Duplicate Effect in the palette menu.

✓ Tip

If you just want to temporarily hide an effect, click the eye symbol in the Effects list.

Delete Effect To remove an effect, select the effect in the list. Click the trash can or choose Delete Effect in the palette menu.

Clear All Effects To remove all effects from the selected object, choose Clear All Effects in the palette menu.

To add effects

Each effect that you apply appears in the Effects list.

✓ **Tip**
Select an object that has no effects, one that has effects, or a lens.

1 Select an object to which you want to apply effects.

2 In the SpriteEffects palette, click the New Filter Effect button or choose New Effect in the palette menu. A dialog box appears.

3 Select an effect command from the menu and click OK. If there are no options for the command, Canvas applies the effect.

4 If there are options for the command, a dialog box appears. Configure the options and click OK.

To save effects

You can save effects that have been applied to an object as a set. After saving an effects set, you can apply the set to other objects.

1 Open the SpriteEffects palette.

2 Select an object or lens that has effects you want to save.

3 Choose Save Effects from the SpriteEffects palettes menu.

4 A directory dialog box appears. Enter a name and select a location to save the effects set. Click Save to save the set in a file.

To apply saved effects

1 Open the SpriteEffects palette.

2 Select the object you want to apply the effects set to. You can select an object with no effects, one that has effects, or a lens.

3 Do either:

- **To replace the selected object's effects with the effects set:**

Choose Load Effects in the palette's menu.

- **To add the effects set to the effects on the selected object:**

Choose Append Effects in the palette's menu.

4 A directory dialog box appears. Select an effects set file and click Open. Canvas applies the effects to the selected object.

Pasting effects

You can use the Paste Attributes command to transfer effects from one object to another.

To paste SpriteEffects

1 Copy an object that has effects to the Clipboard.

2 Select an object to which you want to transfer the effects.

3 Choose Edit > Paste Attributes. The Paste Attributes dialog box opens.

4 Select the SpriteEffects option and click OK. Canvas will apply the effects (except lens settings) to the selected object.

Detaching and attaching SpriteEffects

The Detach and Attach commands transfer filters and adjustments between objects and lenses.

Detach removes effects from a selected object and applies the effects to a new lens that is the same size as the object's bounding box.

Attach applies effects from a lens directly to an object. Attaching is a way to apply multiple effects to an object at once.

To detach effects

1 Select an object (not a lens) that has effects.

2 Choose Object > SpriteEffects > Detach.

3 Canvas removes the object's effects and applies them to a new lens, which appears offset from the original object and is selected.

To attach effects

1 Select a lens object that has effects you want to apply, and a non-lens object to receive the effects. The objects do not have to be the same size or overlap and either one can be first in the stacking order.

2 Choose Object > SpriteEffects > Attach. Canvas applies the effects, except the lens properties, to the selected object. The original lens object is not changed.

✓ **Tip**
You can also use the Load Effects, Save Effects, and Append Effects commands in the SpriteEffects palette to transfer sets of effects.

SpriteEffects options

In the SpriteEffects palette, you can set the color mode, resolution, and anti-aliasing for the effects applied to a selected object. These options control how SpriteEffects are rendered for printing and export, as well as the display of SpriteEffects in Canvas.

When you change a setting, the change is applied immediately to the selected object.

Mode

From the Mode menu, select the color mode to use for rendering SpriteEffects.

The Mode option is used for rendering all the effects applied to an object; e.g., if you choose Grayscale, the object and effects applied to it will appear in gray shades on screen and when the object is printed or exported.

Select a mode that is appropriate for the medium you use. *RGB* is best for Web graphics, screen display, and output to a film recorder. *CMYK* is appropriate for process-color printing and color separations for commercial printing. *Grayscale* is appropriate for black-and-white publishing.

None is available in the mode menu only when the selected object is a lens that has no effects applied to it; however, the lens can have a magnification value and remote viewpoint.

If you select None, the lens object is not rendered for printing or export. This can be more efficient and produce better output when a lens displays vector objects or high-resolution images. This option is useful if you use lenses without effects to show close-ups or call-outs of diagrams.

Resolution

Enter the resolution in ppi for rendering SpriteEffects. A high resolution makes effects appear smoother; however, higher resolution requires more memory and slows down printing.

For Web graphics and screen display, 72 ppi is recommended. For office printing, 100 to 200 ppi is usually sufficient. For commercial printing, a range of 150 to 300 ppi is recommended for halftone images, depending on the paper and press requirements.

Anti-Alias

Select this option if you want to smooth the edges of objects in the rendering of SpriteEffects.

Selection masks

In the Effects list, a symbol to the left of each effect name shows the state of the *selection mask* for the effect. You can click the symbol to toggle the mask on ( ) and off ( ).

An active selection mask defines a selection for an effect. The selection will include objects, not empty space. The mask can preserve transparent areas, such as empty space in a group object, and space between text characters.

When the selection mask is on, the effect is based on the selection area. When the selection mask is off, the effect is based on the entire bounding box area; e.g., if you apply the Add Noise command to a circle, the selection includes only the circle, so the noise affects only the circle if the mask is on. If the mask is off, the noise appears in the entire bounding box area.

Noise applied to vector graphic



Mask on



Mask off

For a built-in effect, Canvas uses the best selection mask setting. For third-party effects, you might need to change the mask setting for the best results.

Blur effects usually require the selection mask to be off, so the blur can extend beyond the outline of an object. Other effects look best when they are based on a selection; e.g., a flame effect will cover an entire bounding box if the selection mask is off. If the mask is on, flames will rise from just the objects or text characters in the selection. This does not mean that flames can't rise above the selection, just that the effect will be based on the selection, not the entire bounding box.

When you edit the settings for an effect, Canvas displays a border on the selection, the same as the selection border that appears in images.

Effects area

When you apply effects to an object, Canvas defines a rectangular *effects area*. Usually, the effects area is slightly larger than the bounding box of the object to which the effects are applied.

There is one effects area for all effects applied to an object. Canvas tries to keep the effects area as small as possible, without cropping out any visible objects.

You can adjust the effects area using the SpriteEffects palette. The palette lets you set the effects area manually or automatically.

Modifying the effects area

You might need to enlarge the effects area to see effects that extend beyond an object's edge; e.g., Motion Blur and plug-in effects like bevel, glow, and fire usually need to extend beyond an object's outline. Also, if text characters extend outside the text object border, an effect applied to the text could be cut off.

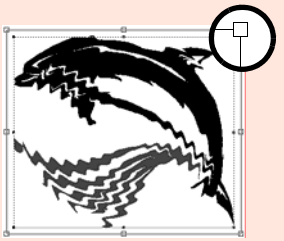
If you make the effects area smaller than an object's bounding box, the object and the effects will be cropped by the effects area border.

To size the effects area automatically

1 Select the object whose effects area you want to adjust.

2 In the SpriteEffects palette, click the smart-crop icon ( ).

3 Click Ok when the prompt appears. Canvas estimates the correct size of the effects area and makes it as small as possible.



Effects area box

To size the effects area manually

Some effects need to extend far outside an object's bounding box. In these cases, the auto-size option might not extend the effects area far enough. If this happens, you can enlarge the effects area yourself.

1 Select the object whose effects area you want to adjust.

2 Click the crop icon ( ) in the SpriteEffects palette. A box appears on the selected object. The box indicates the effects area

and has hollow handles (the object's bounding box has solid handles).

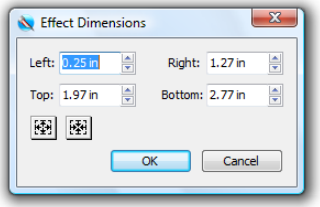
3 Drag a handle to enlarge or reduce the effects area. When the box is the size you want, click inside it.

To size the effects area precisely

You can enter values to precisely size the effects area.

1 Select the object whose effects area you want to adjust.

2 In the SpriteEffects palette, choose "Size of Effects Area" from the palette menu. The Effect Dimensions dialog box opens.



3 Do one of the following:

- Set the size of the effects area by entering the distance from the rulers' zero point to the left, top, right, and bottom sides of the effects area rectangle.
- Click a button to enlarge ( ) or reduce ( ) the size of the effects area. When you click a button, the distance values in the text boxes show the new effects area size.

4 Click OK to apply the settings.

Lens effects

You can apply effects to a lens the same as you apply effects to other objects (see "Applying an effect" on page 33.2). You also can set a magnification value and viewpoint location. These options are available in the SpriteEffects palette or after you create a lens with the Object > Convert to Lens command.

Creating a lens

You can create a lens from any object (except a lens). If you want to preserve an object, make a copy and convert the copy to a lens.

✓ Tip
You can also choose Object > Convert to Lens or select the Lens option in the SpriteEffects palette.

To create a lens object

1 Select one object. You can select any type of object.

2 Click the Make Lens button in the Properties bar. The object becomes a lens and remains selected.

Fill inks are removed when vector or text objects are converted to lenses. The stroke on a lens is not affected by the effects applied to the lens.

The default lens effect is normal (100%) magnification. To add additional effects, see “Applying an effect” on page 33.2.

To copy lenses

You can create copies of lenses the same ways that you copy other objects.

1 Select the lens object to be copied.

2 Choose either Edit > Copy or Edit > Duplicate.

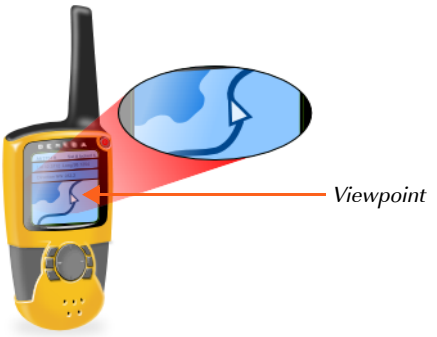
3 Choose Edit > Paste to paste the copy if you choose Copy.

Setting lens magnification

You can set the magnification level of a lens so objects appear magnified (or reduced) in the lens. The default lens effect is normal (100%) magnification. You can set the magnification level with or without other effects applied to a lens.

Basic lens

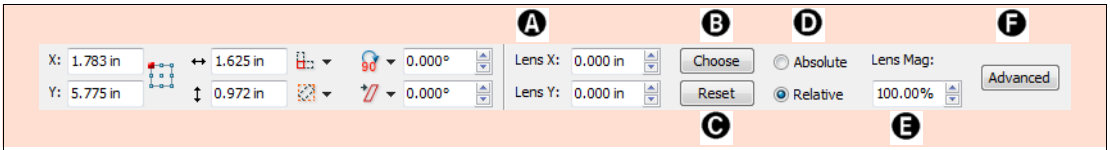
With the magnification set to 300% and its viewpoint set about 2 inches to the right, a lens made from a circle shows a detail view of an illustration.



Magnification affects the view through the lens to the lens viewpoint. If the default viewpoint (at the center of the lens) is used, the lens displays a magnified view of objects behind the lens. If the viewpoint has been moved, the lens shows a magnified view of objects behind the viewpoint (see “Setting a lens viewpoint” on page 33.12). These options are available in the Properties bar, SpriteEffects palette or after you create a lens with the Object > Convert to Lens command.

To set magnification

1 Select a lens object (see “To create a lens object” on page 33.10). The lens object settings appear in the Properties bar.



Lens object settings

A Lens X/Y. If Absolute is selected, these settings refer to the distance from the rulers' zero point to the viewpoint. If Relative is selected, these settings refer to the distance from the center of the lens to the viewpoint.

B Choose. Click this button when you want to click in the document to set the viewpoint for a lens.

C Reset. Click this button to reset the viewpoint to the center of the lens object.

D Absolute or Relative. Absolute refers to the distance from the rulers' zero point to the viewpoint. Relative refers to the distance from the center of the lens to the viewpoint.

E Lens Mag. Enter the magnification value in the text box (0.000001% to 204,800%). When you change the magnification value, the lens view changes.

F Advanced. Click this button to open the SpriteEffects palette.

2 Enter the magnification value in the Lens Mag text box in the Properties bar. You can set magnification from 4 to 3,200%.

Note: You can also configure the lens settings in the SpriteEffects palette.

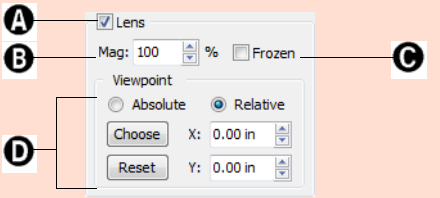
Lens options (SpriteEffects palette)

A Select to create a lens

B Magnification percentage

C Freeze lens view

D Viewpoint settings



When you change the magnification value, the lens view changes, unless the Frozen option is selected in the SpriteEffects palette (see "Freezing a lens," page 33.15).

Setting a lens viewpoint

The *viewpoint* of a lens is a point in the document that appears in the lens. The default viewpoint is at the center of the lens, so the lens displays whatever is directly behind it.

You can move the viewpoint of a lens to make any location appear in the lens, which is useful for displaying close-ups of illustrations.

The center of a lens is focused on the lens viewpoint. If you move the viewpoint, the new location appears centered in the lens object.

The viewpoint of a lens can be set anywhere on the same page, slide, sheet, or frame as the lens object. Lenses can display objects on all visible layers on the same page, sheet, slide, or frame. Lenses do not display objects on other pages, sheets, slides, or frames.

To set a viewpoint visually

Use this procedure when you want to click in the document to set the viewpoint for a lens.

1 Select the lens object.

2 Select Relative or Absolute in the Properties bar or SpriteEffects palette (see "Absolute and relative viewpoints" on page 33.14).

3 Click Choose.

4 Move the pointer in the document and click to set the viewpoint. The area you click appears centered in the lens.

To set a viewpoint precisely

Use this procedure to enter values to position a viewpoint.

1 Select a lens object.

2 Use one of the following options:

Absolute position Select Absolute and enter horizontal (X) and vertical (Y) distances from the rulers' zero point to the viewpoint; e.g., enter 0 in the X and Y boxes to set the viewpoint at the zero point. The viewpoint does not move if you move the lens.

Relative position Select Relative and enter horizontal (X) and vertical (Y) distances from the center of the lens to the viewpoint. Positive values move the viewpoint down and right of the lens center. Negative values move the viewpoint up and left of the lens center; e.g., to set the viewpoint 1 ruler unit left of the lens center, enter -1 (X) and 0 (Y). The viewpoint moves if you move the lens.

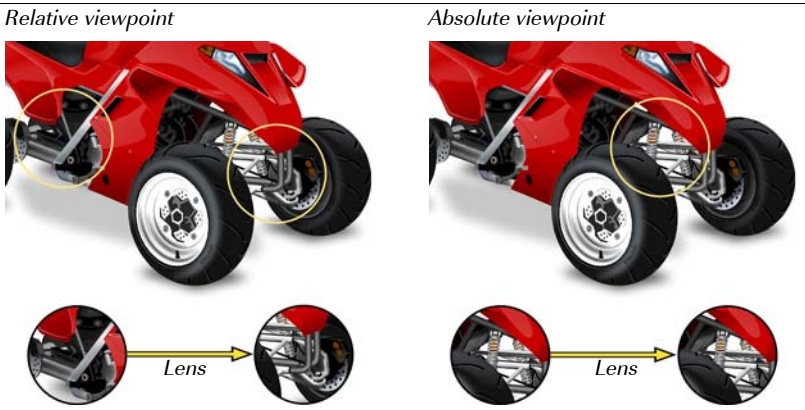
To reset a viewpoint

1 Select a lens.

2 Click the Reset button in the SpriteEffects palette to reset the viewpoint to the center of the lens object.

This resets the location values to 0, 0 if Relative is selected. If Absolute is selected, the location is measured from the rulers' zero point to the lens center.

To set the relationship of the viewpoint to a lens object, select Absolute or Relative in the SpriteEffects palette.



Absolute and relative viewpoints

An absolute viewpoint is set at a specific location in a document and does not move. The lens shows the same absolute point no matter where the lens is placed on the page.

A relative viewpoint is set at a specific distance from the center of the lens. If you move the lens, the viewpoint moves the same distance and direction. When Frozen is selected, the view in the lens does not change; if you deselect the Frozen option, the view then changes to the current viewpoint.

To create object at lens viewpoint

It is possible to create a vector object at the lens viewpoint.

Note: The shape of the vector object will be the same as the lens object.

1 Select the lens object and choose a viewpoint.

2 Click the Advanced button to open the SpriteEffects palette.

3 Open the palette menu and select Create Object at ViewPoint.

4 You can modify the inks and strokes of the new object and also apply any vector effect.

Lenses and stacking order

The view through a lens depends on the stacking order of the lens, as well as the position of the viewpoint.

✓ Tip
Use the stacking order to change a lens view. Send a lens to the back of the stack so nothing appears in it. Bring it to the front so all the objects at the viewpoint appear in the lens.

Only objects that are *behind* a lens in the stacking order can be seen through the lens. A lens and its viewpoint are at the same level in the stacking order.

Due to the stacking order, objects that you create *after* you create a lens cannot appear in the lens. Also, objects that you move to the front of the stack after you create a lens cannot appear in the lens.

You can use a lens to display layered views; e.g., you can draw a map and create a lens to show a close-up of an area. If you add text after you create the lens, the text is higher in the stacking order. The text will not appear in the lens close-up of the map.

Freezing a lens

Select the Frozen option in the SpriteEffects palette to freeze the lens' current view; i.e., the view won't change unless you deselect the Frozen option. If you change the fill color of an object, the lens will not show the change. Deselect the Frozen option and Canvas updates the lens view.

✓ Tip
The Frozen checkbox is only available if you select Grayscale, RGB, or CMYK from the Mode menu. If None is selected, the Frozen checkbox is not available.

Selecting Frozen overrides a lens relative viewpoint; the lens will show the same view after being moved. If you deselect Frozen, the lens will display the new viewpoint location.

Freezing a lens can avoid slow performance when you edit objects shown in a lens. When you finish editing, select the lens and deselect the Frozen option to update the viewpoint.

To freeze a lens

1 Select a lens.

2 Select the Frozen checkbox.

3 Deselect the Frozen checkbox to show the new viewpoint.

Sharing documents with SpriteEffects

Since SpriteEffects are "live" effects that can be edited and updated, there are a few issues to consider if you plan to share documents that contain SpriteEffects.

Effects that are applied to an object need to be available to other Canvas users if they share the document and need to edit the effects. If you use only built-in Canvas effects, this is not a problem. If you use third-party plug-ins to apply effects, other users must have the same plug-ins installed. Without the plug-ins, they cannot

edit effects applied in a Canvas document (see "Using plug-in filters with SpriteEffects," page 33.2).

If you export a document using an image file format, the effects will be rendered into an image (as described below), and the effects plug-ins will no longer be needed. Rendering is necessary because other file formats do not support SpriteEffects on objects.

Printing effects

When you print from Canvas, preserving effects should not be a problem, as long as effects plug-ins are available in Canvas when the document is printed. Whether you print directly to an output device or to a PostScript file, Canvas renders effects before printing. This is true unless, in the Print dialog box, you set Transparency Rendering to "Don't Render Transparent Objects." When this option is selected, the only SpriteEffects that will be printed are lens objects that have no effects except magnification and viewpoints.

Rendering effects

✓ **Tip**
Effects and objects are not editable after conversion to images.

Preserve the appearance of effects by rendering objects before sharing a Canvas document. Rendering converts SpriteEffects and objects into static images.

You can use several methods to render SpriteEffects:

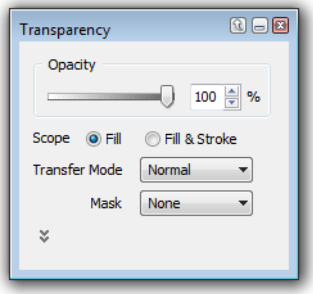
- Use the Camera tool to select an area of an illustration to render.
- Select objects that have effects, including lenses, and choose Image > Area > Render.
- Save a document in an image file format, such as BMP, GIF, JPEG, PCX, or TIFF. Canvas renders the document as an image before saving the file.

CHAPTER 34

SPRITELAYER EFFECTS

SpriteLayer effects let you apply transparency to objects and text. You can use SpriteLayer transparency to create collages, Web graphics, layered illustrations, "ghosted" text, vignettes, and texturing.

Using the Transparency palette



Tip

The palette works with a single selected object. The controls in the palette are not available when more than one object is selected.

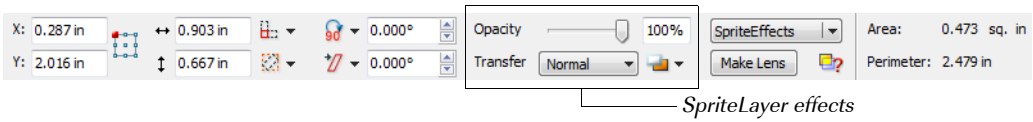
The Transparency palette is a control center for SpriteLayer effects. The palette includes controls and options for opacity, masks, transparency scope, and transfer modes.

- **To open the Transparency palette:** Choose Window > Palettes > Transparency or Object > SpriteLayers > Show Palette.

- Use the Opacity slider to set the opacity of a selected object. The effect is the same as using the Opacity slider in the Properties bar (see "Opacity effects" on page 34.2).
- Use the Scope options to control transparency effects in vector objects (see "Controlling the scope of transparency effects" on page 34.4).
- Change the transfer mode of a selected object using the Transfer Mode menu (see "Using transfer modes" on page 34.18).
- Apply channel masks and vector masks using the Mask menu (see "Transparency masks" on page 34.5).

You can also quickly apply SpriteLayer effects by using the controls in the Properties bar.

Note: You must the Transparency palette to access the Mask menu.



SpriteLayer effects

Transparency palette options

Options for opacity, transfer mode, scope, and masks appear in the Transparency palette. When an object is selected, the Transparency palette displays the object's opacity and transfer mode.

Opacity. Drag the slider or enter a percentage to set the opacity of a selected object.

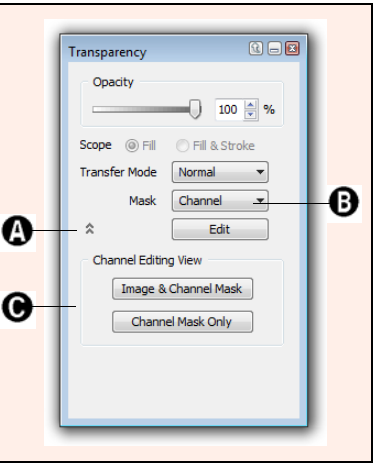
Scope. Set the transparency scope for a selected vector object.

A Click to show or hide the mask options.

B Choose Channel to create a channel mask. Choose a vector mask style to create a vector mask. If the object has a mask, the menu shows the type of mask. Choose None to remove the object's mask.

Edit. When a selected object has a channel mask or vector mask, click Edit to edit the mask.

C When a masked object is selected, mask options appear in this area.



Opacity effects



Opacity is a basic transparency effect that can be applied to any object.

When an object's opacity is less than 100%, the object appears partly transparent. You can reduce the opacity of a text object, for example, so a background image is visible through the type.

You use the Opacity slider to set the opacity of objects. The Opacity slider is available in the Properties bar and the Transparency palette. The slider in the Properties bar will set opacity for one or more selected objects. The slider in the Transparency palette is available only when a single object is selected.

Opacity affects the overall transparency of an object, so the Opacity slider is a master control for all transparency effects applied to an object.

For example, you can use a channel mask to make an oval vignette from a photograph. At the edge of the oval, the photograph becomes completely transparent. If you then reduce the opacity, the visible part of the image becomes partly transparent.

When an object's opacity is less than 100%, anything in the background, including the illustration area, can affect the object's appearance. The appearance of colors in an object can also be affected by the object's transfer mode (see "Using transfer modes" on page 34.18).

Defining opacity

"Transparency" and "opacity" are opposite terms that describe the ability to see through an object.

Greater transparency means it is easier to see through something; greater opacity means it is harder to see though it.

In percentages, 100% opacity equals 0% transparency. Those values describe objects you can't see through. 1% opacity equals 99% transparency. Those values describe almost completely clear objects.

All Canvas objects have an opacity. You can set opacity from 1% to 100% in 1% increments. The opacity of a new object is 100%. When you copy an object, the copies have the same opacity as the original object.

In this manual, the word "transparency" is often used as a general term for several related effects. The word "opacity" is used to refer to a specific effect and a specific property of objects.

In other words, an object's "transparency" can result from various factors, including ink settings, the transfer mode, a channel mask, or another effect. An object's "opacity," on the other hand, is a specific setting controlled by the Opacity slider.

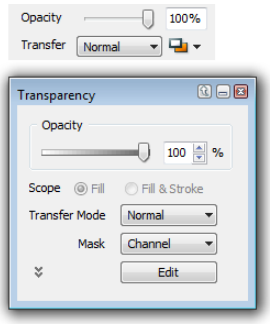


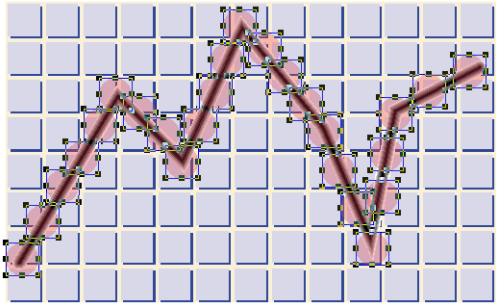
To set the opacity of an object

You can use either the Opacity slider in the Properties bar or Transparency palette.

1 Select the object whose opacity you want to change.

2 Drag the Opacity slider to the left to decrease opacity; drag to the right to increase opacity. The opacity percentage appears at the right of the slider.





Drag the Opacity slider in the Properties bar or Transparency palette to set the opacity of selected objects

Setting opacity for multiple objects

Use the Opacity slider in the Properties bar to set the opacity for more than one object. Each selected object will have the same opacity setting.

✓ **Tip**
If you ungroup an object, the group opacity setting is removed and the opacity of each separate object is restored.

- **To adjust the opacity of a group object:** Use the Opacity slider in the Properties bar or in the Transparency palette, since a selected group object is considered a single object. When a group object is selected, changing the opacity applies to the group as a whole. Objects that were opaque do not become transparent to other objects in the group if you reduce the opacity of the group object.

Consider a group of three objects whose opacities are 30%, 60%, and 100%. If you set the opacity of the group object to 50%, the opacities of the individual objects will appear to be 15%, 30%, and 50% relative to the background. If you ungroup the objects, their opacities will be restored to 30%, 60%, and 100%.

Controlling the scope of transparency effects


Fill


Fill & Stroke

All vector objects have scope settings that control what parts of the objects are affected by transparency.

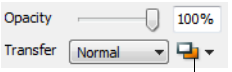
The scope setting can limit transparency to an object's fill ink only. Or, it can apply transparency to the fill ink and the pen ink on the object's stroke.

The scope setting controls all transparency effects applied to vector objects, including opacity, channel masks, vector masks, and transfer modes.

Each vector object has a scope setting. Scope settings do not affect text objects, paint objects, or group objects.

You can change the scope setting of a selected vector object by using the Scope controls in the Properties bar or the Transparency palette (see "Using the Transparency palette" on page 34.1).

The scope setting can affect the time needed to print an object. When an object has a reduced opacity setting (but no other transparency effects) and the scope is Fill, Canvas can print the object on PostScript printers without rendering. If the scope is Fill & Stroke, Canvas renders the object and prints it as an image. An image usually contains more data than a vector object, so this can increase the time required to print an object.



Scope options

To set an object's transparency scope

1 Select a vector object.

2 Select a Scope option in the Properties bar or Transparency palette:

- **To apply transparency effects to the entire object:** Select Fill & Stroke.
- **To apply transparency effects to the object's fill ink only:** Select Fill.

Transparency masks

Transparency masks let you create complex transparency effects. You can use transparency masks with vector, paint, text, and group objects.

✓ Tip
An object can have only one mask, but it can have a mask along with other effects such as opacity and transfer mode.

Channel masks and *vector masks* are the two types of transparency masks available. You can apply either mask type to vector, text, paint, and group objects.

Channel mask Creates transparency based on a grayscale image. A channel mask is part of an object, the same way an image channel is part of a paint object. You can use painting tools and image-editing techniques in a channel mask.

Vector mask Creates transparency based on a vector gradient or the colors of a vector object. Vector masks can produce gradual transparency changes the same way that gradient inks produce gradual color changes. You can drag a tool to create radial, linear, elliptical, and rectangular vector masks, or you can use an object as a vector mask.

Changing the transparency preview

When you edit paint objects or channel masks, Canvas previews transparency effects according to a preference setting. You can temporarily change the preview when you are in channel mask edit mode.

When you edit a channel mask with no preview, a checkerboard pattern lets you focus on the transparent object. The checkerboard hides objects behind the transparent object, while showing the transparent areas in the object you are editing.

Note: In Total Preview mode, Canvas shows objects that are in front and in back of a paint object or channel mask you are editing.

- **To turn off the transparency preview:** Press the Asterisk (*) key, or choose Hide Transparency Preview in the context menu.

- **To restore the transparency preview:** Choose Show Transparency Preview in the context menu. If you don't choose the command, Canvas restores the preview setting each time you leave edit mode.

- **To set the Transparency preview:** Choose File > Configuration Center. Open the Screen Rendering manager and select an option in the Transparency area. Click Background Preview to preview background objects only. Click Total Preview to preview background and foreground objects. Click No Preview to display transparent objects against a checkerboard pattern for editing.

Note: If you select the No Preview preference, you can't use the context menu to change the preview while you edit an object.

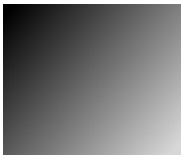
The preview preference affects what you see when you paint in a transparent paint object or edit any paint object. If objects are in front of the paint object, you can see the objects while editing if you select Total Preview. If you select Background Preview or No Preview, foreground objects are not displayed when you edit a paint object or a channel mask.

Channel masks

A channel mask is a special channel that defines transparency in an object. While channels are typically associated with paint objects, you can apply a channel mask to any type of object.



Vector Object



Channel mask



Transparency effect

Like an alpha channel in a paint object, a channel mask is basically a grayscale image. Channel masks can be edited using image-editing tools and techniques, similar to alpha channels.

You can think of a channel mask as a template for transparency. The channel mask is the same size as the masked object and is aligned with it. In the case of a paint object, the channel mask has the same resolution and number of pixels as the paint object.

Channel masks, like grayscale images, contain pixels that are assigned 256 possible lightness levels, or luminance values. Luminance values in a channel can range from 0 (black) to 255 (white).

In an alpha channel, luminance corresponds to selection intensity. In a channel mask, luminance values correspond to 256 levels of transparency, from 100% to 0% transparency, in the masked object. Black pixels (0 luminance) produce 100% transparency, while white pixels (255 luminance) produce 0% transparency.

Therefore, when you paint in a channel mask, painting with black produces clear areas and painting with white produces opaque areas in the masked object. Painting with gray produces partial transparency relative to the gray value, with darker grays producing greater transparency than lighter grays.



Black in a channel mask (left) produces 100% transparency

A feathered edge produces partial transparency

Channel mask and paint object



Masked object

Keep in mind that an object's appearance can be affected by its transfer mode, scope setting, and opacity, in addition to a channel mask. Changing the transfer mode can completely change the appearance of an object that has a channel mask (see "Using transfer modes" on page 34.18).

Creating channel masks

You can create a blank channel mask, or create a channel mask from a paint object. You create a channel mask when you render objects (see "Rendering objects and images" on page 22.23).

You can use the Transparency palette, Sprite tool, or the Channels palette to create blank channel masks (see "Channel masks," page 25.25 for more information about the Channels palette). In the Transparency palette, the Mask menu shows "Channel" when a selected object has a channel mask.

To create a channel mask

This procedure creates a blank channel mask for an object.

✓ **Tip**
You can also choose Object > SpriteLayers > New Channel Mask.

1 Select a text, paint, vector, or group object to mask.

2 Select Channel from the Mask menu on the Transparency palette or press Ctrl and double-click the object.

- If the object to be masked is not a paint object, a dialog box asks you to set the resolution of the mask. Enter a resolution from 1 to 2,540 ppi and click OK.
- If the object is a paint object, the channel mask's resolution will be the same as the paint object's resolution.

3 The object appears in channel mask edit mode, with the object visible and the channel mask selected. You can edit the channel mask with painting tools (see "Editing channel masks" on page 34.9).

4 Press Esc to leave edit mode when you finish.

When you create a new channel mask, the channel is filled with white pixels. At this point, the channel mask produces no transparency because white pixels in the channel mask produce 0% transparency in the masked object. As you edit the channel, painting with gray produces partial transparency, and painting with black produces 100% transparency.



To create a channel mask with the Sprite tool

Use the Sprite tool to apply a channel mask to a text, vector, or image object.

1 Select the object to which you want to apply the mask.

2 Select the Sprite tool and click on the selected object. The object switches to image edit mode.

Once masked, apply transparency effects to the mask with Painting tools.

To set the channel mask scope

When you apply a channel mask to a vector object, the channel mask affects the vector object's fill ink or fill ink and stroke (pen ink). To change the effect, change the Scope option in the Proper-

ties bar or Transparency palette (see “Controlling the scope of transparency effects” on page 34.4).

Masking with a paint object

You can create a channel mask by attaching a paint object to another object. If you have an existing paint object that you want to use as a channel mask, it’s quicker to use this procedure than to use the Channels palette to place the paint object in a channel mask.

To attach a channel mask

1 Place a paint object to use as a mask in front of the object to be masked. The two objects do not have to overlap or touch, but the paint object must be in front of the other object in the stacking order.

2 Select both objects.

3 Choose Object > SpriteLayers > Attach Mask. Canvas creates a channel mask and both objects remain selected. The original paint object is not changed.

If the paint object and the object to be masked aren’t the same size, Canvas scales the image of the paint object to fit the masked object.

A channel mask created from a paint object is the same as any channel mask. You can edit it the same as if you created a blank channel mask.

Like any other channel mask, a channel mask created from a paint object produces transparency relative to its gray values. If the channel mask is solid white, it creates no transparency; if it is solid black, it creates 100% transparency and makes the masked object invisible.

Editing channel masks

You can use painting tools, filters, and image-editing commands to modify the effect of a channel mask.

- **To edit a channel mask:** Place the masked object in channel mask edit mode.

Editing a channel mask is similar to editing a channel in a paint object. You can paint in the channel mask with shades of gray. You can make selections with selection tools, commands, and alpha channels. You can apply image-adjustment commands and filters to the entire channel mask or to just the selected areas.

Options for channel mask editing

You can enter channel mask edit mode using any of the following methods.

With the mouse Press Ctrl and double-click a masked object.

Note: If the object doesn't have a channel mask, this creates a channel mask and puts the object in channel mask edit mode.

In the Transparency palette Click the Edit button when a masked object is selected. This places an object with a channel mask in channel mask edit mode. If the object has a vector mask, it places the vector mask in edit mode.

In the Channels palette When a paint object is in edit mode, click the channel mask to select it for editing. When any other object is in channel mask edit mode, the channel mask is the only channel that can be selected.

To edit a channel mask

1 Select the masked object.

2 Choose Object > SpriteLayers > Edit Channel Mask. The masked object appears in channel mask edit mode.

In this mode, the channel mask is active and the object is also visible. You can paint in the channel or modify it to change the transparency of the underlying object.

3 Press Esc to leave edit mode when you finish editing. The object remains selected.

Selecting views for channel mask editing

You have a choice of view when you edit an object's channel mask. You can display the object and the channel mask together, which shows you the overall effect of the mask as you edit it. Or, you can hide the object to concentrate on the channel mask alone.

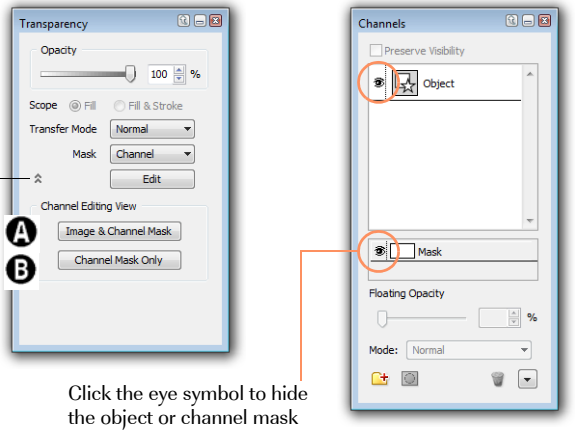
For information on selecting views with the Channels palette, see "Editing channel masks," page 25.26).

Selecting views in the Transparency palette

You can use the Transparency palette to change your view when you edit a channel mask. In channel mask edit mode, two buttons let you select editing views. Click the triangle at the lower left to expand the palette if necessary to display the buttons.

- **To view the channel mask only:** Click “Channel Mask Only” in the Transparency palette. This is the same as hiding the “object channel” in the Channels palette.
- **To view the object and channel mask:** Click “Image and Channel Mask.” This is the same as making the “object channel” and the channel mask visible in the Channels palette.

Use the Transparency and Channels palettes to change your view when you edit a channel mask



Click to show options

A Click to show the mask effect on the object

B Click to show the channel mask alone

Click the eye symbol to hide the object or channel mask

To remove a channel mask

Removing a channel mask from an object removes the transparency effect produced by the channel mask.

1 Select the masked object.

2 Choose Object > SpriteLayers > Detach Mask. Canvas removes the channel mask from the selected object.

When you detach a channel mask, Canvas converts the channel mask to a paint object and places it in the document. The paint object includes the alpha channels from the masked object if it had alpha channels.

Vector masks

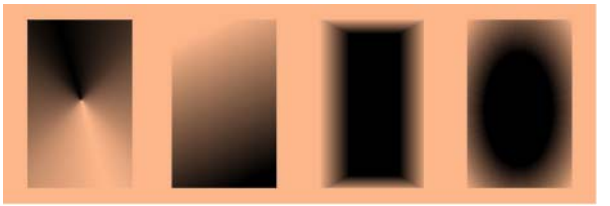
A vector mask creates a transparency effect based on a style of gradient ink, such as radial or rectangular. You can choose the style when you apply a vector mask, or you can apply an existing vector object as a vector mask.

A vector mask can be applied to any type of objects, including vector, paint, text, and group objects.

It's easy to apply vector masks. You can drag a vector transparency tool to apply radial, directional, elliptical, or rectangular style masks. If you want to use precise values for position and transparency levels, you can enter numbers in the Transparency palette. You can apply a mask quickly by selecting an object and choosing Object > SpriteLayers and selecting a vector mask style in the submenu.

Vector mask styles

(Left to right) Radial, Directional, Rectangular, Elliptical



The styles of vector masks applied by the Vector Transparency tools are related to vector gradient styles. You can think of these tools as applying a hidden gradient to a masked object. The transparency effect is based on the hidden gradient; the transparency level is relative to the lightness of the gradient shading.

For example, a linear vector gradient blends colors along a straight axis. A directional vector mask fades from opaque to transparent along a linear axis. For linear vector gradients and directional vector masks, you can specify the length and angle of the axis.

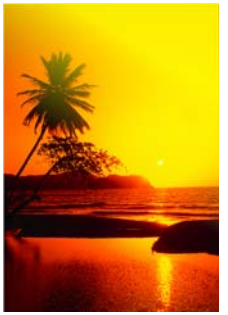
The relationship between vector gradients and vector transparency masks can be seen if you detach a vector transparency mask. With a masked object selected, choose Object > SpriteLayers > Detach Mask. Canvas removes the vector mask and places it in the document as a separate vector object. If you examine this object, you see that it has a vector gradient. The gradient style is similar to the vector mask style. The vector gradient fades from black to white in the same way that the vector mask caused the masked object to fade from transparent to opaque.

The relationship between vector masks and vector gradients also works in reverse; use a vector gradient-filled object as a vector mask (see "Masking with a vector object" on page 34.14).

A vector mask is related to a vector gradient

If you detach a vector mask, you get an object with a gradient. The grays in the gradient correspond to transparency levels in a masked object.

Detached mask



Masked object



Original object

Applying vector masks

You can apply a vector mask using the Vector Transparency tools. When an object is selected, you can drag one of these tools near or over the object to apply a transparency effect.

The Vector Transparency tools provide the easiest way to create transparency effects such as vignettes (image that appear in ovals and other shapes) as well as linear, radial, or rectangular fades.

You can use the Transparency palette to apply vector transparency effects. When you use the Transparency palette, you can specify values for the position and intensity of the effect.

In the Transparency palette, the Mask menu shows the vector mask style when a selected object has a vector mask.



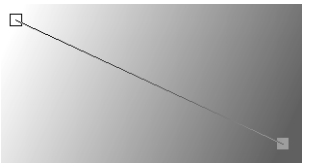
Vector Transparency tools: Radial, Directional, Rectangular, Elliptical

To create a vector mask

1 Select a text, paint, vector, or group object to mask.

2 Select a Vector Transparency tool. These tools are in the Transparency tools palette. Select the tool for the style of vector mask you want to apply: Radial, Directional, Rectangular, or Elliptical.

3 Drag the tool near or over the selected object.



As you drag, a vector line or shape appears, which represents the position of the vector transparency effect.

4 To adjust the effect, drag a handle to reposition the transparency vector.

5 Press Esc to leave edit mode.

To use the Transparency palette

You can use the Transparency palette to apply a vector mask. To open the Transparency palette, see "Using the Transparency palette" on page 34.1.

1 Select an object to mask.

2 In the Transparency palette, choose a mask style in the Mask menu.

Note: You can't select "Object" in the menu. To use an object as a vector mask, see "Masking with a vector object" on page 34.14.

3 To adjust the effect, drag the handles to reposition the transparency vector. When you finish, press Esc to leave edit mode.

To set the vector mask scope

When you apply a vector mask to a vector object, the mask affects the vector object's fill ink or its fill ink and stroke (pen ink). To change the effect, change the Scope option in the Properties bar or Transparency palette (see "Controlling the scope of transparency effects" on page 34.4).

Masking with a vector object

Create a vector mask by attaching a vector object to another object. Like other vector masks, a vector mask created from a vector object produces transparency relative to its color values; e.g., if the vector object that you attach is solid white, it creates no transparency; if it is solid black, it creates 100% transparency, making the masked object invisible.

To attach a vector mask

1 Place a vector object to use as a mask in front of the object to be masked. The two objects do not have to overlap or touch, but the vector object must be in front of the other object in the stacking order.

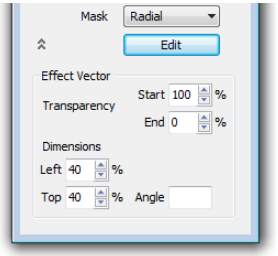
2 Select both objects.

3 Choose Object > SpriteLayers > Attach Mask. Canvas creates a vector mask and both objects remain selected. The original vector object is not changed.

If the vector object and the object to be masked aren't the same size, Canvas scales the vector object to fit the masked object.

Editing vector masks

You can edit vector masks that have been applied with the Vector Transparency tools, and masks created by attaching gradient-filled vector objects. Editing lets you change the boundary of the opaque and transparent areas of a mask. You can also add nodes for finer control of transparency levels.



The handles correspond to the values in the Mask area in the Transparency palette. When you drag a handle, the values are updated to match the new position.

To edit a vector mask

1 Select the object and click Edit in the Transparency palette (see "Using the Transparency palette" on page 34.1). Or, select the Vector Transparency tool that was used to apply the mask.

2 Drag the vector mask editing handles to adjust the position and boundaries of the vector mask.

3 Press Esc when you finish editing.

Editing values in the Transparency palette

Change values in the Transparency palette to make precise changes to a vector mask. When you change the mask settings, Canvas updates the mask handles to match the current position values.

To edit a vector mask via the Transparency palette

1 Select the masked object and click Edit in the Transparency palette.

2 Change the following values to modify the effect of the vector mask.

Transparency Start: The transparency percentage at the edge of the vector effect. If this value is 100%, the object appears completely transparent beyond this point. When you first apply a mask in rectangular or elliptical style, this point is represented by the handle at the edge of the object.

Transparency End: The transparency percentage at the end of the vector effect. If this value is 0%, for example, the object is not transparent at this point. When you first apply a mask in the rectangular

or elliptical style, this percentage corresponds to the area enclosed near the center of the object, which is 0% transparent. For radial style, the start point is the handle on the perimeter of the circle. The end is at an opposite point on the circle.

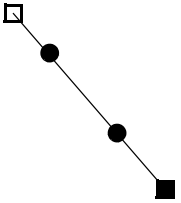
Left. The distance of the first handle from the left edge of the object, measured as a percentage of the object's width.

Top. The distance of the first handle from the top edge of the object, measured as a percentage of the object's height.

Width. The horizontal distance to the second handle from the first handle, measured as a percentage of the object's width.

Height. The vertical distance to the mask's second handle from the first handle, measured as a percentage of the object's height.

Adding nodes



Nodes (small circles) let you set several opacity levels in a directional vector mask

The default handles that appear in vector mask edit mode indicate the start and end points of the transparency gradient. For a directional mask (the most basic style), a hollow handle represents the point of 100% transparency, and the solid handle represents the point of 100% opacity.

When a vector mask is in edit mode, you can add nodes to set additional opacity levels. The default mask has a start and end point, with a smooth transition from opacity to transparency between the start and end point. When you add nodes, set the opacity level at each node.

To add a node

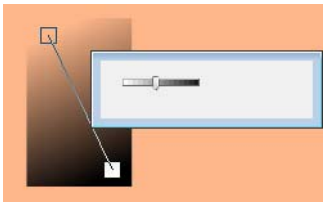
1 Select the masked object and then click the vector transparency tool for the mask style to enter edit mode.

2 Point to the vector mask and right-click. An opacity slider appears.

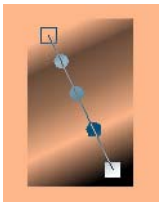
3 Use the slider to set the opacity level of the new node; i.e., 100 makes the mask opaque at the node, whereas 0 makes the mask completely transparent at the node.

4 Select a value between 0 and 100 to make the mask semi-transparent at the node.

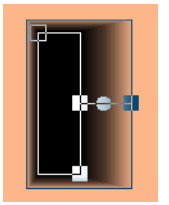
Use the pop-up opacity slider to set the opacity level of a node. You can add a series of nodes for additional control of a transparency mask.



Setting node opacity



Directional



Rectangular

When you edit rectangular or elliptical vector mask styles, add nodes to the horizontal vector that joins the inner box (which represents the area of 100% opacity) to the object's bounding box. When you edit radial mask styles, you can add nodes to the circle, which represents the 360° sweep of the mask.

Removing a vector mask

Removing a vector mask from an object removes the transparency effect produced by the mask.

1 Select the masked object.

2 Choose Object > SpriteLayers > Detach Mask. Canvas removes the vector mask from the selected object.

When you detach a vector mask, the former mask appears in the document as a separate vector object filled with a grayscale gradient.

Vector masks in paint edit mode

If a paint object has a vector mask, Canvas temporarily represents the vector mask as a channel mask if you edit the paint object.

In paint edit mode, a temporary channel mask that represents the object's vector mask appears in the Channel Mask slot in the Channels palette. The temporary mask lets you see the effect of the vector mask as you edit the paint object.

If you click in the Channel Mask slot to try to select the temporary channel mask for editing, Canvas asks if you want to convert the vector mask to a channel mask.

- Click Cancel to return to editing the paint object without destroying the vector mask.

- Click Yes if you want Canvas to convert the vector mask to a channel mask that can be edited with painting tools (see "Editing channel masks," page 25.26).

Using transfer modes

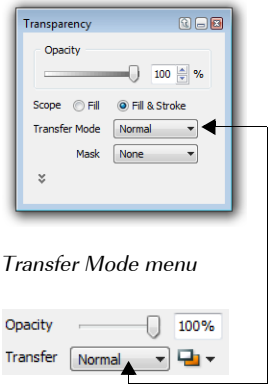
✓ Tip
For vector objects, apply transfer modes to fill inks alone or to fill inks and strokes together.

All objects — vector objects, text objects, paint objects, and group objects — have a transfer mode, which are like invisible filters that affect the appearance of colors. When objects overlap, the transfer mode of the front object can change the appearance of the back object.

Transfer modes work with transparency effects, including opacity and transparency masks; however, transfer modes can make objects appear to be transparent without reduced opacity or transparency masks; e.g., Multiply mode lets underlying colors show through an object.

The default transfer mode is Normal; i.e., the colors of overlapping objects do not mix unless the front object is partially transparent.

In addition to interacting with background objects, transfer modes can interact with the document's white background. When an object's transfer mode is Screen, anything white replaces the object's color, so the document's white background can make the object seem to be invisible.



Transfer Mode menu

To change an object's transfer mode

1 Select an object and choose a mode in the Transfer Mode menu in the Properties bar or Transparency palette.

2 For vector objects, select a Scope option for either the Fill or Fill & Stroke.

Available transfer modes

The following descriptions are based on objects with RGB colors with no other transparency effects. Each mode is described in terms of the front object when the back object's transfer mode is Normal.

Normal Colors do not blend; the color of a front object hides the colors of all objects behind it.

Multiply Overlapping colors become darker. Black produces black. White has no effect, the same as if a white object were not visible. White text, for example, reveals the background.

Screen Overlapping colors are lightened. Objects with lighter colors increase the effect. White produces white. Black has no effect, the same as if a black object were not visible. Black text, for example, reveals the background.

Overlay A front object's color overlays colors in the background, while preserving highlights and shadows. White and black in the background are not affected.

Soft Light Underlying colors are lightened or darkened depending on the brightness of the front color. Colors in front that are lighter than 50% gray lighten the underlying object. Colors in front that are darker than 50% gray darken the underlying object.

Hard Light Underlying colors are lightened or darkened depending on the brightness value of the front color. Hard Light mode is similar to Soft Light. However, black in the front object produces black; white in the front object produces white.

Darken The color values of the front color replace the underlying color values if the front color value is darker than the back color value. Black in the background appears unchanged; the front color appears in place of white in the background.

Lighten The color values of the front color replace the underlying color values if the front color value is lighter than the back color value. White in the background appears unchanged; the front color appears in place of black in the background.

Difference The color value of the front and back colors are compared and the darker value is subtracted from the lighter value. If the front and back colors are identical, the result is black. If the front or back color is black, the other color does not change. If the front or back color is white, the other color is inverted.

Dodge Dodge mode compares the lightness values in each channel of the front and back colors, and uses the lighter value from each channel for the result color. However, black is not replaced by a lighter color. White in the front replaces all colors except black.

Burn Burn mode compares the lightness values in each channel of the front and back colors, and uses the darker value from each channel for the result color. However, white is not replaced by a darker color. Black in front replaces all colors except white.

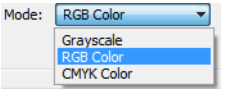
Color modes

Canvas calculates transfer mode effects by applying formulas to color values. Canvas performs these calculations using RGB color values or CMYK color values.

For example, the formula for Multiply mode is Color 1 multiplied by Color 2. Canvas applies the formula separately to each value that defines a color. In the case of RGB colors, Canvas applies the formula separately to the red, green, and blue values. For CMYK colors, Canvas calculates the effect on cyan, magenta, yellow, and black values.

The significance of the color space calculation is that the effect you see on screen could appear completely different if the effect is printed in a different color space.

In particular, you must display transfer mode effects in CMYK if the document will be separated for printing with process (CMYK) colors. Otherwise, the color separations could produce colors that are completely different from the colors you see on screen.



For an example of this effect, draw several overlapping objects with different colors. Set the transfer mode of the front object to Difference (see "Available transfer modes," page 34.18). Choose Layout > Display Options. In the Display Options manager, change the Mode from RGB to CMYK. Click OK to close the manager. To refresh the screen, press F5. You will probably see a significant change in colors when you switch from RGB to CMYK mode.

✓ Tip
Select Grayscale from the menu to lessen the required memory if working on complex graphics or editing images. In Grayscale mode, your screen redraws faster than in CMYK or RGB.

To set the color mode for screen compositing

1 Choose Layout > Display Options.

2 Select Grayscale, RGB, or CMYK in the Mode menu in the Display Options manager. Choose RGB for effects that will displayed in RGB colors. Choose CMYK if you are using CMYK colors in a document that will be printed with process colors.

Transparency and printing

You can use transparency effects to create stunning images and complex illustrations. As with any graphic effects, however, images that appear perfect on screen can cause problems or produce unexpected results when you print a document. This section discusses some issues you should keep in mind to help ensure that your documents print successfully.

Canvas uses special techniques to print some transparency effects. Canvas can send an instruction to print an opaque rectangle, for example, to most printers; however, to print a transparent rectangle, Canvas usually converts the object to an image. This process is called rasterizing or rendering. Canvas then sends the image data to the printer.

In the Print dialog box, you can select options for printing objects and colors. The options can affect the time required to print a document, and how well colors match among objects (see "Transparency Rendering," page 8.15).

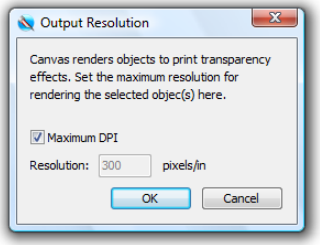
Output resolution of transparency effects

You can specify an output resolution for a transparent object. If you don't specify the resolution, Canvas selects the resolution based on the following guidelines:

- If a transparent paint object overlaps other paint objects, Canvas rasterizes all the objects at the same resolution as the paint object that has the highest resolution.
- If a vector object is transparent or is behind a transparent object, Canvas rasterizes the vector object at the resolution specified for printing. You can set the resolution for printing in the Output Settings manager in the Configuration Center (see "Printing settings," page 12.16).

To set the output resolution of an object

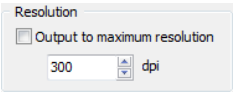
1 Select the object whose resolution you want to specify.



2 Choose Object > SpriteLayers > Output Resolution to open the Output Resolution dialog box.

3 Do one of the following and then click OK:

- Select the Maximum Resolution checkbox to specify that the object should be rendered at the maximum resolution of the output device.
- Deselect the Maximum Resolution checkbox and enter the resolution you want Canvas to use. You can set the resolution from 1 to 2,540 dpi.



To set the maximum output resolution

You can specify a maximum resolution for Canvas output. The resolution you specify in the Output Settings manager affects output of all objects and rasterizing of transparency effects. This setting overrides settings you apply to objects with the Output Resolution command (see "Output to maximum resolution," page 12.17).

VI

MULTIMEDIA

CHAPTER 35

DESIGNING FOR THE WEB

Canvas is an ideal tool for creating graphics and layouts for the World Wide Web. This chapter explores how to prepare graphics and documents for publishing on the Web or an Intranet. It includes information on hyperlinks, slices, animations, Web buttons, and exporting to PDF and Flash.

About hyperlinks and hypertext

Tip
An Internet address is referred to as a URL, an abbreviation of *Uniform Resource Locator.*

After you create illustrations and text for a Web page in Canvas, use the Link Manager palette to link items to other Web pages and resources on the Internet.

Graphics, such as buttons or images, that lead to other Web pages are called *hyperlinks.* Text that contains a hyperlink is called *hypertext.* Click a hyperlink on a Web page to jump to another page or a different site altogether. The Web browser searches the Internet for the address associated with the hyperlink.

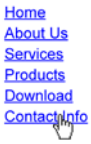
Examples of hyperlinks



Hyperlinked object



Hyperlinked image



Hypertext

Tip
To create invisible "hotspots," you can assign URLs to objects that don't have visible strokes or fill inks. This lets you designate any area of a Web page as a hyperlink.

You can make hyperlinks by assigning URLs to any page element, including the following:

- vector objects, such as small illustrations
- image objects, including photos and painted images
- text selections and entire text objects
- buttons and animations

Note: To prevent unintended changes, you can't assign URLs to objects on locked layers, pages, or slides. You must unlock prior to making changes.

Using the Link Manager palette

With the Link Manager palette, you can assign hyperlinks to page elements so they jump to files or Web pages on the Internet, a local hard drive, or an Intranet. In addition, create e-mail links by using the **mailto:** command or define anchors with the Anchor function.

Link Manager palette

A Link. Enter a URL and then click the Link button. To link to another file, open the menu and select Browse. Select the file and then click the Link button.

B Title. Enter a descriptive title for the link. Once published online, when a visitor places the mouse over the link, the Title appears like a tooltip.

C Target menu. Decide how the link will appear in the browser window (see "Targets" on page 35.3). The Width and Height options become available for the popup option.

D Style. Define the text properties for the hypertext.

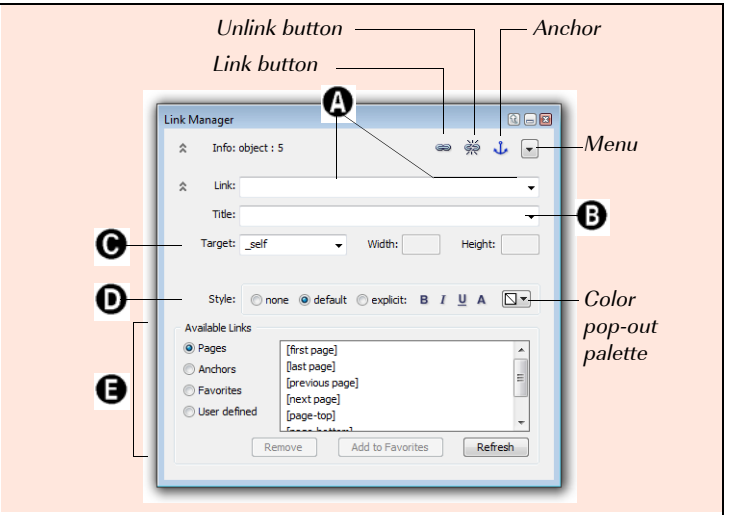
- None assigns no style.
- Default uses the browser settings.
- Explicit. Use the text format options and color pop-out palette to define the link. Your settings will override the browser settings.

E Available Links. Click on the radio buttons to see the links within the various categories (see "Available Links" on page 35.2).

Link button: Click to assign the URL in the Link field to a selected object.

Unlink button: Click to remove the link from the selected object.

Anchor button. Click to define the selected page element as an anchor (see "To define an anchor" on page 35.4).



Link Manager menu: Open this menu to select a URL format, such as http://, ftp://, mailto:, etc.

Available Links

Pages. Select the radio button to view the various page links and navigation controls (see "To insert page and site navigation controls" on page 35.6).

Anchors. Select the radio button to view the defined anchors within the present document (see "To define an anchor" on page 35.4).

Favorites. Select the radio button to view your list of Favorite links (see "Favorite links" on page 35.8).

User defined. Select the radio button to view the links that have been used in this document (see "User defined links" on page 35.7).

Remove. Select a link in the Favorites list and click this button to delete it from the list.

Add to Favorites. Define a link and click the Link button. Then select the User defined radio button. Select a link in the list and click Add to Favorites.

Refresh. Click this button to refresh the User defined list after removing links.

Creating hyperlinks and anchors

Before assigning links to elements, you should understand the various hyperlink commands and their respective uses. Also, when linking to Web pages or files, you need to consider how the linked item

will be displayed; i.e., in a new browser window, within the current window, etc. (see "Targets" on page 35.3).

Protocols and commands



Link Manager menu

All links start with a protocol or command that identifies the type of resource or action. Open the Link Manager menu to select a hyperlink protocol or command instead of typing it in the field.

http:// *Hypertext Transfer Protocol.* A Web address starts with **http**, followed by the Internet address, path, and name of a Web page; e.g., **http://www.acdsystems.com/English/index.htm**

ftp:// *File Transfer Protocol.* A file's URL can start with **ftp** followed by the Internet address, path, and name of a file; e.g., **ftp://ftp.acdamerica.com/public/Guide.pdf**

mailto: An e-mail link starts with **mailto** followed by a username, @ symbol, and domain name; e.g., **mailto:support@acdsystems.com**

Targets

The target is the frame in which the linked content will open. The following options are available:

_top The linked document loads in the full browser window. All frames are removed.

_parent The linked document loads in the parent frame or parent window of the frame containing the link. If that frame is not nested, the linked document loads in the full browser window.

_self This is the default target. The linked document loads in the same frame or window as the link.

_blank The linked document opens in a new browser window. The current browser window is kept available.

_popup The linked document loads in a popup window. The Width and Height fields are available with this selection.

Relative paths Create hyperlinks to Web pages by typing relative paths, rather than complete URLs, in the Link Manager palette. Canvas specifies links this way when you select local files by using the Browse function in the Link Manager palette (see "To use Browse to link to a local Web page" on page 35.7).

To assign a URL to an element

Use these steps to create hyperlinks with the Link Manager palette.

✓ Tip
You can't assign a URL or action to objects on layers, pages, or slides that are locked.

1 Select the element that will contain the hyperlink. Elements include text as well as vector and image objects.

2 Enter the hyperlink in the Link field. You can also use the browse command in the menu to search for a file.

3 Add some descriptive information in the Title field.

4 Select the appropriate target frame (see "Targets" on page 35.3).

5 Make any style changes, if needed, for a hypertext link.

6 Click the Link button to assign the link.

Note: When creating hyperlinks, ensure to respect the case of the domain name or file name due to case-sensitivity; i.e., if a document uses uppercase in its name, use uppercase and vice-versa.

To remove an assigned hyperlink

1 Select the element that has an assigned hyperlink that you want to remove. The hyperlink appears in the Link field.

2 Click the Unlink button.

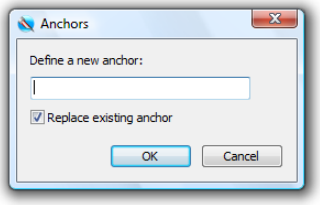
Absolute paths & relative paths

An absolute path provides the complete URL of the linked document, including the protocol; i.e., http://. An example of an absolute path is http://www.acdamerica.com/community/howto/default.html. You must use an absolute path to link to a document on another server.

Relative paths are the recommended paths for local links. The basic concept behind relative paths is to omit the part of the absolute path that is common to both the current document and the linked document, providing only the portion of the path that differs. The protocol is excluded from relative paths. Canvas specifies links this way when you select local files by using the Browse command in the Link Manager menu.

To define an anchor

You can define anchors with various page elements, including text as well as vector and image objects. Use these steps to define anchors with the Link Manager palette.



1 Select the object to which you want to assign the anchor.

2 Click the Anchor button. The Anchors dialog box opens.

3 Enter a name for the anchor in the Define a new Anchor field.

4 Click OK to close the dialog box. The defined anchor should now appear in the Available Links section of the Link Manager palette when the Anchors radio button is selected.

Note: If you redefine an anchor, make sure you select the Replace existing anchor checkbox. If it is deselected and you use the name of an existing anchor, a warning dialog box will appear.

To create links to anchors

You can assign anchor links to various page elements, including text as well as vector and image objects. Use these steps to link to an anchor with the Link Manager palette.

1 Select the element.

2 Click the Anchors radio button. The defined anchors appear in the list.

3 Select the anchor. You can enter a descriptive title as well as use the Target and Styles controls as you would with a hyperlink.

4 Click the Link button.

- **To remove an anchor link:** Select the element that contains the link to the anchor and click the Unlink button.

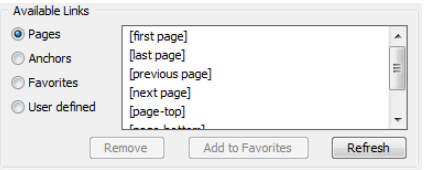
To create links between pages

After you link pages, you will want to export each page as a separate Web page (see "HTML options" on page 35.24). Using this technique, you can easily convert a single Canvas document into a hyperlinked Web site.

Tip
Use the Document Layout palette to assign meaningful names to pages before you create links to them using the Link Manager palette.

1 Select the element that will contain the link.

2 Click the Pages radio button. The various page links appear in the list.



3 Select the page to which you want to link. You can enter a descriptive title as well as use the Target and Styles controls as you would with a hyperlink.

Note: With page links, you would generally select **_self** for the Target since internal links should open in the current window.

4 Click the Link button and click OK.

- **To remove a page link:** Select the element that contains the link and click the Unlink button.

Format of hyperlinks

Canvas creates links among pages using only file names, not complete URLs. Therefore, when you create a series of linked Web pages from a Canvas document, be sure to keep the resulting files together in the same folder or directory on the Web server so the links among the pages function correctly.

To insert page and site navigation controls

Similar to the page links described previously, these controls are used to easily move around a Web page and jump between pages of a Web site.

This navigation control	does this
[page-top]	Jumps to the top of the current page
[page-bottom]	Jumps to the bottom of the current page
[first page]	Jumps to the first page
[previous page]	Jumps to the page before the current page
[next page]	Jumps to the following page
[last page]	Jumps to the last page
{Sheet #1}	Jumps to the specified page, sheet, frame, or slide.

✓ **Tip**
An example of page navigation can be seen on any Canvas How-to tutorial (www.acdamerica.com/community/howto/default.html).

1 Select the page element to contain the link.

2 Choose from [page-top], [page-bottom], [first page], [previous page], [next page], [last page], or {Sheet #1}. You can enter a descriptive title as well as use the Target and Styles controls as you would with a hyperlink.

Note: With page and navigation controls, you would generally select **_self** for the Target since internal links should open in the current window.

3 Click the Link button and then click OK.

- **To remove a navigation control:** Select the element that contains the link and click the Unlink button.

Invalid characters in page names

Since some special characters are invalid in URLs, Canvas converts these characters if they are in a page or slide name that you select in the Link Manager palette.

If invalid characters appear in a page name, Canvas replaces the characters with underscores when Canvas assigns a URL. Invalid characters include a blank space and the following characters:

Invalid characters in assigned URLs

!	**&**	**[**	
@	*****	**]**	**`** *(grave accent)*
#	**(**	**{**	**~**
$	**)**	**}**	**<**
%	**+**	**|**	**>**
^	**=**	**tab**	**?**

To use Browse to link to a local Web page

Use the Browse function in the Link Manager palette to create links to existing Web pages. Creating links to Web pages depends on their location in a directory structure.

1 Open the palette menu and select Browse. A dialog box opens.

2 Navigate to the file to which you want to link.

Note: By default, files that do not have an **htm** extension do not appear in the file list. To link to Web pages, be sure to select files that have the **htm** extension.

3 Click the Link button. Canvas makes the link based on the file's location in the directory structure.

User defined links

In the Available Links section of the Link Manager palette, there is a radio button labeled User defined, which refer to any defined link that is outside of the local document; i.e., the link is not a page link or anchor. User defined links are document specific; i.e., when you close a document, the User defined links are not available in the new document.

- **To view the User defined links:** Select the User defined radio button and the list appears.

- **To create a link using the User defined list:** Select the element that will contain the link. Click on the User defined radio button and the list will appear. Select a link and click the Link button.

Favorite links

✓ **Tip**
The Favorites list is not document specific so you can access your list when you open a new document.

The Link Manager has a button that will definitely save you time if you use a specific link often: Add to Favorites. Rather than re-entering the link information over and over, you would simply select the link from your Favorites list and click the Link button.

- **To add a link to the Favorites list:** Select a link from the User defined list and click the Add to Favorites button.
- **To create a link using the Favorites list:** Select the element that will contain the link. Click on the Favorites radio button and the list will appear. Select a link and click the Link button.
- **To remove a link from the Favorites list:** Open the Favorites list and select the link. Click the Remove button.

Testing hyperlinks or commands



If you have attached hyperlinks or mailto commands to objects in your Canvas document, you can now test or follow these links with the Hyperlink pointer.

Select the Hyperlink pointer from the Toolbox. Move the cursor over an object that contains a hyperlink. The cursor changes to a hand. Click the hand on the object and the associated program launches; e.g., Web browser, e-mail program.

Attaching hyperlinks to text

Select any amount of text — from one character to whole paragraphs or entire text objects — and use the Link Manager palette to make the text selection a hypertext link to a Web page, ftp address, or e-mail address.



Hypertext styles Many Web browsers indicate hypertext by underlining or coloring the text. Use the Link Manager palette to apply styles and colors when you create hypertext.

Text in images Making hypertext links in Canvas lets you design the equivalent of *image maps* that can be easily edited. To do this, place text on images (or vector objects), and then assign the appropriate hyperlink to the text. Later, if you want to change the illustration, you can edit the text, images, and objects separately in the original Canvas document.

To create a hypertext link

1 Open the Link Manager palette.

2 Select text in the Canvas document.

3 Enter the hyperlink in the Link field. You can also use the browse function to search for a file (see "Creating hyperlinks and anchors," page 35.2).

4 Add some descriptive information in the Title field and select the appropriate target frame (see "Targets" on page 35.3).

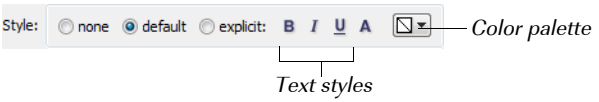
5 Use the formats in the Style section to define the text properties for the hypertext.

6 Click the Link button to assign the link.

None assigns no style.

Default uses the browser settings.

Explicit. Use the text format options and color pop-out palette to define the link. Your settings will override the browser settings.



Click style buttons to apply text styles.
Select a solid color ink from the color palette.

About file locations and URLs

In most cases, Web files are created on one computer and transferred to a Web server that is connected to the Internet. You might create Web pages on your home or office computer, then transfer the files over a network or the Internet to a Web server.

Web pages often contain links to other Web pages on the same Web server. Because these links are based on the names and locations of the files on the Web server, changing file names or locations can break the links among the pages.

To successfully create hyperlinks among Web pages on your site, you should understand how to use relative directory paths, absolute directory paths, and Internet URL addresses.

Absolute paths An absolute path specifies a file's location starting at the top, or root, of the directory structure in which the file is stored; e.g., if a file named "Calendar.html" is stored in a folder named Events, inside a folder named Public, which is inside a folder named Home at the root of the hard drive, the path to the file is: **/Home/Public/Events/Calendar.html**

Relative paths A relative path specifies the location of a file relative to the location of another file in the same directory structure. Rather than starting at the root of the directory structure, a relative path starts at the location of one file or folder and lists the relative steps needed to get to the specified file. In a relative path, the symbol ../ (two periods and a slash) signifies a move up one step toward the root level in the directory structure.

Directory paths

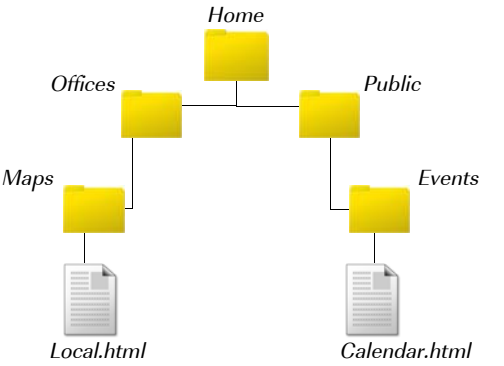
In the directory diagram shown here, the relative path from the file "Local.html" in the Maps folder to the file "Calendar.html" in the Events folder is:

../../Public/Events/Calendar.html

In this case, the relative path starts on one branch of the directory tree, moves to the root, and then back down another branch.

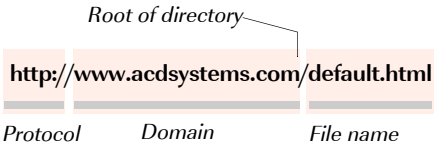
If two files are on the same branch of a directory, the relative path can be much shorter than the absolute path. For example, the relative path between the file "Calendar.html" in the Events folder and a file named "Schedules" in the Public folder (one level above Events) is: ../Schedules.html

The absolute path to the same file is: /Home/Public/Schedules.html



Complete URLs Like an absolute path, a complete URL lists the directory path starting at the root to the location of a Web page on a server. In addition to the path and file name, a complete URL includes a protocol (http or ftp) and a domain name (see "Protocols and commands" on page 35.3.

A complete URL for a Web page



In the "Directory paths" diagram on page 35.10, if the folder named Home is the root folder of a Web site, the URL for the "Calendar.html" page is:

http://www.domain.com/Home/Public/Events/Calendar.html

Entering file names and URLs When you create hyperlinks, you can specify the target as a relative path or a complete URL.

- If the two pages are in the same folder or directory, the relative path is simply the name of the target file.
- A complete URL specifies the actual location of the file on a Web server on the Internet.

You can enter a relative path or a complete URL in the Link field.

When you use the Browse button in the Link Manager palette, Canvas can enter a relative path or a complete URL.

Pixel Mode

The Pixel Mode setting allows users to view graphics at 72 ppi before they are rendered. At the same time, all of your graphics will remain fully editable. Pixel Mode also prevents pixel shifting, which sometimes occurs when objects are exported to the Web.

- **To turn on pixel mode:** See "Alert and preview options," page 12.4.

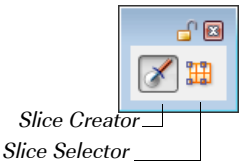
Creating Slices

Professional Web designers will confirm that a fast download time versus a slow one can spell the difference between commercial success and failure. A visitor may quickly loose patience and hit the dreaded Back button if forced to wait too long for a Web page to load. Slicing large images into small, faster-loading pieces is one of the Web design tricks most often used.

✓ Tip
You can import the table into an HTML editor for further editing.

A slice is a rectangular area of an image that becomes a cell in an HTML table. The HTML table is then exported to be placed onto a Web page.

We suggest that you preview your work in a browser to ensure that your document will appear correctly. Also, remember that an image may appear differently when it is viewed on other platforms.



The tools that you need to use are the Slice Creator and the Slice Selector. The creation and manipulation of slices can only be accomplished when either of these two tools are activated.

The slicing tools lets you optimize and export any Canvas object for use on the Web. In addition, you can assign a URL to a specific slice (see "About hyperlinks and hypertext" on page 35.1).

If you are new to slicing, then you need to know that Canvas contains default settings that allow you to quickly perform the slicing function. In other words, you may immediately begin slicing an image and Canvas will assign default settings; however, so that you can achieve the optimal results, we suggest that you review Slicer Preferences (see "Slicer Preferences" on page 35.13).

By using the Slicer Preferences prior to exporting an HTML table, you can efficiently manage your slices and significantly reduce the likelihood of potential problems. The procedure for properly setting up the export of your slices into an HTML table is detailed later in this section.

Slicer Preferences

Double-click the Slice Creator icon or Slice Selector icon to open the Slicer Preferences in the Configuration Center.

A General options

- Name template - Assign a name to the slice template. This default name is shared by all of the slices. The name specified here must always use one of the formatting marks (either "# " for numbers or "&" for a letter). If these marks aren't used, then the application automatically adds a (#) to the end of the name. Other formatting keywords, such as [document] and [page] or a combination of these keywords, could be used together with the formatting marks. Additional naming information will be provided later in this section. A default name is automatically applied to a template if you don't enter one; however, if a Web page is going to have more than one HTML table (which will contain a sliced image), then it's a good idea to assign a unique template name before exporting the slices.
- Split preference - Choose a way of splitting overlapped slices. By default, slices are split without any preference. In that case, Canvas automatically designates where or how to split an overlapping slice.

You may edit the default by selecting either vertical or horizontal as your choice. The Splitting preference remains in effect for all overlapping slices.

Note: Changing this preference affects all existing (overlapping) slices, but not those that are hard-split using the Split command.

B Default image options

Image format

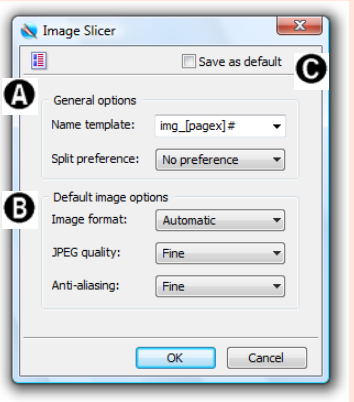
- Automatic — Canvas chooses the file format for images (see "How images are handled" on page 35.25).
- JPEG or GIF — Select either option to save all images in one format or the other.

JPEG Quality - Four JPEG quality levels are available:

- Best - least compression (100% quality).
- Fine - 90% quality.
- Good - 75% quality.
- Draft - most compression (50% quality).

Anti-aliasing - Smoothes the edges of rendered vector objects and text objects.

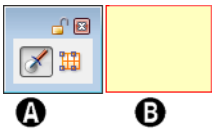
- Finest uses up to 256 shades between each pair of colors. Images with more than 256 colors should be saved in JPEG format to preserve the full range of shades. If necessary, Canvas uses JPEG format if you select the Automatic Image Format option.
- Fine uses 64 shades per pair of colors. Medium uses 16 shades per color pair. Coarse uses four shades per color pair.
- None - no anti-aliasing.



C Select Save these settings as the default to make these settings your default slicer preferences.

Click OK to save your Slicer preferences.

Using the Slice Creator



A Select the Slice Creator icon. Slice Creator cursor appears as a (+) plus sign. At this point, manually slice each desired area by clicking and dragging your mouse over the image.

B The Slice box contains a yellow transparent fill and has a red outline.

The Slice Creator tool gives you the ability to actually create a rectangular (horizontal or vertical) Slice box; i.e., you can define the area of the object that is to be sliced.

All slices are automatically created inside a Slice layer. Specifically, this means that no matter which layer you were originally working in, the Slice operation will take place inside its own layer.

We suggest that you refer to the Document Layout palette during the first few times that you create slice (see "Using the Document Layout palette," page 11.2). Doing so will better illustrate how your slices are handled by Canvas.

When creating a new slice, the cursor will automatically snap to an existing slice or a grid (in that order) (see "Drawing grids" on page 17.13 to learn how to create a Grid).

Another way to ensure precision is to create and place alignment guides around and over the object. If you are unfamiliar with this process, then we suggest that you read "Using alignment guides" on page 10.14.

Snapping to an existing slice is absolute. The cursor automatically snaps to a grid within a 3-pixel range of an existing slice.

Note: Other Canvas operations are not allowed during the Slice Creator mode. You can only create slices.

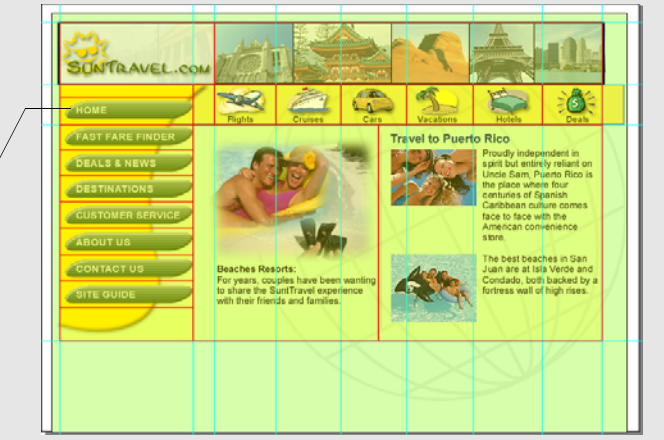
To slice an image

1 Click on the Slice Creator icon.

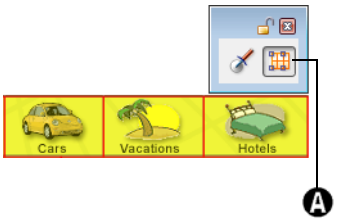
Note: The cursor turns into a (+) sign when the Slice Creator function is active.

2 Then, click-and-drag over the section of the image to be sliced.

Each yellow-shaded box represents a sliced area.



Using the Slice Selector



Once you have sliced the image, you may need to edit and move it. To do this, select the Slice Selector tool (A).

The Slice Selector tool allows you to select, move, resize, copy, or delete the slice. You also have the option to both Undo and Redo any of the previously mentioned procedures.

Note: Slices can't be rotated or skewed. Additional slice-related commands are available through a context menu (see "Slice operations context menu" on page 35.16).

To view slice properties

1 Select the slice with the Slice Selector tool.

2 Right-click to open the context menu.

3 Select Properties to open the dialog box.

Note: Certain slice properties are available in the Properties bar when a slice is selected.

Slice Properties

A Change slice's index to - change the index of any selected slice. This function could be necessary if the index is part of the slice's name when using either the '#' or '&' formatting symbol. It is available only if one slice has been selected.

First select the Change slices index to box. Enter either a number or choose one of the existing indices available in the menu.

B Naming

Slice name - Enter the name of the slice or choose one of the values from the menu. *[current]* indicates that the name won't be changed. *[default]* means the default name is used. *[document]* is the current document's name. This keyword can be combined with the *[page]* keyword and with (&) or (#) formatting marks or with other text. Names like *[document]_[page]_slice_##* are legal and may be used. [page] represents the current page name. This keyword can be combined with the *[document]* keyword and with (&) or (#) formatting marks.

# denotes the index of the slice. By using this setting, the index will be formatted as a number. More than one of these marks may be used; e.g., if you type "*Image_###*" and the index of the image is 7, then the name of the image would be "*Image_007*." Otherwise, if only one mark is used, then the name would be "*Image_7*." This mark (or a set of them) can be used only once in the name and it is mutually exclusive when using the (&) as a formatting mark.

& represents the index of the slice, but it is formatted as a letter. More than one of these marks may be used to format a text designation that contains more than one letter; e.g., if you type "*Image_&&&*" and the index of the image is 7, then the name of the image is "*Image_aag*." Otherwise, if only one mark is used, then the name would be "*Image_g*." This mark (or a set of them) can be used only once in the name and it is mutually exclusive when using the (#) as a formatting mark.

Note: If more than one slice is selected, then a name with either (#) or (&) formatting mark is required since each slice must have a unique name.

Use ASCII characters only and ensure that the name doesn't contain a space between the characters.

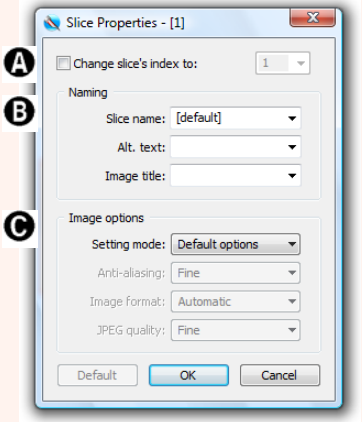
Alt text - assigned alternative text won't take effect until it is exported to HTML. Some browsers display alternative text by default while the image is being downloaded. Alt text may have up to 64 characters and does not have to be in ASCII format.

Image title - A title will take effect only if it is exported to HTML. By default, a browser will display the title as either a tool tip or on the status bar when you move the cursor above the image. The image title message may contain up to 64 characters. These characters do not necessarily need to be in ASCII format.

C Image Options

Setting mode

Default options - The slice(s) will share the Slicer's default setting.



Optimized - When checked, the standard dialog for image optimization will show up. You can set any combination of image parameters. After you close the dialog, a summary of the settings will be displayed along with a small button. Clicking the button will reopen the optimizing dialog. For more information on how to optimize an image's parameters, see "Saving Web graphics (GIF/JPEG)" on page 13.17.

Note: Although it is possible to select a transparent color (or colors) when optimizing GIFs, such settings will be lost after returning to the Slice Preferences dialog.

Simple setting - Using this mode, you can choose the desired options for anti-aliasing, image format, and JPEG output quality.

Anti-aliasing, Image format and JPEG quality image options are the same as the ones that appear in "HTML options" on page 35.24.

Slice operations context menu

The context menu can only be accessed if the Slice Selector tool is selected. Some of the commands are available only if they are relevant to the context of the current situation.



- **To open the slice operations context menu:** Right-click the Slice Selector tool on a slice.

Select this slice selects the slice at the cursor's current position.

Deselect this slice Deselects a slice if it is the only one selected.

Remove from selection Removes the slice at the cursor position from the selection set.

Select/Deselect all slices Selects or deselects all slice objects.

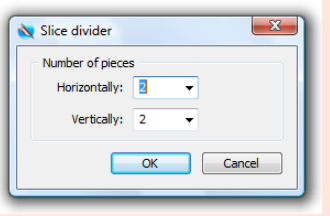
Delete slice(s) Deletes all currently selected slices.

Divide slice Allows you to divide a slice horizontally and/or vertically into smaller slices. When choosing this command, the Slice divider dialog box appears with two options:

Slice divider dialog box

- Horizontally - specifies how many horizontal portions in which the slice will be divided. To prevent horizontal division of the slice, a value of 1 can be specified.
- Vertically - specifies how many vertical portions in which the slice will be divided. To prevent vertical division of the slice, a value of 1 can be specified.

Note: Using this method, a slice that overlaps another slice cannot be divided.



Split slice Splits all selected slices that are overlapped by other slices. Slices are sliced along the soft slice-lines. This operation separates the image into individual slices. These slices will have the parent slice's parameters by default, but the parameters can be modified.

Export slice Exports slices as images. It can also create an HTML file with a table that will contain all of your image slices (see "Exporting Slices" on page 35.17).

Arrangement commands Will arrange selected slices in a certain order: Shuffle Up, Shuffle Down, Bring to Front, Bring to Back (see "Arranging objects in the stacking order" on page 16.22).

Exporting Slices

Once you have finished slicing your work, you can export the images (GIFs or JPEGs). You can also create an HTML file with a table that contains all of the images. The options to perform these functions are available in the Slicer Export Options dialog box.

Slicer Export Options

To open this dialog box, select Export Slices from the Slice Operations menu.

A Replace existing images - Selecting this item automatically replaces existing images that have the same file name and location. If deselected, a dialog box will warn you when a slice is about to be replaced.

B HTML Export options creates an HTML file that will contain the images to be exported. The file will contain one table that will link with all of the images. These settings can affect how the HTML table will be designed.

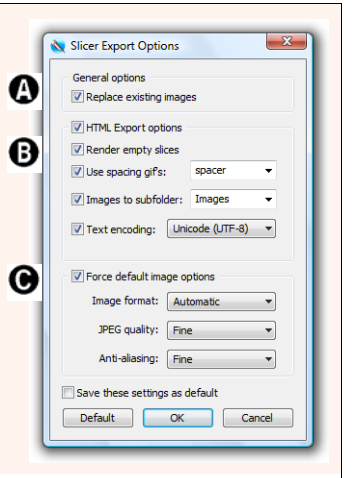
Render empty slices If checked, all empty spaces (within the rectangle that determines the boundary of all of the selected slices) will be rendered. If not checked, the cell in the table will appear to be empty. For rendering the empty slices, default image options will be used.

Use spacing GIFs - When working with complex tables, it may be necessary to use a one-pixel wide transparent GIF image as a spacer. These spacers force a Web browser to accurately display a complex HTML table. Choose a predefined name or enter your own spacer name with only HTML-safe characters.

Images to subfolder allows you to name a subfolder to which all images will be exported. If not checked, then images will be created in the same folder where the HTML file is being exported. The name of the subfolder should contain HTML-safe characters only.

Text encoding - If activated, all text (i.e., alternative texts and image titles) will be encoded using the specified encoding. Also, the information about which encoding is used will be declared in the HTML file's header. Western (ISO) is best used for the western Latin alphabet. Unicode (UTF-8) is best used for other alphabets (central European, Cyrillic, Asian) or mixed alphabets.

If no encoding is required, then all of the text is exported as is. Only invalid characters are encoded so that the HTML output will always be valid.



C Force default image options - If this option is turned on, then the individual image parameters will be overwritten by the Slicer's default options. This image setting is temporary and will not affect parameters of individual slices.

See "HTML options" on page 35.24 for the image options, which are Image format, JPEG quality, and Anti-aliasing.

Assigning URLs to slices

Selected individual slices or groups of slices can be assigned a URL by using the Link Manager palette. Choose Object > Options > Link Manager to open the palette. The process is the same as assigning a URL to an ordinary object; however, the slice or slices must be selected with the Slice Selector (see "Using the Link Manager palette" on page 35.2).

Using Web buttons

If you plan to export your Canvas document to the Web, you may want to add some interactive elements such as Dynamic Web buttons. Web buttons can lead visitors to another page within a site or link to a different URL altogether.



The Web Button tool opens the Web Buttons palette and places buttons in documents.

Understanding the button states

These buttons are called *dynamic* because they change their behavior, or state, according to the user's actions. Dynamic Web buttons have a total of 3 states:

State	Explanation	Example
Up	This is the default, or normal, state of the button. The mouse is not over the button area.	
Over	This is the state when the mouse is moved over the button area.	
Down	This is the state when the mouse clicks the button area.	

✓ **Tip**
Dynamic Web buttons may also be referred to as rollovers.

When you create a button, you can use a separate object or image for each of the button's states.

Note: All vector or text objects to be used as Web buttons must have a pen ink and fill ink. Objects that have the pen and fill inks set to "none" can't be dragged into the Web Buttons palette.

Web Buttons palette

Double-click the Web Button tool to open the Web Buttons palette.

A Button state boxes - Drag the images, text objects, or vector objects into each state's respective box.

Remember that the Up state is the default state.

B Preview box - If you've defined all 3 states, you'll see the Over state when the mouse passes over the box. Click the mouse on the box to see the Down state.

C Storage box - Drag the defined button from the Preview box to this box (see "To store a Web button" on page 35.19).

D Web Buttons palette menu - Open this menu to load, append, save, or clear buttons (see "Saving and clearing Web buttons" on page 35.20 and "Loading and appending Web buttons" on page 35.20).

To create a Web button

Note: You can drag objects into the boxes in any order.

1 Drag the object for the Up state into the Up box.

2 Drag the object for the Over state into the Over box.

3 Drag the object for the Down state into the Down box.

To store a Web button

Drag the completed button from the Preview box to the Storage box.

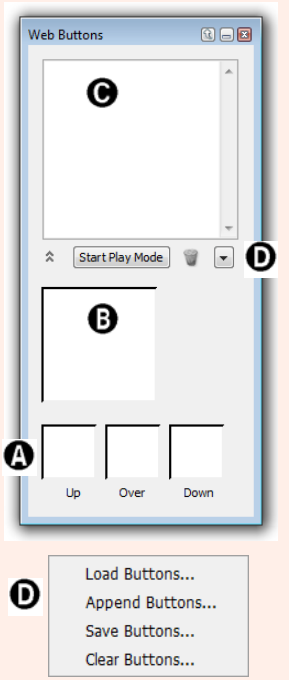
To delete a Web button

Drag the button you want to delete to the trash can icon in the palette.

To modify a Web button's state(s)

Note: You can't edit a button's attributes, such as pen ink, fill ink, and stroke.

Drag the object from the Up, Over, or Down box into the document. Modify the object and drag it back into its respective box. Store the updated button and place a copy in your document.



To test Web buttons

Before storing a new button, test it in the Web Buttons palette (see "Web Buttons palette" on page 35.19). As indicated previously, the Up state is the default state (see "Understanding the button states" on page 35.18). Move the cursor over the Preview box to see the Over state and then click to see the Down state.

If you've already placed the Web button but want to see their appearance before exporting to HTML, use the *Play* feature on the Web Buttons palette.

Click the Start Play Mode button and the placed Web buttons go into *play* mode. Move the cursor over the buttons and click them to see the 3 states. When you finish, click End Play Mode.

✓ Tip
Don't work in Canvas while *play* mode is active. Click End Play Mode before starting other work.

To place Web buttons in a document

Use this procedure to place Web buttons in a Canvas document.

1 In the Storage box, select the button that you want to place. The selected button appears in the Preview box.

2 Move the cursor into the document area. The cursor changes to a placement icon.

3 Do one of the following to place the button:

- Click to place the button.
- To scale the button, drag to create a bounding rectangle.

Note: When the Web Buttons palette is closed, you can use the Web Button tool to place the last selected button.

To place additional Web buttons To place copies of the same button, use the Web button tool again or select the first button and choose Edit > Duplicate to create duplicates.

To resize Web buttons Select the placed Web button and drag a handle to resize its bounding rectangle.

To attach a URL to a Web button Use the Link Manager palette to link buttons to other HTML files or URLs (see "Using the Link Manager palette" on page 35.2).

✓ Tip
If you want to place multiple copies of the same button, use this procedure once, and then see "To place additional Web buttons" on page 35.20.

Saving and clearing Web buttons

When you save a Web button in the palette, it's available in all Canvas documents.

To save buttons

In the palette's menu, choose Save Buttons. Select a directory in which to save the file. Enter a name for the file and click Save.

- **To remove all buttons from the Web Buttons palette:** Choose Clear Buttons from the palette's pop-up menu.

✓ Tip
Save the Web buttons on the network so your co-workers can use them as well.

Loading and appending Web buttons

When you load a Web button file, the buttons currently in the palette are replaced by the button file. If you don't want to lose the current buttons, you should save the current buttons in a button file (see "To save buttons" on page 35.20).

When you append a button file, the current buttons are not replaced. Instead, the buttons in the file are added to the end of the palette.

- **To replace all buttons in the palette with those in a button file:**

Choose Load Buttons in the menu. Select a button file and click Open.

- **To add buttons to the palette:** Choose Append Buttons from the menu. Select a button file and click Open.

Working with animated GIFs

Animations are an attractive visual element that can be added to a Web site. Canvas' flexibility allows you to create animated GIFs.

Creating animations

Create animated GIFs in Canvas by assembling images within an Animation document and then saving the file as an animated GIF. This animation format is extremely popular among Web designers since it is supported by nearly all Web browsers.

✓ Tip
The more frames per second (fps), the smoother the motion appears.

Animation documents consist of a series of frames, with each frame being a still image. Displaying frames in quick succession creates the illusion of motion.

Use the Document Layout palette to arrange the frame sequence and set their individual duration (see "Using the Document Layout palette," page 11.2).

All about onion skinning

In Animation documents, you can display more than one frame at a time. *Onion skinning* is the term for displaying multiple frames as if they are on tracing paper. Onion-skinning is useful for positioning objects across frames of an animation.

The onion-skinning icon is located on the Document Layout palette (see "Using the Document Layout palette," page 11.2). Click this icon to open the menu.

No Onion Skinning - Choose this option to show just the current frame.

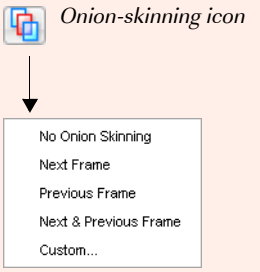
Next Frame displays the current frame and the frame after the current frame.

Previous Frame displays the current frame and the frame before the current frame.

Next & Previous displays the current frame and one frame before and after the current frame.

Custom - Choose this option to display any number of frames adjacent to the current frame. Enter the number of frames to display.

When onion-skinning is active, names of the displayed frames are tinted in the layout list.



Exporting an Animated GIF

Once you've created your animation, it is time to export it as an animated GIF.

✓ Tip
You should save your file first in Canvas format (.CVX).

To save as animated GIF

1 Choose File > Save As.

2 Select GIF Animated as the file type.

3 Enter a name for the file.

4 Click Save. The Animated GIF Options dialog box opens.

Animated GIF Options

When you choose animated GIF as the file format, this dialog box opens.

A Transparent Background — Makes the background transparent.

B Auto Crop — Optimizes the size of each frame and the document. The Auto Crop feature will create the minimum size needed to accommodate all of the objects in the document.

C Interlaced — The image will load into a browser a little bit at a time. Activating this feature creates the effect of improving an image over a slow connection.

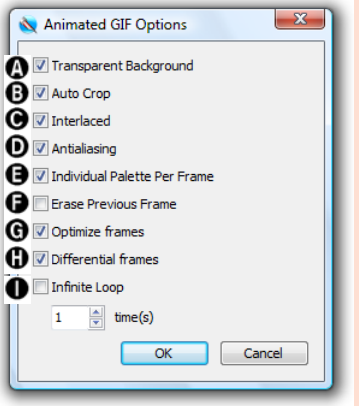
D Anti-aliasing — Objects from the Canvas document will be rendered with an overall softened effect.

E Individual Palette Per Frame — If selected, each GIF frame will contain its own palette. This will create a larger GIF image; however, this setting is suggested if you are creating complex and colorful animations. If this option is not checked, then all frames will have a common palette. The color palette maximum is 256 colors.

F Erase Previous Frame — Each frame will be erased and the area will be restored to the background before the next frame is displayed during playback.

G Optimize frames — This feature minimizes the size of a file that will be created. We recommend this setting if you are working with colorful GIFs or pictures. The Optimize frame setting has no effect on simple graphics, like rectangles, ovals etc.

H Differential frames — This option searches for the smallest frame possible in the set that contains all of the changes from a previous frame. After the search, it creates a new rectangle which becomes the new frame. *Note:* If the option "Erase Previous Frame" is checked, then this particular option will be unavailable. For more information on using animated GIF options, see "Working with animated GIFs" on page 35.21.



I Infinite Loop — Activating this option will cause your animation to run (loop) continuously.

Note: You may specify the number of times that your animation will run. To do this, simply enter the number of times to "loop" your animation in the Times box.

Creating Web pages from Canvas documents

Any document that you create in Canvas can be exported for the Web in a matter of seconds. To export a document as one or more Web pages, save the document in HTML format.

Canvas does not support opening and editing of HTML Web pages; therefore, always save your documents in Canvas format (.CVX) before you export Web pages. Saving in Canvas format means you can edit the original and export again in HTML.

To save a document in HTML format

1 Open the Canvas document that you want to save as one or more Web pages, and then choose File > Save As.

2 In the directory dialog box, select HTML file format.

3 Select a location to save the files, enter a file name, and click Save. The HTML Options dialog box opens.

4 Select options for saving the Web pages (see "HTML options" on page 35.24).

5 Click OK to save them.

HTML options

A General options

Create new folder - organizes files for a Web page by placing them in a new folder in the specified location. The name that you enter when you are saving a Web page is used for the folder's name.

Put images in subfolder - creates a subfolder for the image files .

Separate pages - available for multi-page Canvas documents; creates a Web page from each page. Page names will become the file names. If you do not select this option, then Canvas exports all pages as one HTML file.

Generate navigation file - if you select Separate pages, you may wish to activate this option; generates navigation aids placed on the top and left side of each Web page. These links are created from the index name of each Web page.

Use external style - Select this option to create an external style sheet for Web pages that you are saving. An external style sheet can make it easier to edit styles manually and can also reduce the size of individual HTML files because the complete style information is not included in each Web page file.

Note: Not available if Table Layout is active since Table Layout doesn't use global CSS definition.

B File format - Two types available: HTML 4 and XHTML, with only a few differences between them. XHTML documents differ in the document's header and have some additional tags in the data stream (such as end-tags for image objects).

C Layout mode - Three modes are available for both file formats.

- CSS2 (Cascading Style Sheet) - Graphics and text objects will be positioned using the "absolute position" property (defined by the CSS2 specification). In this mode, objects can overlap each other without the need for you to render them. Some browsers have problems dealing with CSS2 format. Only Internet Explorer 4.x + (as well as AOL 4+) and Netscape Navigator 6.x can support CSS2 layout without problems.
- Table Layout - Allows all Canvas objects to be organized into cells of an HTML table. All overlapping objects are rendered and exported as bitmaps. Although table mode may produce less efficient HTML output, it is accepted by all major browsers. *Note:* CSS properties are also used in the Table Layout but only for text formatting not for positioning.
- Table Layout Centered - HTML output is the same as the standard "Table Layout"; however, table is centered in a browser.

D Text options

Render Text - Rendering converts text objects to images to ensure that text appears the same on the Web. Rendered text can't be selected as text on a Web page.

- Automatically - Canvas decides when to render text.
- Always.
- Never- preserve all text as text objects.

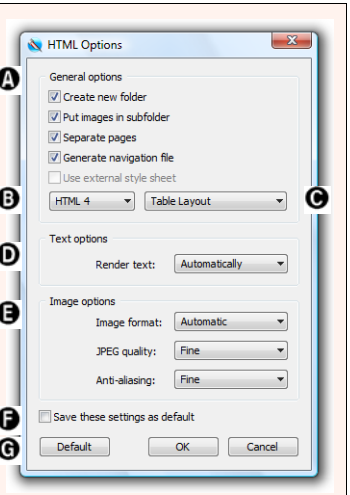
E Image Options

Image Format

- Automatic — Canvas chooses the file format for images (see "How images are handled" on page 35.25).
- JPEG or GIF — Select either option to save all images in one format or the other.

JPEG Quality - Four JPEG quality levels are available:

- Best - least compression (100% quality).



- Fine - 90% quality.
- Good - 75% quality.
- Draft - most compression (50% quality).

Anti-aliasing - Smoothes the edges of rendered vector objects and text objects.

- Finest uses up to 256 shades between each pair of colors. Images with more than 256 colors should be saved in JPEG format to preserve the full range of shades. If necessary, Canvas uses JPEG format if you select the Automatic Image Format option.
- Fine option uses 64 shades per pair of colors. Medium uses 16 shades per color pair. Coarse uses four shades per color pair.
- None - no anti-aliasing.

F Select Save this setting as default to save the current settings in the dialog box for all documents. Otherwise, Canvas saves the settings for the current document only.

G Default - If you have never selected the save settings option, clicking Default will switch the dialog box settings to the Canvas default.

Metatags

When Canvas creates an HTML file from a document, it uses metatags in the HTML file header to include data entered in the document Properties dialog box. This data includes information such as Title, Subject Keywords, Author, and Category from the fields on the Summary tab in the Document Properties dialog box.

- **To add metatags to a document:** Choose File > Properties and click the Summary tab. Enter any keywords in the fields.

How images are handled

Canvas uses compression and color reduction to optimize images for faster display on Web pages. All graphic objects are exported as RGB images in GIF or JPEG format. You can choose the image format or allow Canvas to decide this option for you (see "Image Options" on page 35.24).

When you select Automatic from the Image format menu, Canvas exports RGB Color and CMYK Color images as RGB (24-bit) images using JPEG compression. Indexed mode images, which use a maximum of 8 bits of color information per pixel, are exported in GIF format. Black and White images are exported as Indexed images (8-bit). Canvas exports Grayscale images as Indexed images (8-bit) or JPEG-compressed RGB images, using the format that it determines will produce the best results.

How slices are exported

If slices are available in the Canvas document at the time of HTML export, then Canvas will design the document layout to conform to the slices. Canvas will also accept an individual slice's setting when it renders and names the images (see "Exporting Slices" on page 35.17 and "Slicer Export Options" on page 35.17).

Note: Slices are used only when Table Layout is activated.

How animated GIFs and Web buttons are handled

When exporting animated GIFs, one GIF file will be produced for each animated GIF.

Regarding Web buttons, one image for each Web button's state will be exported. This group of images will be linked together using Java scripting.

You cannot overlap these objects in Table Layout mode. If that happens, then an Animated GIF or Web button will be rendered and exported as a simple image. You can overlap the objects in CSS Layout mode only.

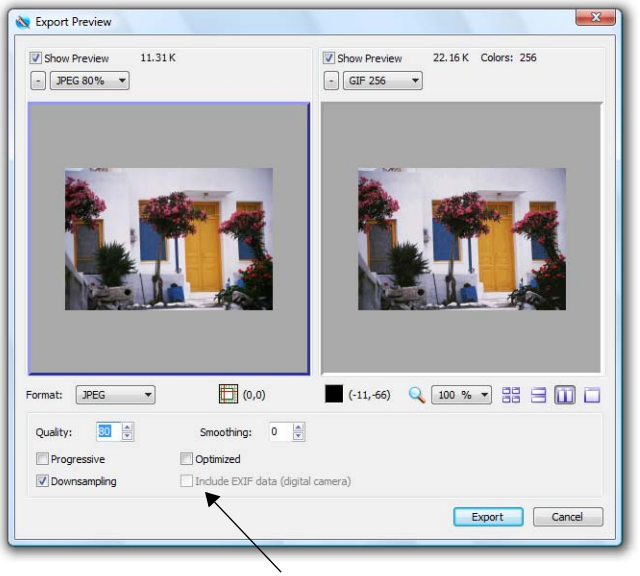
EXIF extension (JPEG)

EXIF is the abbreviation for Exchangeable Image File, a format that is a standard for storing interchange information in digital images using JPEG compression. Almost all new digital cameras use the EXIF annotation, storing information on the image such as shutter speed, exposure compensation, F number, what metering system was used, if a flash was used, ISO number, date and time the image was taken, whitebalance, auxiliary lenses that were used, and resolution.

Canvas allows digital photographers quick and easy access to most of the information that is attached to these images. After being imported into Canvas, the attached data may be viewed by choosing Image > DCS information (EXIF). This command is disabled if the image does not contain EXIF data.

You can also view the EXIF data via a context menu. Select the image and right-click to open the menu. This command will not appear if the JPEG file does not contain EXIF data.

Note: An option to include or remove EXIF data when exporting JPEG images has also been included in the Export Preview.



The EXIF option is available from the Export Preview window. If an image does not contain EXIF data, then the option is grayed out as shown in this example.

✓ Tip

Prior to exporting your document as an HTML file, we recommend that you make certain to save your original project as a Canvas file. You can then edit the original Canvas document if you want to make changes at a later date.

Using the Save to Web command

The easiest way to create Web pages in Canvas is to save a Canvas document using the Save to Web command.

To save a Web site using Save to Web

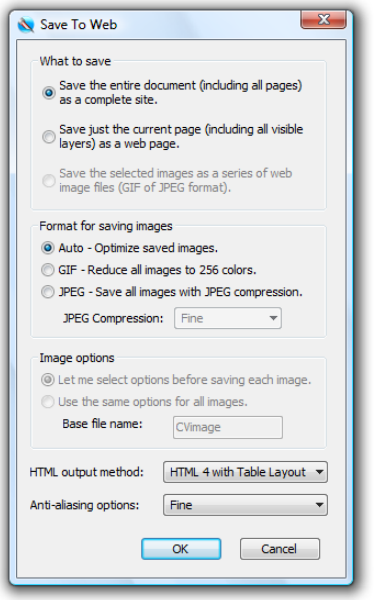
1 Choose File > Save To Web to open the Save to Web dialog box, which contains controls for range, as well as image and html export.

2 Select the export range by enabling an option in the What to save section.

3 Select either Auto, GIF, or JPEG for the image export in the Format for saving images section.

4 Open the HTML output method menu and select either HTML 4 with Table Layout or CSS2 Layout.

5 Select an anti-aliasing method to smooth the edges of objects that Canvas renders for export. Coarse uses the least number of colors and Finest uses the most.



Exporting as a Flash file

Canvas now provides compatibility for designing Web content to be used in a Flash®-enabled Web site. As a result, all Canvas documents can be saved in the .SWF format.

After completing your document, choose File > Save As. In the Save As dialog box, select the Macromedia Flash (.SWF) option. Click the Save button and the Flash Options dialog box opens.

Flash Options dialog box

A General options

Export mode - Choose between SWF Player or SWF Editor.

- SWF Player - Creates an .SWF file for use in Macromedia Flash player or a Flash-enabled Web browser.
- SWF Editor - Generates the .SWF file for import into Macromedia Flash.

Note: Exporting an .SWF file for use in an .SWF player doesn't automatically mean that the file can't be imported into a .SWF editor or vise-versa. However, to reduce possible problems, we suggest that you export your Canvas file using a mode that matches your specific Flash export needs.

Page export - This feature allows you to have the option to save a multipage document either as a single multiframe .SWF file or as a set of individual .SWF files:

- File with Frames - enables a multi-page Canvas document to be exported as a single multiframe .SWF file.
- Individual Files - allows a multipage Canvas document to be exported as separated SWF files. One will be created for each page in a Canvas document.

Accurate strokes - enables exporting graphics that contain either calligraphic strokes or strokes that use texture, gradient, or hatch patterns.

Note: This option may make the export process more time consuming.

B Image Options

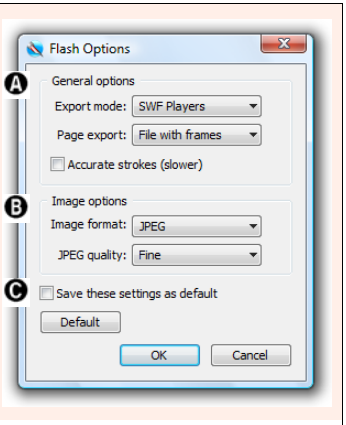
This feature allows you to choose an image format that will be applied to the original Canvas file when exported as an .SWF file.

Image format

- JPEG — produces well compressed images. Loss of data may have an impact on image quality.
- LossLess — does not affect the quality, but the compression ratio is usually lower than using JPEG.

JPEG quality - This option is only available if the lossy (JPEG) compression has been selected. Four JPEG quality levels are available:

- Best - 100% of quality is preserved
- Fine - 90% of quality is preserved
- Good - 75% of quality is preserved
- Draft - 50% of quality is preserved



Best should be chosen if a detailed image is desired and file size is not a concern. Draft can be selected if you need a small file for transmission and image quality is not an issue. Usually the Fine quality option provides the optimal quality-to-size ratio.

C Save these settings as default. Select this option if you wish to save these settings as the default for all subsequent SWF files.

Exporting as PDF

You can export Canvas documents to the Portable Document File (PDF) format. Canvas has the ability to apply security settings and embed fonts, and halftone settings. A specific color mode is also available so that it may be applied to all PDF objects. Also, the whole file can be compressed by the PDF export filter.

- **To export to PDF:** Choose File > Save As. Select PDF - Acrobat™ files as the format. Enter a name for the file and click Save. The PDF Options dialog box appears.

PDF Options

Apply settings to your exported PDF file.

A General options

Compress text and vectors. All vector graphics, including a stream of text data, is compressed when this option is activated.

Apply 7-bit ASCII encoding. If activated, all binary data is filtered through an ASCII filter, which converts a file so it can pass through a data channel that supports 7-bit data only (e.g., e-mail servers). ASCII encoding increases data size to an approximate ratio of 5 to 4.

Add security features. Select this checkbox and the Security Options dialog box opens. To adjust security settings, click the Settings button (see "Security settings" on page 35.31).

Exact character positioning. Each character of a text object is positioned individually to achieve maximal precision. This choice produces a little larger PDF file; however, if precise text layout is required, this option is correct. If this option is deselected, the PDF export filter tries to merge together as many characters as possible to form whole words and lines of text. This way, it is easier to work with text if the user decides to modify the PDF file later when imported back in Canvas.

Embed font subsets. Select this option to embed subsets of all TrueType and PostScript (Type1) fonts. Click the Settings button to view the various font embedding options (see "Embedding font subsets" on page 35.31).

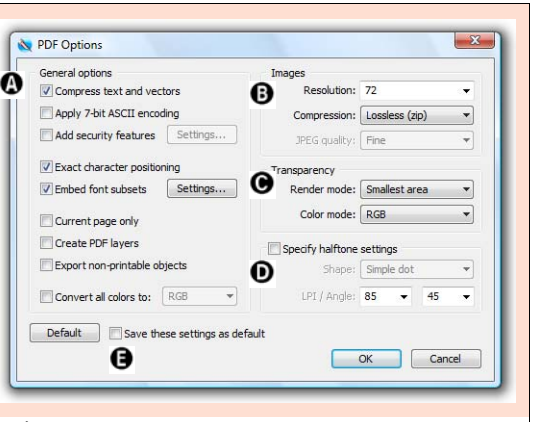
Current page only. Select this option to export the current page.

Create PDF layers. Select this option to export the document layers in the PDF. If not selected, all objects export on one layer. If a layer is hidden, that layer will not export.

Export non-printable objects. Select this option to export objects that are not printable in the Document Layout palette (see "Setting options in the palette," page 11.3).

Convert all colors to. If activated, the color of all vector, text, and image objects is converted to RGB or CMYK. If not selected, all objects retain their original color mode.

B **Images.** Set resolution, compression, and JPEG quality options.



Resolution. Affects bitmap rendering. Default settings are 72 or 96 dpi. The chosen resolution is applied to all images. We recommend 72 or 96 dpi for online documents. A printed document requires 150 or 300 dpi. You may choose a higher value; however, 300+ dpi produces a large file size.

Compression. Bitmaps are compressed during export. Choose lossless (ZIP) or lossy (JPEG) compression. Lossless is appropriate for technical drawings, illustrations, or cartoons, while JPEG compression is best for photographs.

JPEG quality. Only active if lossy (JPEG) compression has been selected. Four quality levels are available: Best, Fine, Good, and Draft. These options are the same as the ones for Flash Export (see "Flash Options dialog box" on page 35.29).

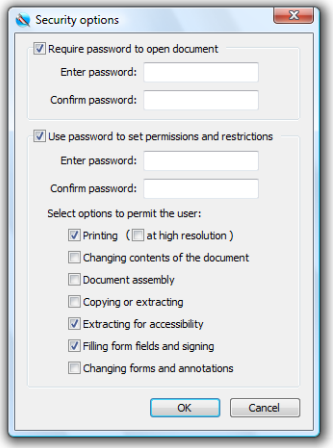
C **Transparency.** Use the Render and Color mode options to decide how colors of a transparent object are rendered (see "Transparency settings" on page 35.32).

D **Halftone settings.** Select halftone information to store inside the PDF. If no settings specified, custom halftone information isn't applied to a document. The halftone setting of the output device isn't used when printing your PDF (see "Halftone settings" on page 35.32).

E **Save these settings as default.** If selected, the settings will be the default PDF settings.

Click the Default button to restore the default settings file.

Security settings



When exporting to PDF, you can set one password for opening the document and an additional password for permissions and restrictions for various features such as printing and copying. These passwords are independent of each other.

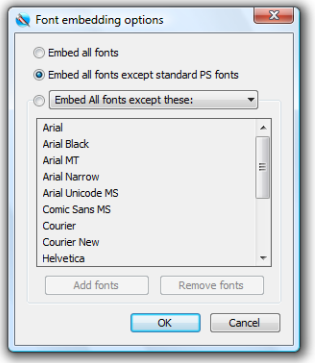
If you want to define a password to open the document, select the Require password to open document checkbox and define the password.

Note: Anyone who needs to open the PDF must have this password.

If you want to establish permissions for various options, select the other checkbox and define the other password. Then select the checkboxes for the options that the user is able to perform; i.e., printing, copying, extracting.

Note: If an option is not selected, the user cannot perform this action.

Embedding font subsets



The creation of subsets means that only characters used in the document are embedded.

This setting ensures the safe electronic transfer of a document between different platforms, machines, or offices; however, embedding the fonts could dramatically increase the size of the resulting PDF document.

To view the other options, click the Settings button to open the Font embedding options dialog box.

Embed all fonts Select this option to embed all fonts.

Embed all fonts except standard PS fonts Select this option to embed only the fonts that are not standard postscript fonts.

Embed all fonts except these Select this option if you want exclude specific fonts from being embedded.

Embed none but these fonts Select this option to specify which fonts should be embedded.

For the last two options, click the Add fonts button if you don't find the font in the list. The Available fonts dialog box opens. Select the font(s) that you want to add to the list.

Transparency settings

These settings decide how colors of a transparent object are rendered.

Render mode

Specify which area of a transparent object is rendered.

Smallest area Only objects that contain a transparency are rendered. This option can be safely used if there are objects using only one color space on the page. It can also be used if the transparent objects don't interfere with other color objects.

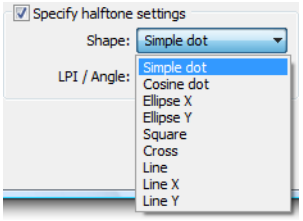
Complete area Renders transparent objects and all of the objects that touch them. We suggest this setting when the transparent objects interfere with other non-transparent objects that use different color modes.

Entire page This setting renders the entire page if it contains any transparent objects.

Color mode

This option specifies the color space used when rendering transparent areas. This feature is not available if Convert all colors to is activated. If Convert all colors to is active, then the global color mode is used.

Halftone settings



Note: Some output devices may override these settings with their own default settings. Contact the device's manufacturer to learn how to disable this option for the device that you are using. Doing so will ensure that your custom PDF options are used.

Shape Specifies the shape of the halftone dots. Each shape is defined by a simple function as is described in the PDF (and PostScript) documentation.

LPI and Angle Specifies the halftone grid. Lines Per Inch (LPI) defines the density of the grid, while Angle defines orientation of the grid.

✓ **Tip**
See the Adobe® Acrobat® documentation for more information on Acrobat transition effects.

To export transition effects into a PDF

Canvas can embed presentation slide transition effects within PDF files. Since a one-to-one conversion between Canvas transition effects and those available within Acrobat don't always exist, the export filter maps effects that don't correlate directly as follows:

1 Effects that are the same or almost the same

Canvas	Acrobat
NO DISSOLVE	Replace (i.e. 'no effect')
SLIDES	Wipe
VENETIAN BLINDS	Blinds
HORIZON	Split (horizontally)
DOORS	Split (vertically)
SHRINK BOX	Box (closing)
GROW BOX	Box (opening)
DISSOLVE	Dissolve

2 Similar effects

Canvas	Acrobat
SWITCHER	Wipe
STRETCH OUT	Split (horizontally)
IRIS IN	Box (closing)
IRIS OUT	Box (opening)
CORNERS	Box (opening)
JAIL BARS	Blinds (vertical)
CHECKERS	Glitter (0 degrees)
CASCADE	Glitter (270 degrees)
CROSS CUT	Glitter (315 degrees)

3 Other effects

Canvas	Acrobat
CLOCK	Dissolve
BUBBLES	Dissolve
SPEED BOX	Dissolve
STAR BURST	Dissolve

Timing

In Canvas, the duration of an effect can be set on a scale that goes from 'min' to 'max'. That settings will be used in a PDF as a time that goes from 0.5 seconds up to 4.0 seconds.

Since there is no option for setting the length of time an individual slide will stay visible during a slide show, a default time of 15 seconds will be used; i.e., if the user doesn't go to the next slide, the next slide will come up automatically after 15 seconds.

To export hypertext links and URLs

The PDF Export filter now supports all links that have been set through the Link Manager (see "Using the Link Manager palette" on page 35.2). Links to individual pages of a multi-page document will result in the creation of hypertext links within the PDF. Links to external HTML or PDF files are also supported.

It should be noted that PDF supports rectangular (orthogonal) hot-spots only; i.e., if a URL is assigned to a rotated text object, the bounding box of the text will be defined as the hot-spot area. This should not be a problem if there is just one such link on a page. However, be aware that if more than one rotated text (or other non-rectangular objects) with a URL are used on a page, their bounding boxes may intersect. This may cause links that are located beneath another's bounding area to not work as expected.

Default bookmarks of a multi-page document

When exported, a document containing more than one page will link to each individual page of the document. Names of each page are used as titles for the bookmarks. Because they are exported as Unicode text each title may contain any letter that is supported by your current locale.

Using Multiple Master PostScript Fonts

The PDF Export filter can't embed Multiple Master fonts. If a Multiple Master font is used in a document, the PDF filter exports all standard properties of the font; however, it will not embed the actual data of the font, regardless of the current setting in the PDF Export dialog box.

CHAPTER 36

PRESENTATIONS

You can create Canvas presentations that can be played by other Canvas users or self-running slide shows.

Creating slide shows

✓ Tip
Remember to first save your presentation as a Canvas file so you can make changes to the original file and view the presentation on either platform.

When creating a presentation in Canvas, you can save the presentation in two ways:

- **Canvas file (.CVX):** If you save it as a .CVX file, the presentation can be opened by another Canvas user.
- **Canvas Slide Show (.EXE):** An .EXE file is a self-running application that can only be executed on a Windows platform. You don't need Canvas to run this file (see "To play the slide show (.EXE)," page 36.6).

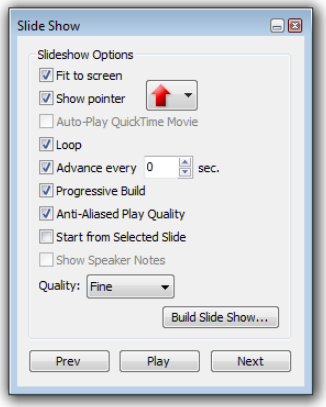
To create a slide show

1 Choose File > New and select Presentation as the Type of Document.

2 Use the Document Layout palette to add slides, layers, and specify various options that affect how the slide show is played (see "Using the Document Layout palette," page 11.2 and "Slide options," page 36.4).

3 Open the Slide Show palette by choosing Layout > Slide Show (see "Slide Show palette" on page 36.2).

Slide Show palette



You'll need to access the Slide Show palette if you want to build a slide show or view a slide show. Choose Layout > Slide Show to open the palette. This is a floating palette that can be kept open to create, configure, and play slide shows.

You can select the following options in the Slide Show palette:

Fit to screen Reduces or enlarges the document's slides so they fit within the screen area of the system used to play the slide show. Canvas calculates a scaling factor based on the size of the system's monitor and the resolution setting.

Loop Causes the slide show to play continuously until you interrupt it. When Canvas reaches the end of the document, it begins the slide show from the first slide.

Show Pointer Displays a pointer on screen during playback. Enable this option and select the pointer from the pop-up menu. You can control the pointer with the mouse during the slide show, so you can indicate important items in the presentation.

Advance Every _ Seconds Makes the slide show self-running by advancing from one slide to another after a specified interval, without any intervention from the operator. Enter the number of seconds in the text box. The exact timing between slides depends on the speed of the system used for playback and the complexity of the illustrations.

Progressive Build The Progressive Build option in this palette will allow you to play a self-running slide show either layer by layer or slide by slide. While playing your self-running show, you also have the option to control the progression of each slide in the show. (see "To play the slide show (.EXE)" on page 36.6).

Anti-Aliased Play Quality Select this option to anti-alias (smooth) vector and text objects during playback. If you select "Vector Quality: Anti Aliased" in the Configuration Center, Canvas will anti-alias objects in your documents *except* when playing slide shows.

Build Slide Show Opens the Save As dialog box. Enter the name of the document in the file name field. Ensure that the (.EXE) extension is kept.

Note: Another way to begin this process is to choose File > Save As. If you choose this method, then your presentation will use the options that have been set in the Slide Show palette.

Adding speaker notes

✓ **Tip**
To create a slide show and have access to the Slide Show palette, ensure that you select Presentation as the document type.

If you are presenting a slide show, speaker notes can help you remember important points of discussion. You can also create these notes for your audience. Each slide can have its own set of speaker notes.

Note: To view the speaker notes while showing the slide show, your presentation must be in .CVX format. You must also select Show Speaker Notes in the Slide Show palette.

To create speaker notes

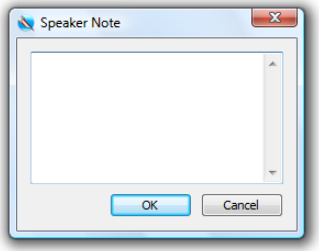


1 Select the Speaker Notes tool. The cursor changes to a crosshair.



2 Click the crosshair in the slide area. A Speaker Notes object appears with a gray circle that indicates that no notes have been entered.

3 Double-click on the Speaker Note graphic to open the Speaker Note dialog box.



4 Enter the text in the dialog box and click OK when you have finished. The circle turns green indicating that the Speaker Note contains text.

Note: You can also enter text in the field that appears in the Properties bar when the Speaker Notes tool is selected. Click Create. The Speaker Notes object appears in the upper left corner of the layout area.

You can update or delete the text at any time by selecting the Speaker Notes object and updating the text in the field that appears in the Properties bar. Click in the layout area to deselect the Speaker Notes object. The text is updated.

✓ **Tip**
If you delete the Speaker Notes object, any text that it contains will be deleted.

To play a slide show that contains speaker notes

1 Choose Layout > Slide Show to open the Slide Show palette.

2 Deselect the Fit to screen checkbox. If this option is selected, the Speaker Notes will not be visible.

3 Click the Play button. The slide show appears on the left side of the screen and the Speaker Notes on the right side.

Displaying a slide show on two monitors

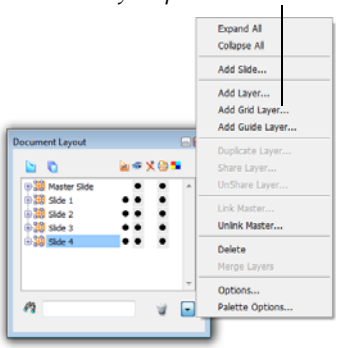
In order to use this function, you must have the necessary hardware to support two monitors. Refer to your system documentation.

If using two monitors, Canvas displays the slide show on the full screen of the primary monitor. The slide show and speaker notes are shown in normal view on the secondary monitor.

Note: If you do not know which monitor is primary and secondary, use the Display Options in the Control Panel.

Slide options

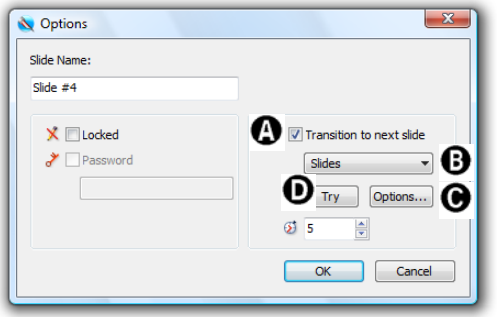
Document Layout palette menu



In the Options dialog box, you can define slide properties such as names and transitions. To access the Options dialog box, open the Document Layout palette (Layout > Document Layout). Then open the palette menu and select Options.

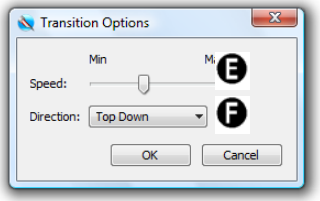
To set slide transitions

You can set transitions for the current slide or multiple slides. To apply a transition effect to multiple slides, select the slides in the Document Layout palette and open the Options dialog box as previously explained.



1 To use a transition effect (such as Dissolve or Iris In), select Transition to next slide (A). If you do not select this option, the slides simply appear in sequence.

2 Select a transition effect in the pop-up menu (B). If there are options for the transition effect, the Options button (C) is available. Click the button to open the Transition Options dialog box.



Tip

Remember to first save your presentation as a Canvas file so you can make changes to the original file and view the presentation on either platform.

3 In the Transition Options dialog box, drag the slider (**E**) to adjust the transition speed from Min (slowest) to Max (fastest). Select a Direction (**F**) (if available) and then click OK to return to the Options dialog box.

4 To preview the transition effect, click Try (**D**).

5 Click OK in the Options dialog box to apply the settings to the selected slides.

Once you have finished setting your options, you are ready to save your presentation as either a Canvas file (.CVX) or Canvas Slide Show (.EXE).

6 Choose File > Save As to open the Save As dialog box.

7 Enter a name in the File Name field.

8 Select either .CVX or Canvas Slide Show (.EXE) for the file format.

9 Click Save.

Viewing slide shows

Canvas Presentations that are saved as Canvas files (.CVX) can be viewed within Canvas. When you play a Canvas Presentation, Canvas displays the document's slides in order, using the specified transition timing and effects.

A presentation slide show can be set to automatic mode, in which the slide show plays once and stops or repeats continuously. Slide changes also can be controlled by an operator. Canvas can show slides using a time interval that you specify, or you can control the pace by clicking the mouse to switch to the next slide whenever you are ready.

To play a slide show in Canvas (.CVX)

1 Choose File > Open and find the Canvas Presentation document (.CVX).

2 Choose Layout > Slide Show to view the Slide Show palette.

3 Click Play on the palette. If "Advance Every _ Seconds" is selected, Canvas changes slides at the specified interval. Otherwise, click to change slides. Ctrl-click to go back one slide.

4 To stop the slide show, right-click.

Note: While playing a Slide Show within Canvas, you may view each layer in reverse order. To do this, you must press Ctrl+Shift and click the mouse.

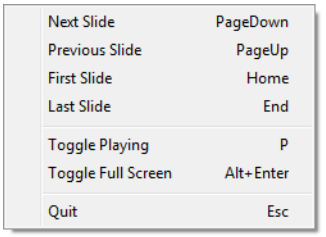
To play the slide show (.EXE)

If the slide show was saved as an .EXE file, you can view it as a self-running application on a Windows platform.

Slide show .exe icon 

1 To run the program, locate the application (.EXE).

2 Then double-click the icon or right-click and select Open from the context menu. The slide show will open.



3 Now right-click on the screen to access the Slide Player menu. This gives you various options for playing back your slide show using your mouse and keyboard.

Quit Exits the slide show.

Next Slide — Advances to the next slide.

Previous Slide Goes back one slide.

First Slide Goes to the beginning of the slide show.

Last Slide Goes to the end of the slide show.

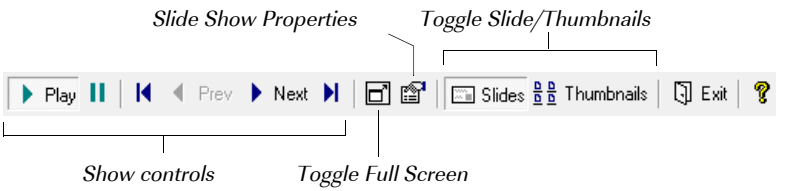
Toggle Playing Alternates between playing the slide show or pausing the slide show.

Toggle Full Screen Alternates between a full-screen presentation and a window-sized presentation.

✓ Tip
To view the slides in reverse order, Ctrl-click the mouse. To advance the viewing of the show, Alt-click the mouse.

Slide Show menu bar

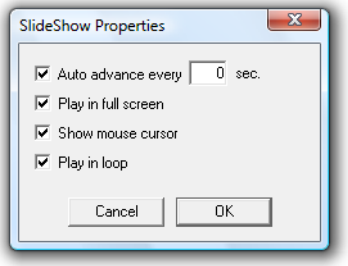
If you choose to view a window-sized presentation, at the top of the window is a menu bar that basically has the same functions as the Slide Player menu, except for the Slide Show Properties and Thumbnails option.



✓ Tip

If you want the slide show to loop while playing, you must select both Play in loop and Auto advance every _ sec and enter a number in the field. Otherwise, you'll have to click the mouse to advance the slides.

Click on the Slide Show Properties button to open the Slide Show Properties dialog box. Use these options to control how the slide show is presented.



SEISMIC DATA

CHAPTER 37

SEISMIC DATA

The global energy marketplace is a continually transforming one where sometimes change is the only thing that remains constant. In order to stay at the forefront, companies have to keep up with the latest technologies and develop the best strategies. Not only is this the case for oil and gas companies, but also for the companies that provide services and products to this specific industry.

In the oil and gas industry, seismic data is the primary type of data used by geophysicists. Analysis of seismic data gives earth scientists and data specialists their first clues as to the whereabouts of valuable resource locations. Generally, petrotechnical applications export seismic data in CGM*PIP format, which is a two-dimensional graphic data that contains either vector objects or both vector and image objects. Canvas' support for CGM*PIP files as well as other capabilites allow for significant increases in company productivity and workflow.

CGM*PIP Import Filter

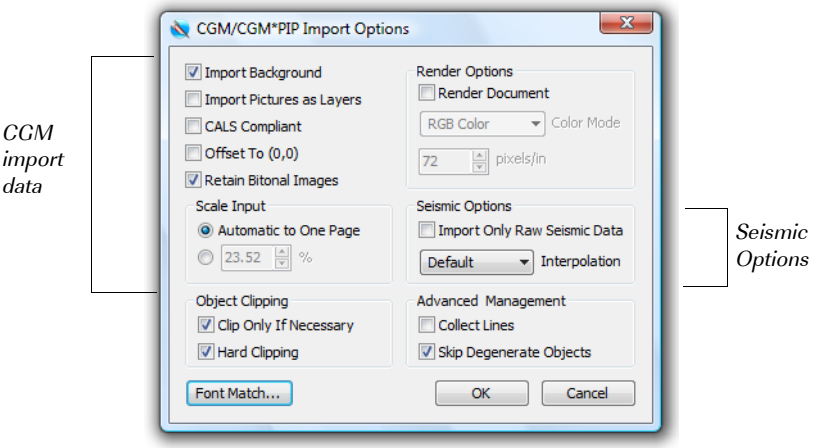
The CGM*PIP (Petroleum Industry Profile) Import filter has received acclaim from scientists in the petroleum field for its ability to successfully work with files from UNIX-based seismic interpretation applications.

The tool was created in response to a specific oil industry need. Geologists and earth scientists often have to use seismic files in their studies and various reports. The most popular seismic interpretation applications are UNIX-based ones such as Landmark, GeoQuest, and Charisma, which all use the standard CGM*PIP file format. The CGM*PIP Import filter permits files from these UNIX-based seismic interpretation applications to be imported into Canvas. Since UNIX-based seismic interpretation applications are routinely used in the petroleum industry, earth scientists and data specialists around the world quickly embraced the Canvas CGM*PIP filter as an invaluable tool.

CGM*PIP Import Options

The CGM import data is located at the top of the dialog box.

When importing Seismic files directly into Canvas, certain options are presented that affect how the filter reads raw data.



Seismic options

The following options appear in the Seismic options section:

Clip Only If Necessary This option eliminates clipping rectangles if they do not clip any of the objects assigned to them. Those objects are contained entirely within the clipping area and checking this option will allow Canvas to redraw much faster; however, if any object stripped of the clipping rectangles is moved outside that area, they will not be clipped because the clipping rectangle has been removed when setting this option. Be careful with this option if you want to move objects in the document.

Import Only Raw Seismic Data Select this option to import only the seismograph samples. The subsequent trace objects will not have any wiggles or background images, only those samples. Later, using the Seismic Traces palette, you can create wiggles or background image from those samples.

If this option is not selected, the wiggles and/or background image will be created on import in accordance to settings included in the CGM file.

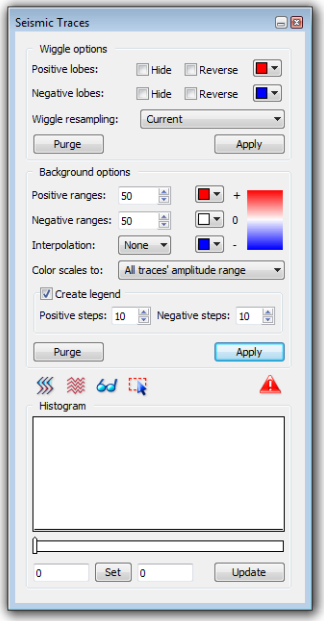
Interpolation The following options are available:

- Default – Defined in PIP file
- Off Always – No color interpolation

- 1D Always – Displays the background in baseline direction only
- 2D Always – Displays the lines in biaxial interpolation

Font Match Click on this button to open the CGM Font Matching dialog box. The fonts to be substituted appear in the Original Font column. Select a substitute font from the with menu at the bottom of the dialog box and click OK.

Seismic Traces palette



Geologists and earth scientists often have to use seismic files in their studies and various reports. The Seismic Traces palette was designed to allow professionals to examine traces in imported CGM files.

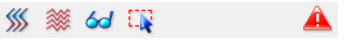
To perform any operations on Seismic Trace objects they must be selected. If Seismic Trace objects are grouped, they have to be ungrouped.

- **To open the Seismic Traces palette:** Choose Window > Palettes > Seismic Traces.

Important: If a trace does not contain seismic data, no wiggle or background image creating can be performed on the trace. Such a trace might be imported from a CGM file with a background image already created; however, if the user erases that background image using the Purge button, it is only possible to recreate the background image via the Undo command. Refrain from performing background image operations on traces that do not contain seismic data.

Control panel

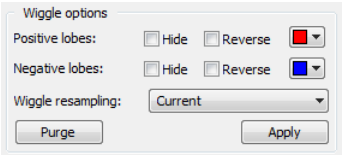
The following icons are used to control the display or convey information regarding seismic traces:



This icon	means this
	Click this icon to display wiggles; click again to hide wiggles

This icon	means this
	Click this icon to display background image; click again to hide background image
	Click this icon to adjust wiggle display accuracy
	Click this icon to select all trace objects on current page
	Icon indicating that all selected traces have seismic data
	Icon indicating that only some of the selected traces have seismic data
	Icon indicating that none of the selected traces have seismic data

Wiggle options



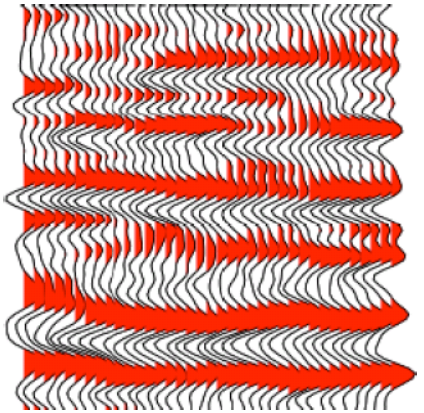
The Seismic Traces palette offers a range of ways to visualize wiggles. The Wiggle options section contains the following controls:

Lobes For both positive and negative lobes, you can hide them, reverse them, and assign them a color.

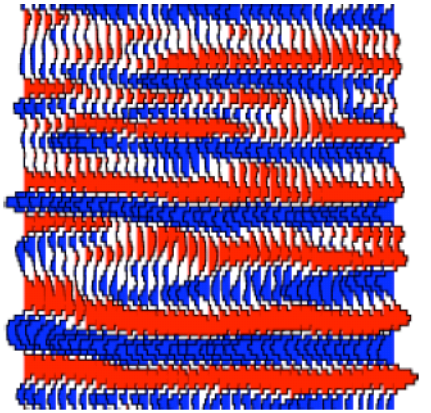
Wiggle resampling Select a resampling method from the menu, Current, Linear approximation, or Replicate points. If you don't want to change the resampling method when changing other Wiggle options, select Current in the Wiggle resampling menu (see "Wiggle resampling" on page 37.5).

Click Apply to apply any changes to the selected traces. Click Purge to purge all wiggles.

Wiggle resampling



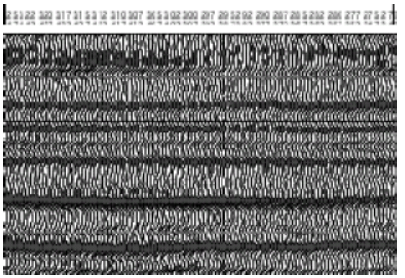
Group of traces in their original representation (linear approximation)



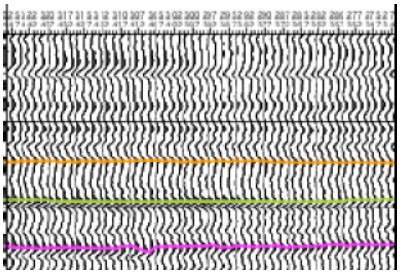
After changing colors and resampling method (replicate points)

To help better display dense plots Canvas can try to adjust accuracy with which to display wiggles. This will lower the exactness of the display but will help creating a clearer picture. The adjusted accuracy feature is triggered (if selected) when the magnification is below 100%.

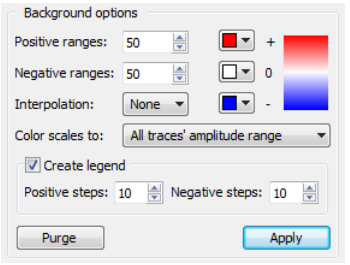
Dense plot displayed without adjusted accuracy (at zoom 50%)



Same fragment with adjusted accuracy(at zoom 50%)



Background options

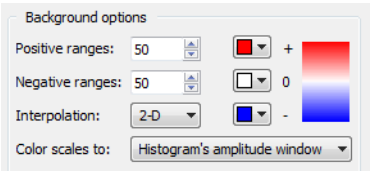


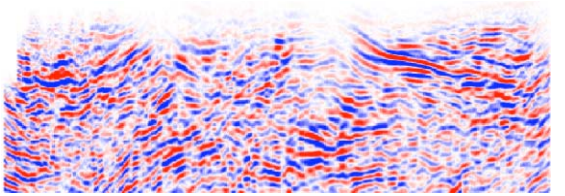
Another way of visualizing seismic data can be accomplished by creating a background image in which color is directly derived from the data. The image representation of the data is created by assigning colors to maximum, minimum, and 0 value of the data. All other data values fall in positive (between maximum value and 0) and negative (between 0 and minimum value) ranges, number of which is set by the user. The same is done with the color space between colors assigned to maximum, minimum, and 0 values. Each range of values is then assigned a color that will represent the range in the image. Colors can be later interpolated between neighboring traces to create a smoother image.

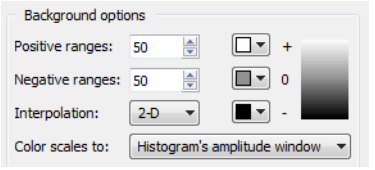
A color legend can also be created. The number of notches on the legend can be set by entering values in the Positive steps and Negative steps fields. The maximum number of notches is 20.

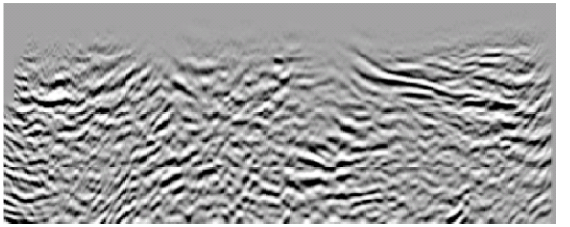
Click Apply to create a new image from data contained in selected traces using current options. Click Purge to erase the image already created for the selected traces.

The following images show image representation of the same fragment of data using different color ranges.





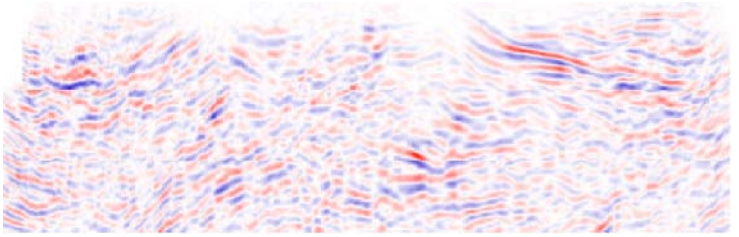




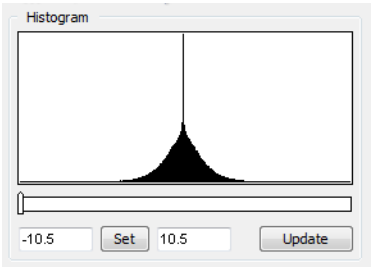
If the majority of the data is concentrated within a narrow range of values as compared to the full data range between maximum and minimum data values, the image created will appear *blank* since the

data will be assigned only a few colors from the available spectrum. If this occurs, you can obtain the histogram of data contained in the traces and then set a window of values within which image colors will be scaled. All values falling outside this window will be assigned a minimum or maximum color.

Image created with colors scaled to full data range

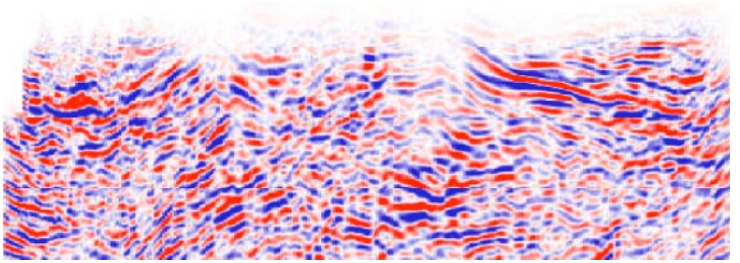


To address this problem, you should obtain the histogram of the data by selecting traces and clicking the Update button. Then, you set a window of values by entering a window of values and then clicking Set. You would then select Histogram's amplitude window from the Color scales to menu. Click Apply.



You can also set the limits by dragging sliders beneath the histogram. In the image to the left, the window limits have been set at -10.5 and 10.5.

Resulting image will look much more vivid



VISUALIZATION & ANALYSIS

CHAPTER 38

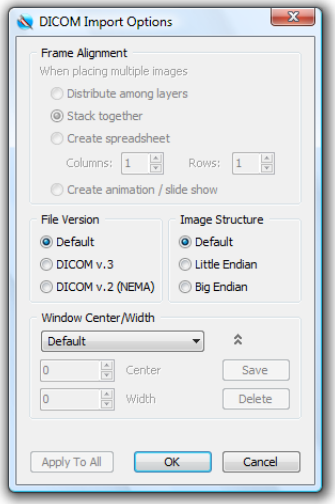
DATA ACQUISITION, VISUALIZATION & ANALYSIS

Canvas has the ability to accurately measure, analyze, and export digital images that may contain up to 32 bits per channel of data.

Specialized imaging instrumentation within the medical, geological, and other related scientific industries often creates image or data files that may contain more than 16 bits of data per grayscale channel. Canvas now combines its professionally engineered technology core with a number of new interface improvements that target the need to study and analyze this information.

Working with DICOM images

Commonly used in medical imaging, DICOM (DIC) files can be imported into Canvas for further study. Combine the DICOM import filter with Canvas' tools, various image filters and adjustments along with its slide show capabilities to create dynamic medical presentations. You can even export your findings to HTML.



DICOM Import Options

A DICOM file may consist of one or many images. Canvas can read DICOM files as follows:

- RGB images are imported as RGB and grayscale are imported as grayscale.
- Indexed images are converted to RGB.
- Depending on the image's range, it will be converted to 8 bit, 16 bit, 32 bit, or 64 bit images.

To import DICOM files

Choose File > Open, File > Place, or Image > Import and the DICOM Import Options dialog box opens. If you try to open or place more than one image, the Frame Alignment options are enabled.

Distribute among layers Select this option to place each image on a separate layer in the same document.

Stack together Select this option to place the images on top of each other.

Create spreadsheet Select this option to create a matrix of the various images. Define the number of rows and columns.

Create animation / slide show Select this option if you want to create a presentation or export as an AVI file.

File Version Select either Default, DICOM v.3, or DICOM v.2 (NEMA).

Image Structure Select either Default, Little Endian, or Big Endian.

Window Center / Width This option allows you to adjust the level settings of the image so you can optimize image contrast upon import for improved image analysis. Select None from the menu if you want no level setting adjustment. Select Default to use the values within the image itself. Select New Preset to create a user-defined setting.

✓ **Tip**
When creating settings, try to use a name that relates to its use.

- **To create a user-defined setting:** Enter values in the Center and Width fields. Click Save and enter a name in the dialog box.
- **To apply a user-defined setting:** Open the menu and select the setting and then click OK.

RAW file format

RAW format is a flexible file format for transferring documents between different applications and computer platforms. It is basically an import/export format rather than a storage format.

A RAW file has no predefined format, not even for image width and height, palettes, etc. RAW format consists of a stream of bytes describing the color information in the file.

Exporting RAW files

You have two options when exporting to RAW format: binary (.raw) or text (.txt).

To export to RAW format (binary)

1 Choose File > Save As.

2 Select RAW Image (binary) as the format.

3 Click Save. The Raw Image Export Options (binary) dialog box opens.

Raw Image Export Options dialog box (binary)

A Image Specs — This section indicates the color mode, image size, and color depth.

B Binary options

Output. For 8-bit and 16-bit images, this menu is disabled and only indicates the color depth shown in the Image Specs section. For images with a color depth of FP-32 bits/channel, you can select the output depth.

Channels order. Select either Interleaved or Planar. These options are disabled if grayscale is selected as the color mode.

Interleaved refers to an image having the pixels stored contiguously; i.e., rgbrg-brgb. Planar means the color data is stored in separate 8-bit planes.

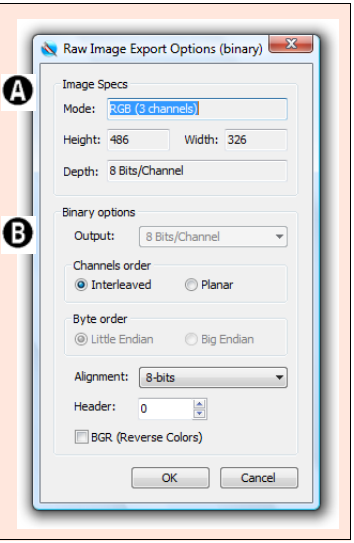
Byte order. For 8-bit images, this option is disabled. Select whether the byte order is for PC or Mac.

Alignment. Refers to the alignment of image data in file. Each row ends at a location, which is a multiple of 8 bits, 16 bits, 32 bits, or 64 bits.

Header. Enter the number of bytes in the file before the first byte of image data.

BGR (Reverse Colors). Select this checkbox to reverse the color order.

Click OK to export the file.



To export to RAW format (text)

1 Choose File > Save As.

2 Select RAW Image (text) as the format.

3 Click Save. The Raw Image Export Options (binary) dialog box opens.

Raw Image Export Options dialog box (text)

A Image Specs — This section indicates the color mode, image size, and color depth.

B Text options

Format. Select from Comma delimited, Tab delimited, Space delimited, Colon delimited, or Semicolon delimeted.

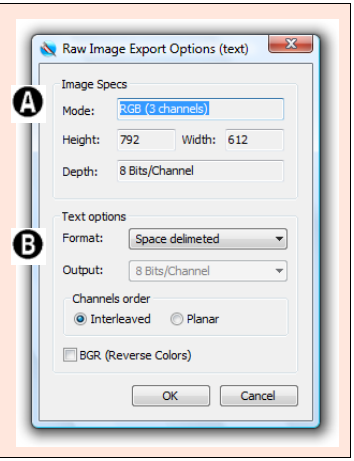
Output. For 8-bit and 16-bit images, this menu is disabled and only indicates the color depth shown in the Image Specs section. For images with a color depth of FP-32 bits/channel, you can select the output depth.

Channels order. Select either Interleaved or Planar. These options are disabled if grayscale is selected as the color mode.

Interleaved refers to an image having the pixels stored contiguously; i.e., rgbrgbrgb. Planar means the color data is stored in separate 8-bit planes.

BGR (Reverse Colors). Select this checkbox to reverse the color order.

Click OK to export the file.



Importing RAW files

You have three options when importing RAW files: binary (.raw), text (.txt), or comma separated values file (.csv).

Binary (.raw) is the most common selection since devices, like microscopes or various measuring equipment, produce binary (.raw) files.

To import RAW files

1 Choose File > Open.

2 Select Raw Image as the format and navigate to the file.

3 Click Open. The Raw Image Import Options dialog box opens.

Raw Image Import Options dialog box

A Input Data. Canvas normally detects the appropriate option. You can select either radio button.

B Image specs.

Mode. Select the color mode for the image: Grayscale, RGB, BGR, CMYK, LAB, or Multichannel.

Source. Select the source image type: 8 Bits/Channel, 16 Bits/Channel, 16 Bits/Channel signed, or Float-32 Bits/Channel.

Target. Select the target image type: 8 Bits/Channel, 16 Bits/Channel, or Float-32 Bits/Channel.

Height & Width. You must know these specifications to properly import the raw image.

Channels. The number of color channels depends on the image's color mode.

Resolution. Set the resolution for the image. Use either pixels/in or pixels/cm.

Quantity. Indicates the number of images stored in the file.

Gap. Indicates the number of bytes from the end of one image to the beginning of the next.

Channels order. Select either Interleaved or Planar. These options are disabled if grayscale is selected as the color mode.

Interleaved refers to an image having the pixels stored contiguously; i.e., rgbrgbrgb. Planar means the color data is stored in separate 8-bit planes.

C Binary options

Byte order. Indicates whether the file originates from a PC or Mac.

Header. Enter the number of bytes in the file before the first byte of image data.

Alignment. Refers to the alignment of image data in memory. Each row ends at a memory location, which is a multiple of 8 bits, 16 bits, 32 bits, or 64 bits.

Click OK to import the file.

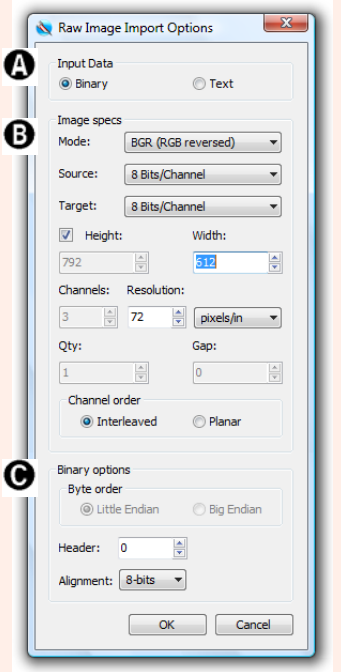


Image types & filters

Canvas supports 8-bit, 16-bit, and floating point (32-bit) images. All image filters are available for 8-bit images. For Binary filters, the 8-bit image must be grayscale (see "Binary filters," page 38.6).

Regarding 16-bit and floating point (32-bit) images, various image filters and adjustment commands are available (see "Available filters and adjustment commands," page 38.5).

Image modes

If you are working with various image types and need to determine or convert images, choose Image > Mode.

8 Bits/Channel

Indicates an 8-bit image. If working with 16-bit or 32-bit images, select this option to convert to an 8-bit image.

16 Bits/Channel

Indicates a 16-bit image. Select this option to convert to a 16-bit image if working with another image type.

FP-32 Bits/Channel

Indicates a floating point (32-bit) image. A floating point image refers to any array of data that is visualized. Select this option to convert to a 32-bit image if working with another image type.

Note: You must convert an 8-bit or 16-bit image to grayscale to enable the FP-32 Bits/Channel option.

The following table indicates the filters that can be used with each type:

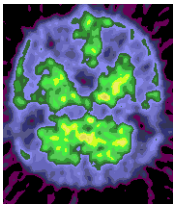
Image type	Available filters and adjustment commands
16-bit	Average blur, Gaussian blur, Add Noise, Despeckle, Dust & Scratches, Median, High Pass, Maximum, Minimum, Arithmetic, Binary Logic, Expression, Image Math, Colorize, Invert, Levels, Curves, Brightness/Contrast, Convolve, Hue/Saturation (RGB only), Color Balance (RGB only)
FP (32-bit)	Average blur, Median, Minimum, Maximum, Arithmetic, Expression, Image Math, Convolve, Colorize

Binary filters

These commands can be applied to 8-bit grayscale images. For the Dilate, Erode, Open, and Close commands, you must specify the number of iterations in a dialog box. Iterations refer to the number of repetitions of a chosen filter.

Dilate

The Dilate command enlarges objects that are darker than the background adding pixels to the edges of black objects.



Original image

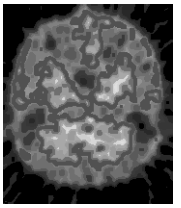
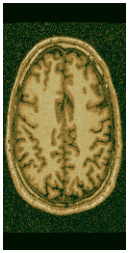


Image with Dilate filter applied

Erode

The Erode command reduces the size of objects that are darker than the background.



Original image



Image with Erode filter applied

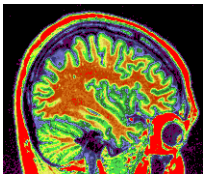
Make Binary

The Make Binary command converts a grayscale image, or the current selection, to values of either 0 or 255 so that you can apply a binary command to the image.

Close

The Close command is a combination of the Dilate and Erode commands. When selected, the filter first performs a dilation and then

the erosion. The goal of the filter is to smooth objects by filling in gaps in the image.



Original image

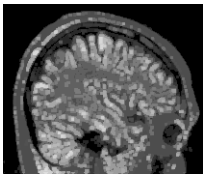
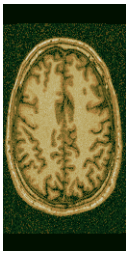


Image with Close filter applied

Open

The Open filter, a combination of the Erode and Dilate commands, is used to smooth objects and eliminate isolated pixels. When applied, the Erode filter is first performed, followed by the Dilate command.



Original image



Image with Open filter applied

Outline

Select this command and all black objects will be represented by a one-pixel wide outline.



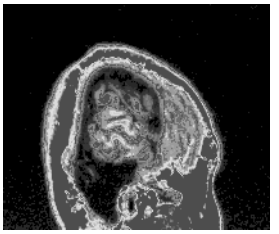
Original image



Image with Outline filter applied

Skeletonize

When this command is applied to 8-bit grayscale images, pixels are removed from the edges of objects until the edges consist of single pixel-wide skeletons.



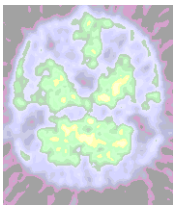
Original image



Image with Skeletonize filter applied

Distance Map

When applied, this filter creates an Euclidean distance map (EDM). The result of the command is that every black pixel is replaced with a gray value that is equivalent to the black pixel's distance from the closest white pixel.



Original image



Image with Distance Map filter applied

Ultimate Points

This filter is used on images to which the Distance Map filter has been applied to find the Ultimate Eroded Points (UEPs) of the Distance Map.

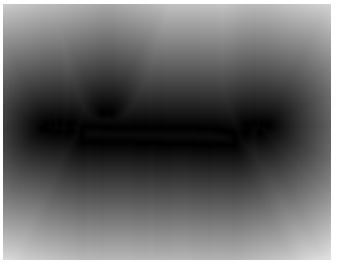


Image with Distance Map filter applied



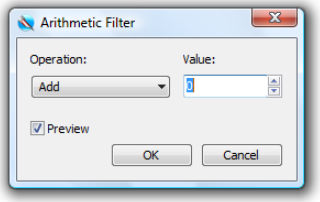
Image with Ultimate Point filter applied

Scientific filters

Canvas features scientific filters that can be used to analyze 8-bit, 16-bit, and floating point (32-bit) images. See "Available filters and adjustment commands," page 38.5 to verify which scientific filter is available for the various image types.

- **To access the Scientific filters:** Choose Image > Filter > Scientific.

Arithmetic



The Arithmetic Filter contains commands that add (subtract, multiply, etc.) a value to each pixel in the active image or selection. When the result value is above or below the legal range of the image's data type, the value is reset to the maximum/minimum value.

To apply an Arithmetic filter

1 Select the image object (or part of it with a Marquee or Lasso tool) or place it in edit mode.

2 Open the Operation menu to choose a command.

3 Enter a value in the Value numeric field.

4 Click OK.

✓ Tip
Select the Preview checkbox so you can see the result before clicking OK.

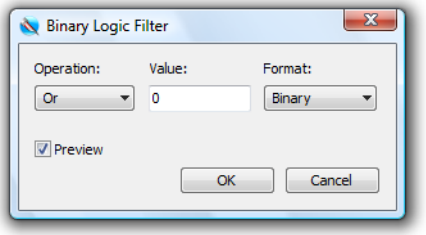
The Operation menu contains the following commands:

Operation	Explanation
Add	Adds a value to the image. With 8-bit images, results greater than 255 are set to 255.

Operation	Explanation
Subtract	Subtracts a value from the image. With 8-bit and 16-bit images, results less than 0 are set to 0.
Multiply	Multiplies the image by the specified real value. With 8-bit images, results greater than 255 are set to 255. With 16-bit signed images, results greater than 65,535 are set to 65,535.
Divide	Divides the image by the specified real value. Attempts to divide by zero will be ignored.
Minimum	Pixels in the image with a value less than the specified value are replaced by the value.
Maximum	Pixels in the image with a value greater than the specified constant are replaced by the value.
Square root	Destination pixel is equal to the square root of source pixel.
Square	Destination pixel is equal to the square of source pixel.
Gamma	Applies the function *f(p) = (p/255)^gamma*255* to each pixel *(p)* in the image or selection, where 0.1 <= gamma <= 5.0. For RGB images, this function is applied to all three color channels. For 16-bit images, the minimum and maximum are used for scaling instead of 255.
Log	Applies the function *f(p) = log(p) * 255/log(255)* to each pixel *(p)* in the image or selection. For RGB images, this function is applied to all three color channels. For 16-bit images, the minimum and maximum are used for scaling instead of 255.

Binary Logic

The Binary Logic Filter contains commands that perform bitwise operations or shift bits accordingly within a pixel.



The Operation menu contains the following commands:

Operation	Explanation
Or	Performs a bitwise OR operation on a source pixel and an argument.
And	Performs a bitwise AND operation on a source pixel and an argument.
Xor	Performs a bitwise XOR operation on a source pixel and an argument.
Left Shift / Right Shift	Performs a logical shift; it shifts all the bits in the pixel left or right according to the value specified in edit box and inserts 0.

Colorize

The Colorize filter is used to assign colors or gradients to a chosen range of values. Depending on the image type, 8-bit, 16-bit, or floating point (32-bit), you can use either absolute values or percentages.

For floating point (32-bit) images, the Absolute values checkbox is automatically selected so you will use Absolute values.





Using the Colorize filter

A New filter. Click on this icon to start a new filter. The default values are 0 to 100

B Value range. Enter the minimum and maximum in the scroll boxes. Deselect the Absolute values checkbox to use percentages for the range. Select it for actual values (floating point 32 images).

C Color palette. Assign a color to the value range. Select the Gradient option to access both color palettes and view the distribution of the minimum/maximum range.

D Edit box. All defined filters are stored in this area.

Select the Preview checkbox if you want to see the results before clicking OK.

To modify a filter

1 Select the filter in the edit box.

2 Make any necessary changes.

To delete a filter

1 Select the filter in the Edit box.

2 Click the trash can icon.

To save a setting

1 Define the filters as indicated previously.

2 Click on the menu icon.

3 Select Save settings. A dialog box opens in which you enter a name for the setting.

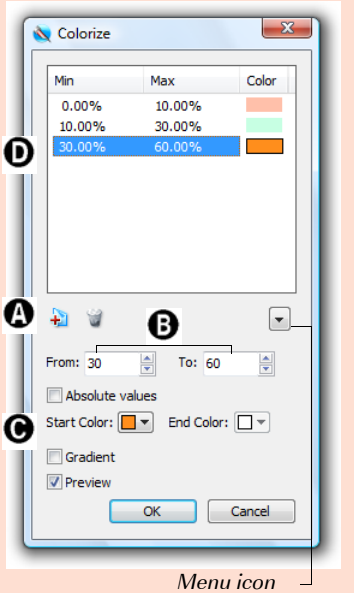
You can save an unlimited number of settings.

To load a setting

1 Click on the menu icon.

2 Select Load settings.

3 Choose a setting.



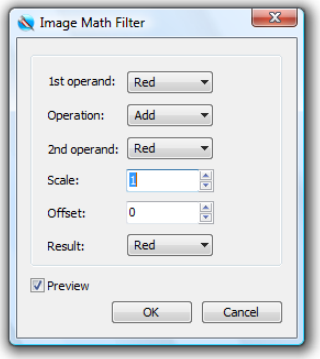


Image Math

This filter performs an arithmetic and logical operation between two color channels and applies the result to another color channel.

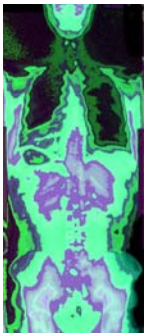
The Operation menu contains the following commands:

Operation	Explanation
Add	Adds a value to the image. With 8-bit images, results greater than 255 are set to 255.
Subtract	Subtracts a value from the image. With 8-bit and 16-bit images, results less than 0 are set to 0.
Multiply	Multiplies the image by the specified real value. With 8-bit images, results greater than 255 are set to 255. With 16-bit signed images, results greater than 65,535 are set to 65,535.
Divide	Divides the image by the specified real value. Attempts to divide by zero will be ignored.
Minimum	Pixels in the image with a value less than the specified value are replaced by the value.

Operation	Explanation
Maximum	Pixels in the image with a value greater than the specified constant are replaced by the value.
Or	Performs a bitwise OR operation on a source pixel and an argument.
And	Performs a bitwise AND operation on a source pixel and an argument.
Xor	Performs a bitwise XOR operation on a source pixel and an argument.
Average	Applies the function *Result = (img1+img2)/2* to each pixel in the image or selection.
Difference	Applies the function *Result = |img1-img2|* to each pixel in the image or selection.

The chosen operation is performed, and the result is multiplied by the Scale factor. The Offset value is then added. The final result is applied to the color channel selected from the Result menu.





1st operand: Green

Operation: Xor

2nd operand: Red

Scale: 2.0

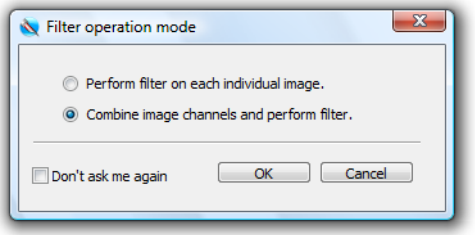
Offset: 0.0

Result: Green

To apply the Image Math filter to multiple images

1 Select the images.

2 Apply the filter by choosing Image > Filter > Scientific > Image Math. The Filter operation mode dialog box opens.



3 Choose an option in the dialog box depending on your needs.

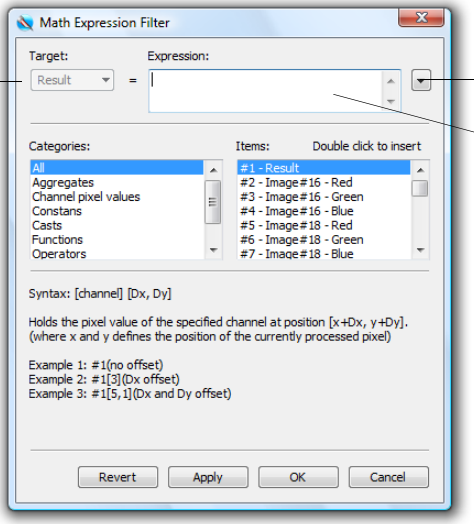
4 Press OK.

Expression

The Math Expression filter can be used to perform mathematical equations on a color channel.

Channel on which equation will be performed

Example of syntax and use



Menu icon

Expression field

To use the Math Expression filter

1 Select the color channel from the Target menu. The available color channels depend on the image mode; i.e., CMYK, RGB, etc.

2 Define the mathematical equation using the Categories scroll box and their related items.

3 Double-click on an item to make it appear in the Expression field.

Note: The lower portion of the dialog box indicates the correct syntax and shows an example of the expression.

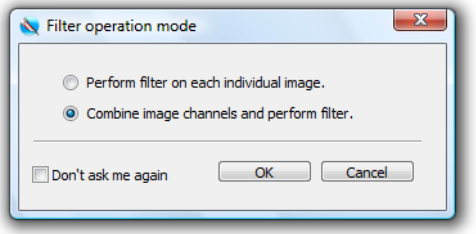
4 Click Apply to see the effect. Clicking Revert stops the effect on the color channel.

5 Click OK to permanently apply the effect to the channel.

To apply the Math Expression filter to multiple images

1 Select the images.

2 Apply the filter by choosing Image > Filter > Scientific > Expression. The Filter operation mode dialog box opens.

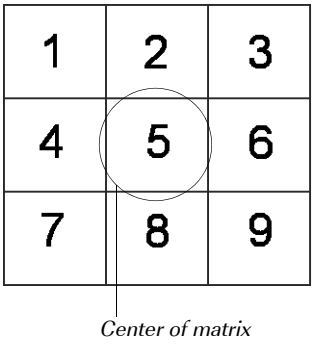


3 Choose an option in the dialog box depending on your needs.

4 Press OK.

Convolve

The Convolve filter can be used to apply a spatial convolution on an image or selected image area. The convolution is performed according to a kernel, which is basically a matrix whose size you define in terms of width and height in pixels. Note that only odd numbers can be used to define the size of the kernel. The maximum is 11 pixels and the minimum, 3 pixels.



The Convolve filter is applied to every pixel in an image. The center of the matrix matches the source pixel and the other matrix components relate to the surrounding pixels.

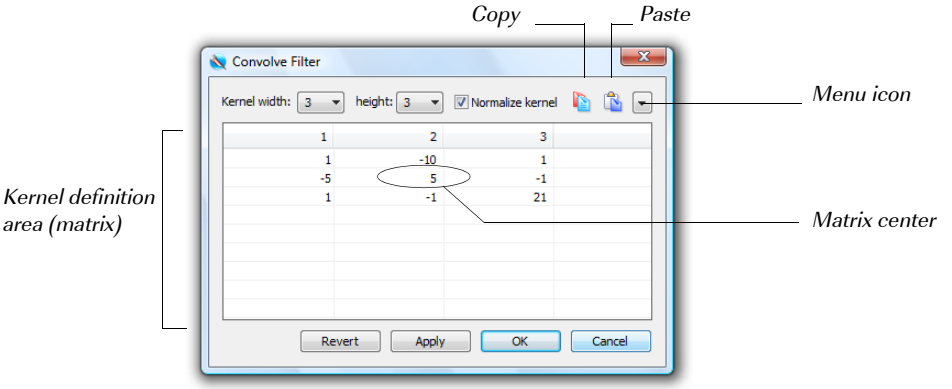
The resulting pixel is calculated by multiplying the value of each source pixel by the corresponding value in the kernel and then adding the results.

To preserve image brightness

1 Select the Normalize kernel checkbox. This option causes each matrix value to be divided by the sum of the values.

2 Click Apply to see the filter effect on the image. If the convolution is not appropriate, click Revert and try another one.

3 Click OK to apply the filter and close the dialog box.



To save a kernel

1 Define the kernel.

2 Click on the menu icon and select Save kernel as. The Save kernel as dialog box opens.

3 Enter a name for the kernel and click OK.

Note: Saved kernels appear at the bottom of the menu when you click the menu icon.

To delete a kernel

1 Click on the menu icon and select Delete kernel. The Delete kernel preset dialog box opens.

2 Select the kernel to be deleted and then click OK.

To load a kernel

1 Click on the menu icon.

2 Select the kernel that you want to apply.

To paste a kernel

Before pasting a kernel, ensure there is a space between the values.

1 Copy the kernel from its source (e.g., Notepad).

2 Click the Paste icon.



Original image



Image with Convolve filter applied

Accessing image data

Canvas contains important features that allow you to analyze an image's pixel values and measure various image properties: Image Data Viewer tool, View Data command, and Image Measurement command.

Image Data Viewer tool

You can quickly view raw data within an image object using either the Image Data Viewer tool or View Data command. These tools are designed so you can quickly view image data "on the fly". In addition, you can copy this data to a .txt file or spreadsheet application for further analysis.



- **To use the Image Data Viewer tool:** Select the tool from the Toolbox and drag it across the image. The Image Data Viewer dialog box opens showing the individual pixel values for the selected area.

• **To use the View Data command:** Make an irregular-shaped selection using either the Marquee tools or Lasso tools. Click the View Data button in the Properties bar to open the Image Data Viewer dialog box.

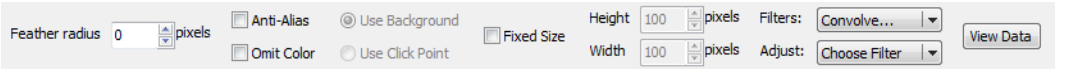
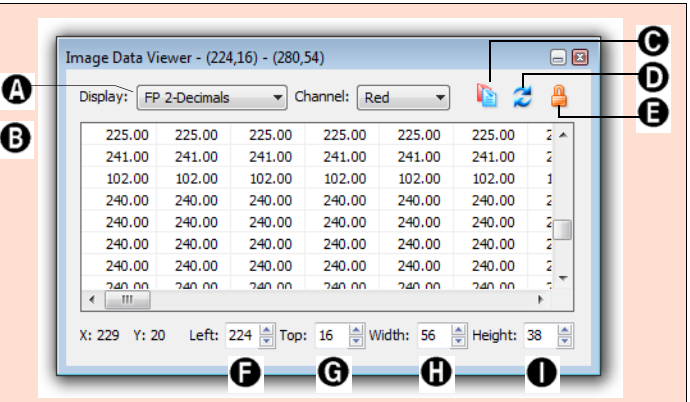


Image Data Viewer dialog box



A Display. Select either Hexidecimal, Signed decimal, Unsigned decimal, FP 2-Decimal, FP 4-Decimals, or FP 8-Decimals.

Hexidecimal. Refers to the base-16 number system, which consists of 16 unique symbols: the numbers 0 to 9 and the letters A to F.

Signed decimal. Integer value which can have both positive and negative values.

Unsigned decimal. Integer value with value of zero or greater (no negative numbers).

FP 2-Decimal. Refers to a floating point value with 2 digits following the decimal.

FP 4-Decimals. Refers to a floating point value with 4 digits following the decimal.

FP 8-Decimals. Refers to a floating point value with 8 digits following the decimal.

B Channel. Select a color channel from the menu. The available channels depend on the image mode; i.e., RGB, grayscale, CMYK, etc.

C Copy Data To Clipboard. Click this icon to export the data to a spreadsheet or other file for analysis.

D Refresh Data. Click this icon to update the data.

E Lock. Click this icon to lock the dialog box and save the data view. Once locked, you can take the Image Data Viewer tool and select another data sample. Another dialog box will open so you can compare data.

F Left. Indicates the position of the first pixel in relation to the left side; i.e., 43 would be the 43rd pixel from the left.

G Top. Indicates the position of the first pixel in relation to the top; i.e., 29 would be the 29th pixel from the top.

H Width. Indicates the width of the selected area in pixels.

I Height. Indicates the height of the selected area in pixels.

Note: An alternative method to using the Image Data Viewer tool is to export the image as a .txt file using the RAW file export filter (see "Exporting RAW files," page 38.2). However, although effective, the RAW export method may be time-consuming if analyzing several images and data is required immediately.

Image Measurement

The Image Measurement dialog box contains information about the selected image or selected region(s) within an image.

- **To view an image's image measurement at any time:** Choose Image > Image Measurement.

Image Measurement

A This list contains the various image properties that are being measured. You can customize the data by clicking the Configure button and selecting the properties to be measured.

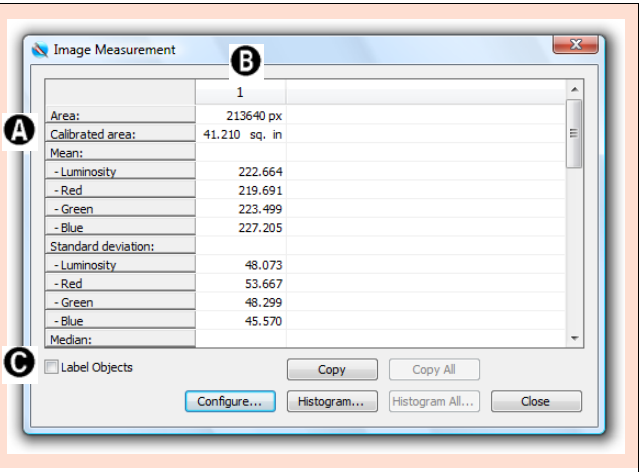
B Each selected region within an image has its own column of data.

C If you want to label the image or selected regions, select the Label Objects checkbox. The label corresponds to the column number.

Configure. Click this button to open the Image Measurement Properties dialog box. Select the properties that you want to appear in the list.

Copy. Select an column of data and click this button to copy the image measurements so you can paste them in a spreadsheet or text editing application.

Copy All. Click this button to copy all columns of data for multiple selections. You can paste them in a spreadsheet or text editing application.



Histogram. Click this button to launch the Histogram dialog box for a single column of data.

Histogram All. Click this button to launch the Histogram dialog box for multiple selections.

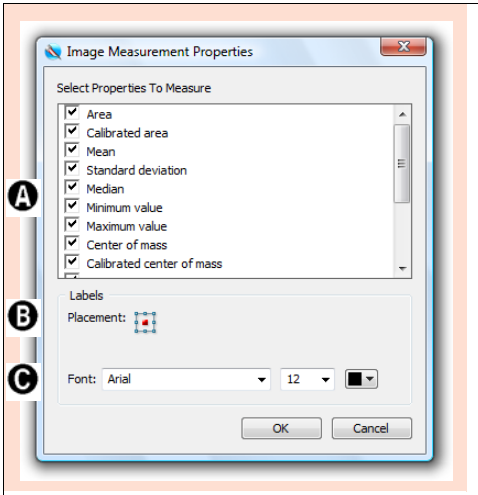


Image Measurement Properties

A Select or deselect properties to customize your list of image properties to be measured.

Area. Total number of pixels in image.

Calibrated area. The area of an image measured in current Canvas units.

Mean. Measures the average pixel intensity.

Standard deviation. A numeric value that describes how widely intensity values vary.

Median. Middle value in the range of values; i.e.; number of pixels with intensity below the median is equal to the number of pixels with intensity that is above the median.

Center of mass. The x/y coordinates of the image's center.

Perimeter. Measures the perimeter of the image in pixels.

Calibrated perimeter. The perimeter of an image measured in current Canvas units.

Compactness. A numeric measurement of an object's shape. It is defined with the following equation:

$$(perimeter^2)/(area)$$

Shape factor. The measurement of an object's circularity. It is defined with the following equation:

$$4 \times \pi \times (area)/(perimeter^2)$$

Feret diameter. Indicates an object's theoretical diameter if it had a circular shape.

Calibrated feret diameter. Measured in the current Canvas units, this indicates an object's theoretical diameter if it had a circular shape.

B Use the label controls to determine label placement. The default placement is the center of the image or selection.

C Use the font controls to customize the appearance of the labels. You can change font, size, and color.

CANVAS WITH GIS+

CHAPTER 39

GIS+



Canvas GIS+ has various GIS-based tools and commands that allow you to work with various GIS formats, define a map projection, and perform advanced property operations.

What is GIS?

GIS, the abbreviation for Geographic Information System, can be used in a variety of fields such as engineering, resource management, public utility management, business, town planning, etc.

GIS menu

The GIS+ has a GIS menu that contains the following options:

This command	does this
GIS Document Settings	Opens the GIS manager in the Configuration Center
GIS Positioning	Opens the GIS palette
Create Graticule	Opens the Graticule Settings dialog box
Choose Reference Point	Allows you to define a reference point within the document
Export	Opens the Save dialog box in which you can export the file to various GIS formats
Import	Opens the Place dialog box; this command is identical to the File > Place command, except you can only access the supported GIS formats
Tag selection as	Allows you to modify the SHAPE_TAG property of a selected map object (see "Tagging selections" on page 39.40).
Select by property	Opens the Select by Property dialog box
Label by property	Opens the Label by Property dialog box
Statistics by property	Opens the Statistics by Property dialog box
Object Properties Table View	Opens the Object Properties Table View palette
Visualize data	Opens the Visualize data dialog box

GIS manager

Choose GIS > GIS Document Settings to view the GIS manager, which you use to select or define geo-referencing information for a document. You can also access the GIS manager by creating a new illustration document and selecting the GIS document checkbox.

In addition, you can use the GIS manager to re-project the projection of a document that is currently open. Choose GIS > GIS Document Settings to open the GIS manager. Make any adjustments using the Projected Coordinates System options (see “GIS manager” on page 39.2).

GIS manager

If you are currently working in a GIS document, the scale and projection settings will be indicated. If not, you can select the checkbox to Enable GIS.

When you select to Enable GIS checkbox, you have access to the Projected Coordinates System options.

A Projection. Click Select to open the Select Map Projection dialog box, which contains predefined projections. Select one from the list. The related property and parameter values are displayed on the right. Click the Edit button to open the Map Projection dialog box. Select a projection from the list. Further customize the projection by entering the necessary values in the Parameters section.

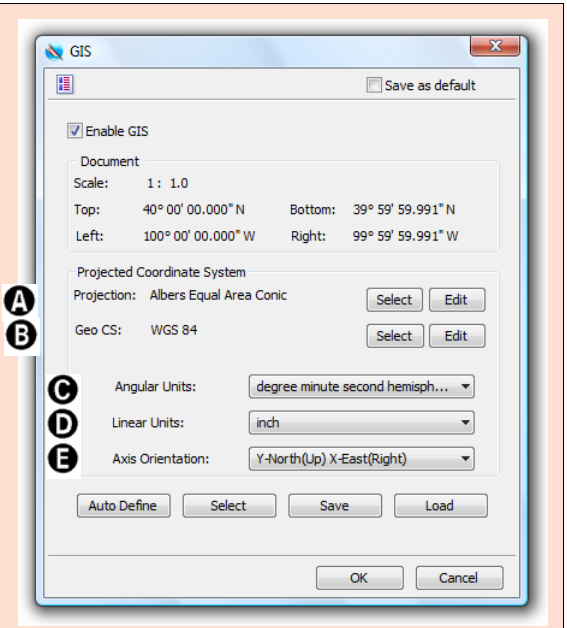
B Geo CS. You can select the earth model. The default earth model is WGS 1984. Click Select to open the Select Geographic Coordinate System dialog box. Select one from the list. The related property and parameter values are displayed on the right. Click Edit to open the Geographic Coordinate System dialog box (see “Edit Geographic Coordinate System dialog box” on page 39.3).

C Angular Units. Select the units that you want to use in the projection.

D Linear Units. This unit of measure corresponds to your document unit in a GIS-enabled document.

E Axis Orientation. Select either North East, North West, South East, or South West as the Canvas 0,0 origin.

Click Auto Define to open the Auto Define Document Coordinate System dialog box (see “Auto Define Document Coordinate System” on page 39.3).

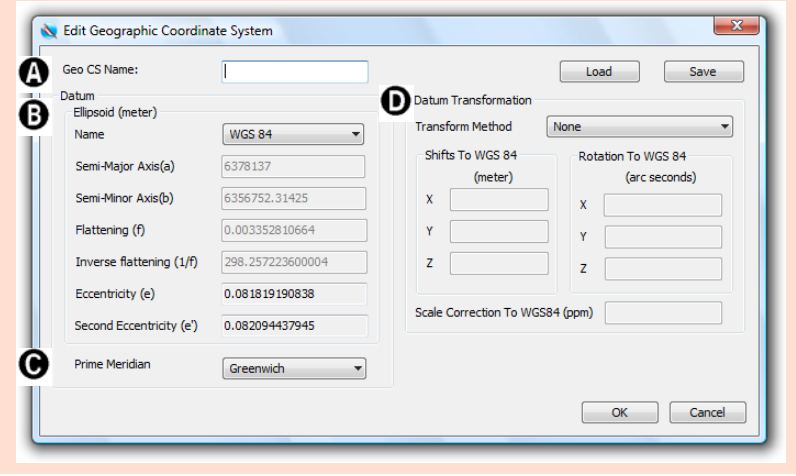


Click Select to open the Projected Coordinate Reference Systems dialog box. Choose one from the list and click OK.

Click Save to save the current projection in a PRJ file.

Click Load to open a saved projection in PRJ or TXT format.

Edit Geographic Coordinate System dialog box



Use this dialog box to define a geographic coordinate system for the projection.

A Geo CS name. Enter a name in this field.

Click Load to open a saved Geographic Coordinate System in PRJ format.

Click Save to save the current Geographic Coordinate System in a PRJ file.

B Ellipsoid. Select a defined ellipsoid from the menu. If you select Custom, you have to define the other elements in this section.

Semi-Major Axis. Half the distance across an ellipse along the longest of the principal axes.

Semi-Minor Axis. Half the distance across an ellipse along the short principal axis.

Flattening. The ratio of the length of half the semi-minor axis of the ellipse to half the semi-major axis of the ellipse, subtracted from 1.

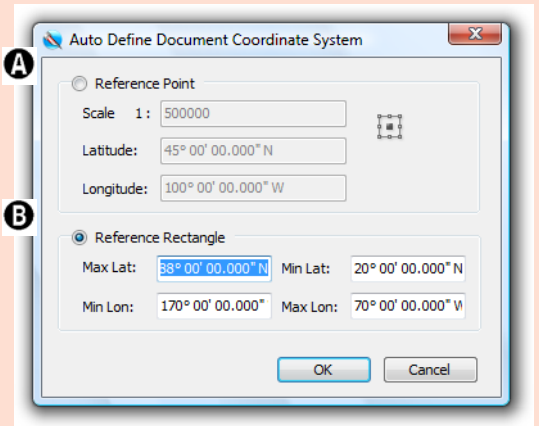
Inverse flattening. Calculated as the length of the semi-major axis over the difference in lengths of the semi-major and semi-minor axes.

C Prime Meridian. Select an option from the menu. The prime meridian forms the origin for the longitude part of the geographic coordinates and divides the eastern and western hemispheres.

D Datum Transformation. Select an option from the Transform method menu. If you select None, no transformation is performed. If you select, Geocentric translations, you have to define the Shifts to WGS 84. If you select Coordinate Frame rotation or Position Vector 7, you have to define the sections for Shifts to WGS 84, Rotation to WGS 84, and Scale Correction to WGS84.

Click OK.

Auto Define Document Coordinate System



Use this dialog box to set your drawing scale, establish a reference point, and define a reference rectangle.

Based on the selected point or defined bounding box, Canvas sets up the projected coordinate system for the file.

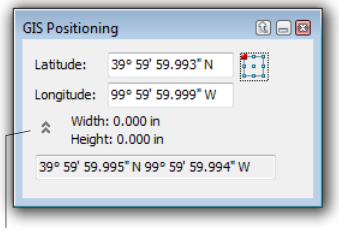
A Reference Point. Allows you to define a scale and reference point within the document

Scale. Enter a scale amount in this field, if necessary.

Latitude/Longitude. Select an anchor point and then enter the coordinates for the reference point.

B Reference Rectangle. Enter coordinates to establish a bounding rectangle for the document. The rectangle is defined by the minimum and maximum coordinates in each of the two directions.

GIS palette



Click to expand the palette

Perhaps you work in the oil industry and need to accurately plot the coordinates of existing wells on a map. You could then take this information and combine it with Canvas' export capabilities to quickly create a presentation or publish it online in either PDF or HTML.

- **To open the GIS palette:** Choose GIS > GIS Positioning.

You can use the GIS palette to strategically move or position objects according to their latitude and longitude coordinates.

The GIS Positioning palette also displays Length and Forward Azimuth when measuring between two points.

When expanded, the percentage of error is indicated at the bottom of the palette. The distortion percentage is calculated by comparing the document's reference point (document center) to the world.

- **To measure distance in world coordinates:** Create a line between the two points to be measured. Select the line and open the GIS Positioning palette. The Length and Forward Azimuth are indicated.

To position objects with the GIS palette

Before being able to strategically place objects, you must first configure the GIS settings (see "GIS manager" on page 39.2).

1 Select the object to be positioned. The object's current coordinates appear in the Latitude and Longitude fields at the top of the palette.

Note: These coordinates are based on the object's selected handle. By default, the center handle is the reference point when the object is first selected (see "To manually position center reference point" on page 39.5).

2 Select a handle in the bounding box icon and then enter the new latitude and longitude values. The object moves to the defined coordinates.

Positioning replicates

If you have to create several replicates of an object and then place each of them according to their latitude and longitude, Canvas' Replicate and Position abilities will be of benefit to you (see "Replicating & positioning," page 16.19).

The GIS component of the Replicate and Position dialog box is enabled once you have configured the GIS settings with the GIS manager (see "GIS manager," page 39.2).

To use the Replicate and Position dialog box

1 Select the object to be replicated.

2 Choose Object > Replicate and Position.

3 Click the Angular radio button.

4 Enter the latitude and longitude coordinates for each replicate. You can load or paste coordinates.

5 Click OK to create and position the replicates.



Selected handle indicated with a crosshair.

To manually position center reference point

1 Select the object and click once more. The object's handles appear.

2 Notice that the center reference point contains a crosshair.

3 Move the cursor over the center reference point. The cursor changes to a crosshair.

4 Click the crosshair on the selected handle and move the handle to another position. The object's latitude and longitude update after you release the cursor.

Choosing a reference point

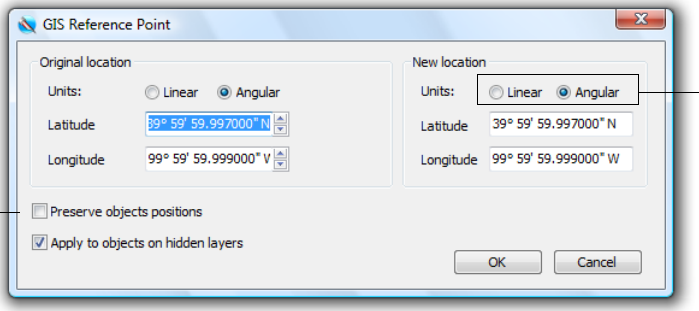
This command allows you to set the origin of your document. You also have the option of preserving the objects' coordinates, which can be viewed as a "move paper sheet" command.

To define a reference point

1 Select Choose Reference Point. A prompt appears when you move the cursor into the drawing area.

2 Click the cursor to define the new origin. The GIS Reference Point dialog box opens. In the Original Location section, the original origin is indicated. The new origin is noted in the New location section. You can view the coordinates in either Linear or Angular units.

Note: You can select a handle in the bounding box icon. By default, the center anchor point is selected for the reference point. You can also enter values in the Easting/Northing or Latitude/Longitude fields.



Select this checkbox to preserve the objects' coordinates

Select Linear to view Easting and Northing coordinates. The Angular option provides Latitude Longitude coordinates.

Creating a graticule

Use the Graticule settings dialog box to create a grid of lines that display meridians of longitude and parallels of latitude.

Graticule settings dialog box

A Select either Use Document Bounds, Use Selection Bounds, or Custom from the menu. If no objects are selected, the Use Selection Bounds option is disabled.

For Custom, you must enter values in the Start and End sections for both Latitude and Longitude.

A Unit. Select a unit from the menu. Document unit changes to this unit. You can choose angular units or linear units.

B Precision. You can choose from no decimals to six decimals, or even use fractions.

C Longitude. If a linear unit is selected, this section is labeled "Easting".

Start/End Enter the values that the meridians should span.

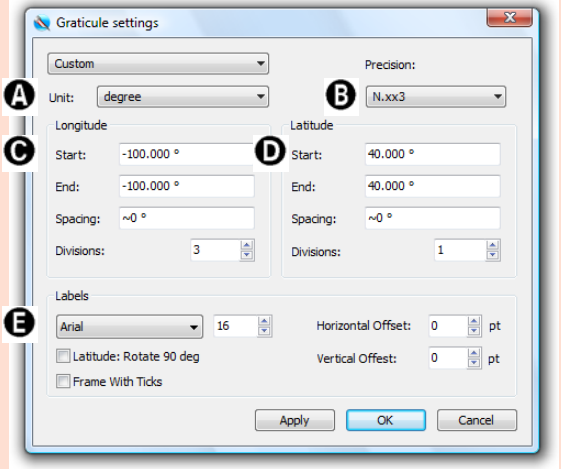
Spacing / Divisions These two values influence each other. The larger number of divisions, the smaller the spacing becomes. Conversely, if you enter a large value for the spacing, the number of divisions decreases.

D Latitude. If a linear unit is selected, this section is labeled "Northing".

Start/End

Enter the values that the parallels should span.

Spacing / Divisions These two values influence each other. The larger number of divisions, the smaller the spacing becomes. Conversely, if you enter a large value for the spacing, the number of divisions decreases.



E Labels. You can define the settings for the labels. Select the font type and size.

Latitude Rotate 90 deg This option rotates the labels for the parallels (latitude) at a 90 degree angle.

Frame With Ticks This option produces short lines indicating where selected meridians and parallels intersect. If selected, a full grid is not created, only tick marks.

Horizontal Offset This setting affects the placement of the labels for the meridians (longitude).

Vertical Offset This setting affects the placement of the labels for the parallels (latitude).

Warping images

Canvas features image effects that you can use to warp images.

Note: The Image Warp commands are not available for various image modes: Indexed and FP-32. Change the image mode to RGB to access the Image Warp commands.

Coordinates

For GIS Coordinates option.



With the Coordinates command, you can place control points within a selected image and warp it according to those points.

- **To make the Coordinates controls appear in the Properties bar:**

Select the image and then choose Image > Image Warp > Coordinates.

Coordinates controls

A click inside the image will add a control point; however, the point can be dragged outside the image. Press Delete key to remove selected point(s).



A Coordinates. Indicates the position of the defined control point.

B Coordinate system. Select either Document or GIS. Document uses an X/Y control point system and GIS refers to latitude and longitude. To use the GIS option, you must have the GIS+.

C Shuffle arrows. Click these arrows to select defined control points. Once a control point is selected, you can move it to another location.

D Fixed Frame. Select this checkbox to maintain the form of the bounding box. If this option is deselected, the bounding box is warped.

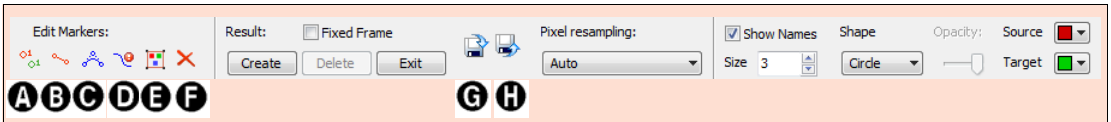
E Create. Click this button to perform the warp. At least three control points must be defined to create a warp.

PointtoPoint effect

With the PointtoPoint command, you can georegister an image or drawing to the geographic location of a "known good" reference image. The image or drawing used as a reference is called the target. The image that you are adjusting to the target is called the source.

Note: If both selected objects are images, the first selected image is the source and the second image is the target. If you select one image and one vector object, the image is the source and the vector object is the target.

- **To make the PointtoPoint effect controls appear in the Properties bar:** Select two objects, one of which must be an image, and then choose Image > Image Warp > PointtoPoint.



PointtoPoint effect controls

A Control points. Click to add control points to both the source and target. Every source point must have a corresponding target point. At least 3 points must be defined to enable the Create button.

Control points are saved in relative position to object, so if you drag or scale an object, the points will be scaled correspondingly. Save the document after change the control points configuration. When exiting the session, current point configuration is automatically saved.

B Segment points. Click to add segments to both the source and target. Every source segment must have a corresponding target segment.

C Curve points. Click to add curve segments to both the source and target. Every source curve must have a corresponding target curve.

D End curve points. Click to complete the curve.

E Select all points. Click to select all control points.

F Delete has two functions: delete current curve, if you are creating a curve, or delete selection, if any.

G Save. Click this button to save the control points within the source and target.

H Reload. Click this button to reload the saved points.

Pixel resampling. Select a resampling method.

- Nearest neighbor. Will remove some pixel information from your target image; however, if used, this setting will be the fastest.
- Bilinear. Will use a bilinear interpolation algorithm during downsampling.
- Biquadratic. Estimates the color at a pixel in the destination image by an average of 9 pixels surrounding the closest corresponding pixel in the source image.
- Bicubic. Estimates the color at a pixel in the destination image by an average of 16 pixels surrounding the closest corresponding pixel in the source image.
- Polygonal. Every source pixel is mapped to a polygon in the target.

Auto. Canvas selects the most appropriate method for resampling.

Show Names. Select this checkbox if you want to see labels. Use the Size menu to adjust the size of control points.

Shape. Select either Circle or Square for the control point shape.

Opacity. Adjust the transparency of the created object.

Source & Target colors. Select a color from the palettes to distinguish the source and target. By default, the source is red and the target is green.

Fixed Frame. Select this checkbox to maintain the form of the bounding box. If this option is deselected, the bounding box is warped.

Create. Click this button to perform the effect.

Delete. Click this button to delete the created object.

Exit. Click this button to leave the warp effect before or after clicking Create.

GIS data formats

Canvas GIS+ supports the import export of the most popular GIS data formats, including but not limited to TIGER files, Shapefiles, USGS DLG, MrSID, and TIFF.

The following table lists the file formats that can be opened in or exported from GIS+.

Extension	In	Out	Description
TIFF	✓	✓	GeoTIFF TIFF/World File image — A world file carries pixel scale information and the location, in real world coordinates, of the (typically) north-west pixel (.TFW extension); on export, Canvas generates a TFW file

Extension	In	Out	Description
SHP	✓	✓	Shapefile — on export, Canvas creates both SHX and DBF files.
DLG (.do, .opt)	✓		USGS Digital Line Graphs
E00	✓		ARC/INFO interchange file format
RT1	✓		Tiger (Topologically Integrated Geographic Encoding and Referencing system)
SDTS	✓		USGS Spatial Data Transfer Standard
MIF	✓		MapInfo Data Interchange Format
S57	✓		A standard defined by the International Hydrographic Organization (IHO) for the exchange of digital hydrographic data.
ECW	✓	✓	Enhanced Compressed Wavelet images (export is Windows only)
SID	✓		MrSID image format (Windows only)
GML	✓		Geography Markup Language
Geo JPEG	✓	✓	JPEG with projection information; on export Canvas creates a JGW file and PRJ file
Geo BMP	✓	✓	BMP with projection information; on export Canvas creates a world file and PRJ file
Geo PNG	✓	✓	PNG with projection information; on export Canvas creates a world file and PRJ file
Geo GIF	✓	✓	GIF with projection information; on export Canvas creates a world file and PRJ file
GIS Text	✓	✓	Opening/Exporting TXT file with GIS data
GPS Garmin	✓		Open TXT file containing GPS Garmin data

Opening or placing geo-referenced files

The starting point for GIS users is the successful importation of a geo-referenced file. As noted in the previous table, Canvas can open

a multitude of GIS file formats, including vector- and raster-based formats. This section provides an overview of each file format.

To open or place Shapefiles

. Shapefiles consist of the following three separate files entities:

- the main file, a Shape file (.SHP), which contains geographic objects,
- an index file (.SHX), which contains an I'th record. The I'th record in the .SHX file stores the offset and content length for the I'th record in the main file (.SHP).
- a dBASE table (.DBF), which contains attribute information about the geographic objects found in the Shapefile.

Whether you choose Open or Place, the same dialog boxes will appear. You are not restricted to opening one Shapefile at a time. You can open or place multiple Shapefiles by Shift-clicking or Ctrl-clicking the required files.

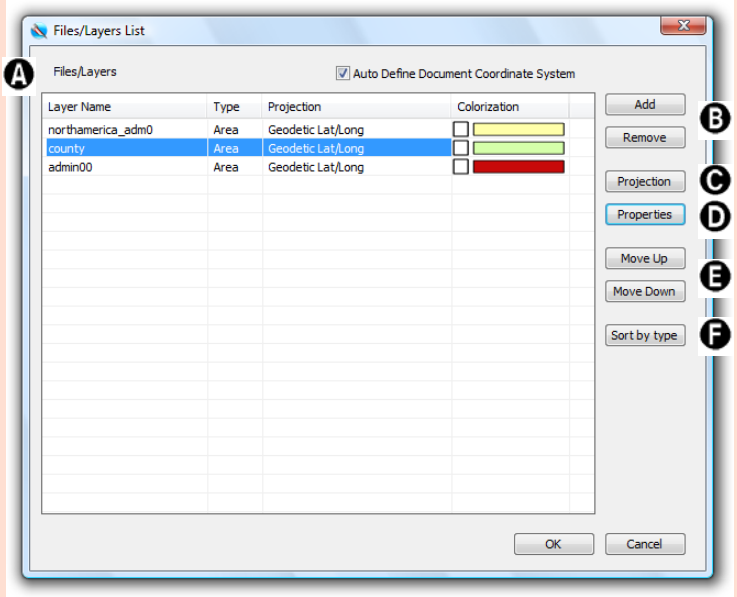
1 Choose File > Open or File > Place.

2 Select .SHP as the file type.

3 Navigate to the .SHP file(s) in the Open or Place dialog box and click Open or Place. The Files/Layers List dialog box appears.

Files/Layers List dialog box

This dialog box appears whether you are opening one or multiple files.



A Files/Layers. This list indicates all the shapefiles that you are opening or placing.

B Add/Remove. Click the Add button to open or place another shapefile. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

D Properties. Select a file in the list and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

E Move Up/ Move Down. Use these buttons to shuffle the files within the list.

F Sort by type. Click this button to arrange the files according to type; i.e., area, line, or point.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s).

File Coordinate System dialog box

A Unknown Open. As X/Y. If the projection information is unknown, choose this option and then select the Linear Units from the menu.

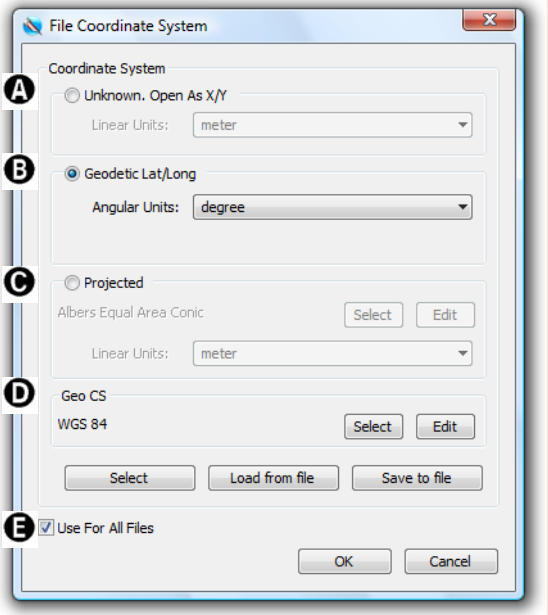
B Geodetic Lat/Long. Select this option if you wish to select the angular units. If you select the Auto Define Document Projection checkbox, Canvas sets up the projected coordinate system for the file. If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

C Projected. Click Select to open the Select Map Projection dialog box, which contains predefined projections. Select one from the list. The related property and parameter values are displayed on the right. Click OK to return to the File Coordinate System dialog box. Click the Edit button to open the Map Projection dialog box. Select a projection from the list. Further customize the projection by entering the necessary values in the Parameters section.

D Geographic Coordinate System. You can select the earth model. The default earth model is WGS 1984. Click Select to open the Select Geographic Coordinate System dialog box. Select one from the list. The related property and parameter values are displayed on the right. Click OK to return to the File Coordinate System dialog box. Click Edit to open the Edit Geographic Coordinate System dialog box.

Click Select to open the Projected Coordinate Reference Systems dialog box. Choose one from the list and click OK.

Click Load from file to obtain the projection information from a PRJ or TXT file.

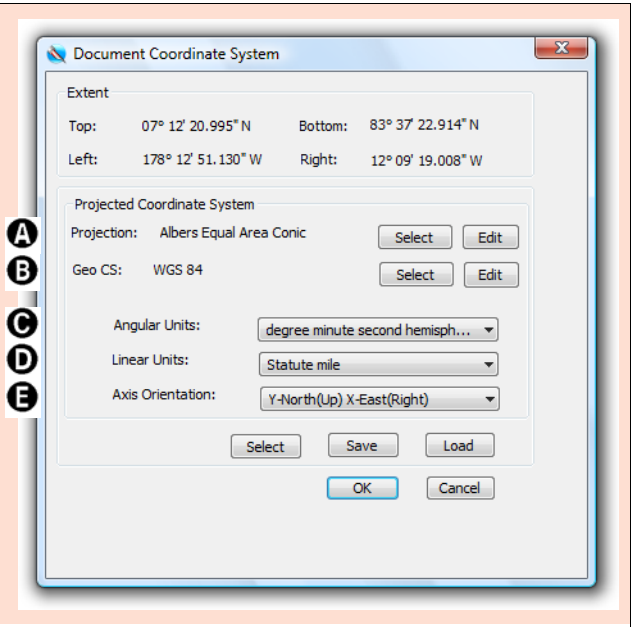


Click Save to file to save the current projection in a PRJ file.

E Use For All Files. Select this checkbox to apply this projection to all files being opened or placed.

Click OK to load the file(s).

Document Coordinate System dialog box



A Projection. Click Select to open the Select Map Projection dialog box, which contains predefined projections. Select one from the list. The related property and parameter values are displayed on the right. Click the Edit button to open the Map Projection dialog box. Select a projection from the list. Further customize the projection by entering the necessary values in the Parameters section.

B Geo CS. You can select the earth model. The default earth model is WGS 1984. Click Select to open the Select Geographic Coordinate System dialog box. Select one from the list. The related property and parameter values are displayed on the right. Click Edit to open the Geographic Coordinate System dialog box (see "Edit Geographic Coordinate System dialog box" on page 39.3).

C Angular Units. Select the units that you want to use in the projection.

D Linear Units. This unit of measure corresponds to your document unit in a GIS-enabled document.

E Axis Orientation. Select either North East, North West, South East, or South West as the Canvas 0,0 origin.

Click Auto Define to open the Auto Define Document Coordinate System dialog box (see "Auto Define Document Coordinate System" on page 39.3).

Click Select to open the Projected Coordinate Reference Systems dialog box. Choose one from the list and click OK.

Click Save to save the current projection in a PRJ file.

Click Load to open a saved projection in PRJ or TXT format.

Layer Properties dialog box

If you are opening more than one file, select the file in the Files/Layers List dialog box and then click the Properties button.

A Layer Type. This reflects the type of object in the Shapefile. It can either be Line, Area, or Point. The following attributes will change according to object type.

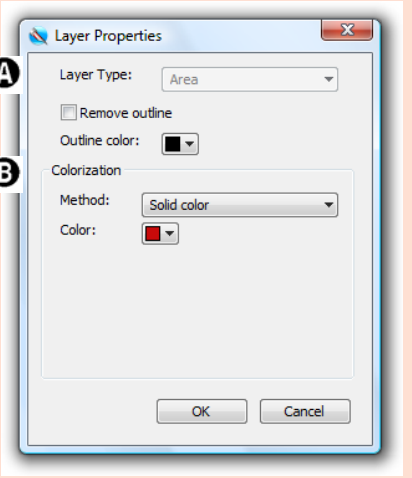
For Lines, you can select the pen stroke width.

For Area, you can select the outline color or eliminate an outline altogether.

For Point, you can choose the point size and shape. To change the shape, open the Draw As menu and select an item. If you select Symbol Object, the Select Library Item dialog box opens.

B Colorization. In the Method menu you will have the option to select either No Fill, Solid Color, Color Range, or Color Array.

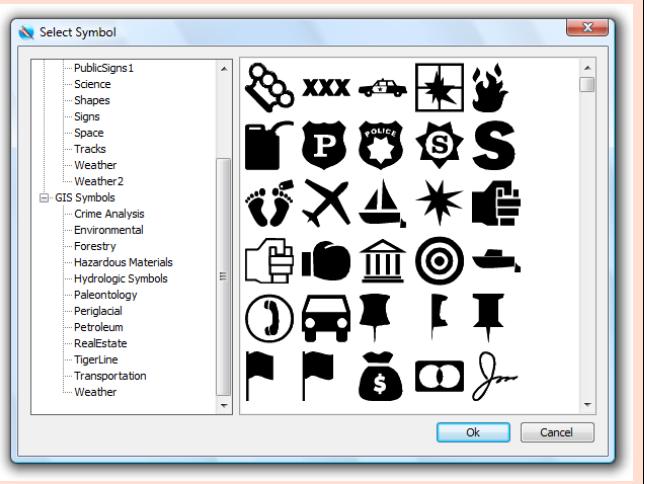
Click OK after defining the Layer Properties and return to the File Coordinate System dialog box.



Select Library Item dialog box

The Symbol Object option lets you select a library item from a library object set (.MCR). On the right, the library object set "Transportation.MCR" is selected in the left pane. The right pane shows the available library item. Select a library item and click OK. The Point is now replaced with the library item throughout the document.

These library items can also be seen in the Symbol Library palette after a file is loaded (see "Dynamic objects & clipart" on page 21.1 and "To load a library object set" on page 21.5).



To open, place, or import a GeoTIFF

GeoTIFF is a format in which an image that originates from satellite imaging systems, scanned aerial photography, scanned maps, digital elevation models, or as a result of geographic analyses is related to a known model space or map projection.

Canvas will open, place, or import TIFF files that contain GIS data. Whether you choose Open, Place, or Import, the same dialog box appears.

1 Select TIFF as the file type.

2 Navigate to the file in the Open, Place, or Import dialog box and click Open, Place, or Import. A warning message appears indicating that the file contains GIS data.

3 Click OK. The GeoTIFF Import Options dialog box appears.

GeoTIFF Import Options dialog box

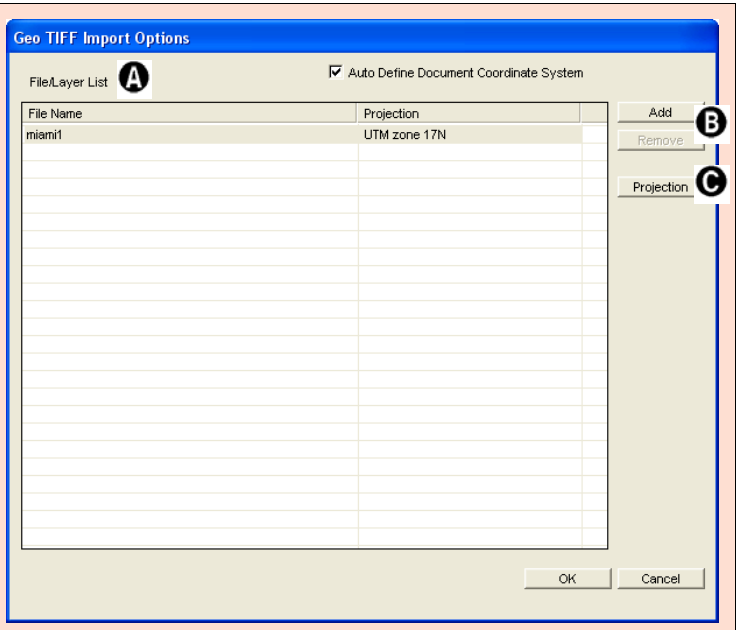
This dialog box appears whether you are opening one or multiple files.

A Files/Layers. This list indicates all the files that you are opening, importing, or placing.

B Add/Remove. Click the Add button to open or place another shapefile. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).



Click OK to load the file(s).

To open or place DAT ASCII files

Canvas will open or place DAT ASCII files. These files contain geographic coordinates that form polygons when opened.

These files are represented in the following format:

ID	LON1	LAT1
	LON2	LAT2

	...	...
	LONx	LATx
END		
ID	LON1	LAT1
	LON2	LAT2
	...	...
	LONx	LATx
END		
END		

ID is a unique polygon identification number.

LON/LAT is a longitude/latitude coordinate internal to the polygon.

LONn/LATx is a sequence of longitude/latitude coordinate pairs defining the polygon vertices, with matching first and last vertices.

An END statement indicates the termination of each polygon, and a final END statement indicates the termination of the polygon file. Islands or exclusions within a polygon are flagged with an ID number of -99999.

Canvas has the capability of either opening or placing DAT files. Whether you choose Open or Place, you will be presented with the same dialog boxes.

1 Select .dat as the file type.

2 Navigate to the .dat file in the Open or Place dialog box and click Open or Place. The Layer Properties dialog box opens (see “Layer Properties dialog box,” page 39.14).

3 Click OK to begin loading the file. The File Coordinate System dialog box appears (see “File Coordinate System dialog box,” page 39.12).

4 Make any necessary changes for the coordinate system or load projection information and click OK.

To open or place a TIGER file

TIGER®, an abbreviation of Topologically Integrated Geographic Encoding and Referencing, refers to the database designed at the U.S. Census Bureau.

TIGER files are a digital database that contain various geographic elements for the United States; e.g., zip code areas, roads, railroads, rivers, etc. With GIS+ and these TIGER files, it is possible to create a not only a local map of your area but also a map of the entire United States.

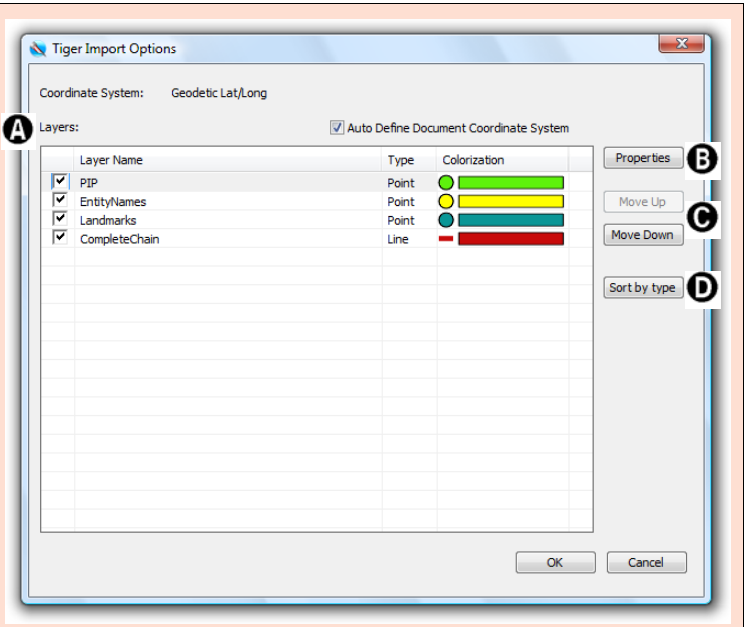
1 Choose File > Open or Place or GIS > Import.

2 Select RT1 as the file type.

3 Navigate to the RT1 file and click Open or Place. When opening or placing a Tiger® file, the Tiger Import Options dialog box appears.

Tiger Import Options dialog box

This dialog box appears whether you are opening one or multiple files.



A Layers. This list indicates all the files that you are opening or placing. The map objects that are contained in the file are indicated to the right (Point, Line, Area). To stop from opening a file in the list, deselect its checkbox. The file remains in the list but is not opened.

B Properties. Select a file in the list and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

C Move Up/ Move Down. Use these buttons to shuffle the files within the list.

D Sort by type. Click this button to arrange the files according to map object type; i.e., area, line, or point.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s). Each file has its own layer.

To open or place an SDTS file

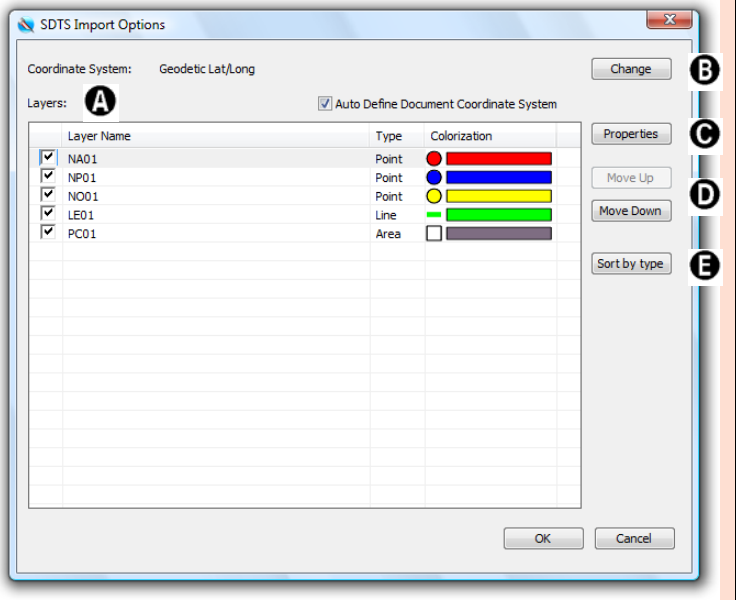
SDTS, the abbreviation of Spatial Data Transfer Standard, consists of several ISO8211 encoded files with the .DDF extension, of which the catalog file is key (xxxxCATD.DDF). Normally, these files have part of the file name in common; e.g., TR01xxxx.DDF, with the catalog file being TR01CATD.DDF. All files must be in the same folder when opening the catalog file.

1 Choose File > Open or Place.

2 Select CATD.DDF - STDS Transfer as file type.

3 Navigate to the catalog file and click Open or Place. The SDTS Import Options dialog box opens.

SDTS Import Options dialog box



A Layers. This list indicates all the layers in the file. The map objects that are contained in the layer are indicated to the right (Point, Line, Area). To stop from opening a layer in the list, deselect its checkbox. The file remains in the list but is not opened.

B Change. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

C Properties. Select a file in the list and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

D Move Up/ Move Down. Use these buttons to shuffle the files within the list.

E Sort by type. Click this button to arrange the files according to type; i.e., area, line, or point.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s). Each file has its own layer.

To open or place a SID file

MrSID®, an acronym for Multiresolution Seamless Image Database, reduces the size of large, high resolution images while still

maintaining the image's quality and integrity. These files consist of an image file (*.SID) and a world file (*.SDW), which contains the geospatial information of the image. Both files must be in the same folder when opening the MrSID file.

1 Choose File > Open or Place.

2 Navigate to the .SID file and click Open or Place. The MrSID Import Options dialog box appears.

MrSID Import Options dialog box

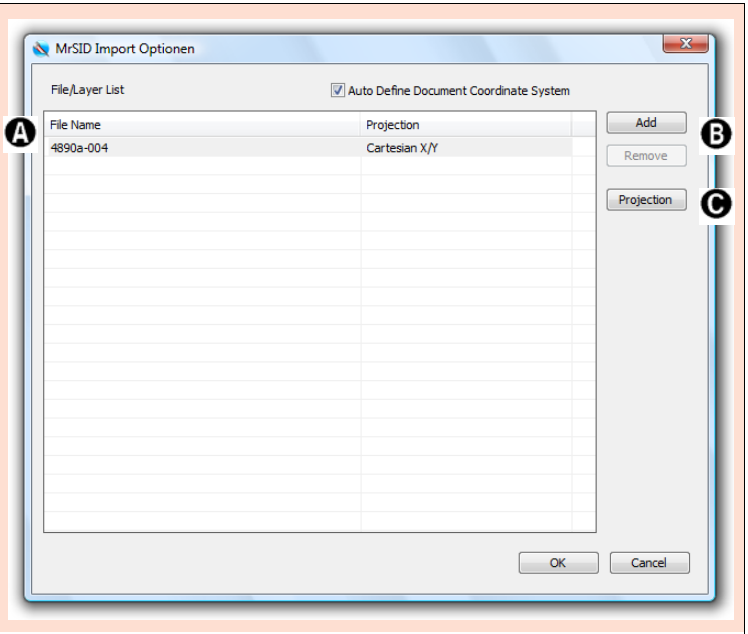
This dialog box appears whether you are opening one or multiple files.

A Image List. This list indicates all the files that you are opening or placing.

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).



Click OK to load the file(s). Each file has its own layer.

To open or place a DLG file

Created by the USGS, digital line graph (DLG) files are digital representations of cartographic data. These files are vector representations of maps either derived from photographs or digitized maps.

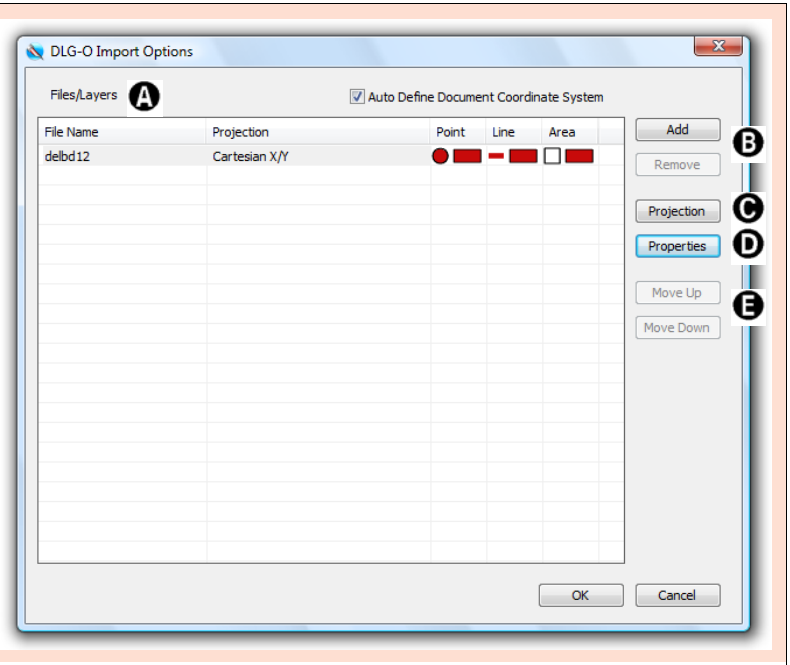
1 Choose File > Open or Place.

2 Select DLG/DO/OPT as file type.

Note: DLG files can have either .DLG, .DO, or .OPT as an extension.

3 Navigate to the .DLG file and click Open or Place. The DLG-0 Import Options dialog box opens.

DLG-O Import Options dialog box



This dialog box appears whether you are opening one or multiple files.

A Files/Layers. This list indicates all the files that you are opening or placing. The map objects that are contained in the file are indicated to the right (Point, Line, Area).

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

D Properties. Select a map object (Point, Line, Area) and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

E Move Up/ Move Down. Use these buttons to shuffle the files within the list.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s).

To open or place an E00 file

ESRI Export files, are created when exporting from ArcINFO. E00 is a compressed format for vector and raster files. If a file is especially large, ArcINFO breaks the file into smaller files, which will be numbered in sequence; e.g., .E00, .E01, .E02, etc.

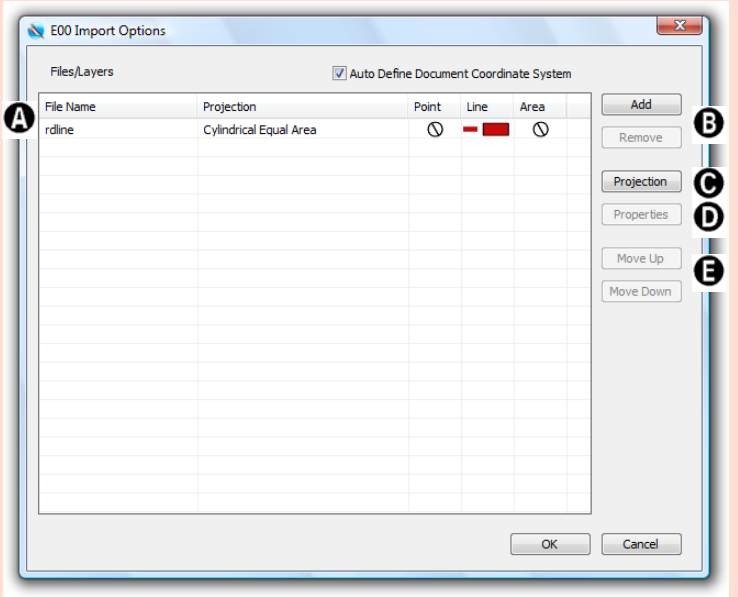
1 Choose File > Open or Place.

2 Select E00 as file type.

3 Navigate to the .E00 file and click Open or Place. The E00 Import Options dialog box appears.

E00 Import Options dialog box

This dialog box appears whether you are opening one or multiple files.



A Files/Layers. This list indicates all the files that you are opening or placing. The map objects that are contained in the file are indicated to the right (Point, Line, Area). If a file does not contain a specific map object, an X appears in the space.

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

D Properties. Select a map object (Point, Line, Area) and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

E Move Up/ Move Down. Use these buttons to shuffle the files within the list.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s).

To open or place an S-57 file

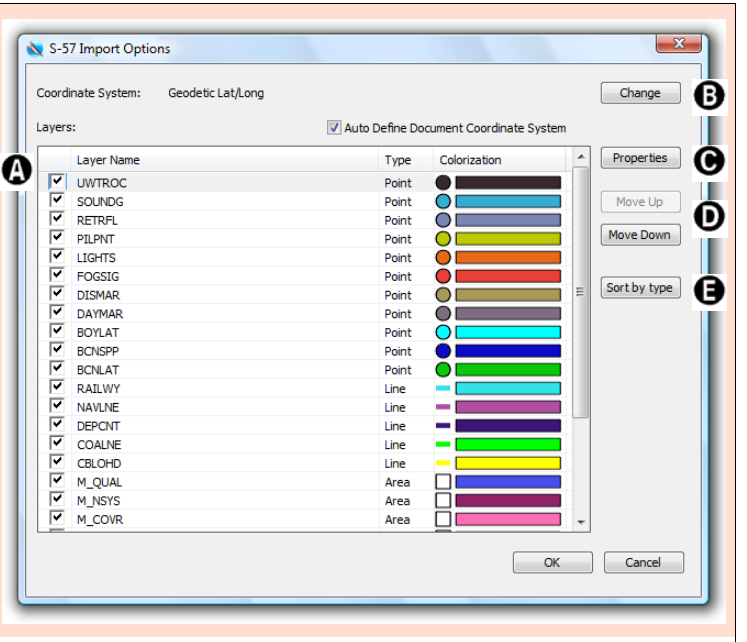
S-57 is the transfer standard prepared by the International Hydrographic Organization committee to allow users to open Electronic Navigational Charts (.000 files).

1 Choose File > Open or Place.

2 Select 000 - S-57 as file type.

3 Navigate to the .000 file and click Open or Place.

S-57 Import Options dialog box



A Layers. This list indicates all the layers contained in the file. The map objects that are contained in the layer are indicated to the right (Point, Line, Area).

B Change. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

C Properties. Select a layer in the list and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

D Move Up/ Move Down. Use these buttons to shuffle the files within the list.

E Sort by type. Click this button to arrange the files according to type; i.e., area, line, or point.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s).

To open or place an ECW file

Developed by Earth Resource Mapping, Enhanced Compressed Wavelet (ECW) is a compressed format for very large geo-referenced images. Upon compression, images retain their geo-referencing information.

1 Choose File > Open or Place.

2 Select ECW as file type.

3 Navigate to the .ECW file and click Open or Place. The ECW Import Options dialog box appears.

ECW Import Options dialog box

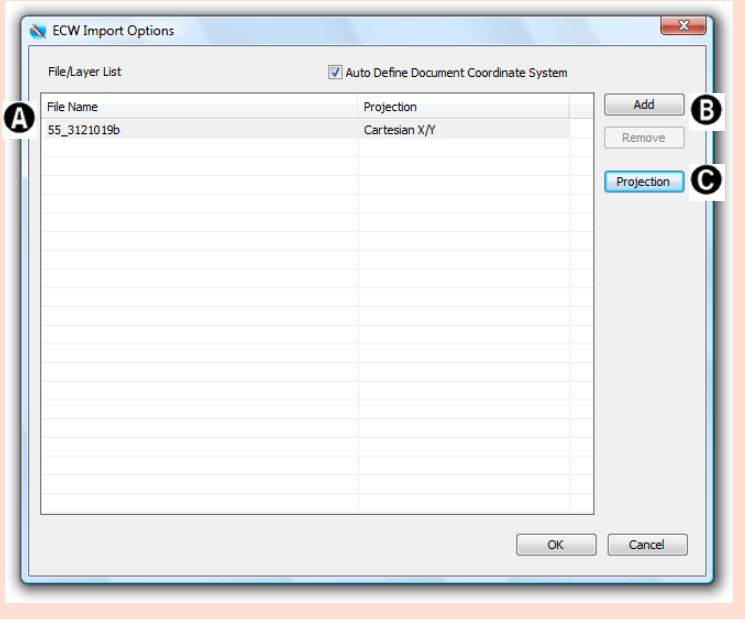
This dialog box appears whether you are opening one or multiple files.

A Image List. This list indicates all the files that you are opening or placing.

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).



Click OK to load the file(s).

To open or place a USGS DOQ file

Developed by the USGS, DOQ (digital orthophoto quadrangle) is a digital image of an aerial photograph in which distortions caused by camera tilting and topography have been removed.

1 Choose File > Open or Place.

2 Select DOQ as file type.

3 Navigate to the .DOQ file and click Open or Place. The USGS DOQ Import Options dialog box appears.

Note: A DOQ file may also have the following extensions: NES, SES, NWS, SWS.

USGS DOQ Import Options dialog box

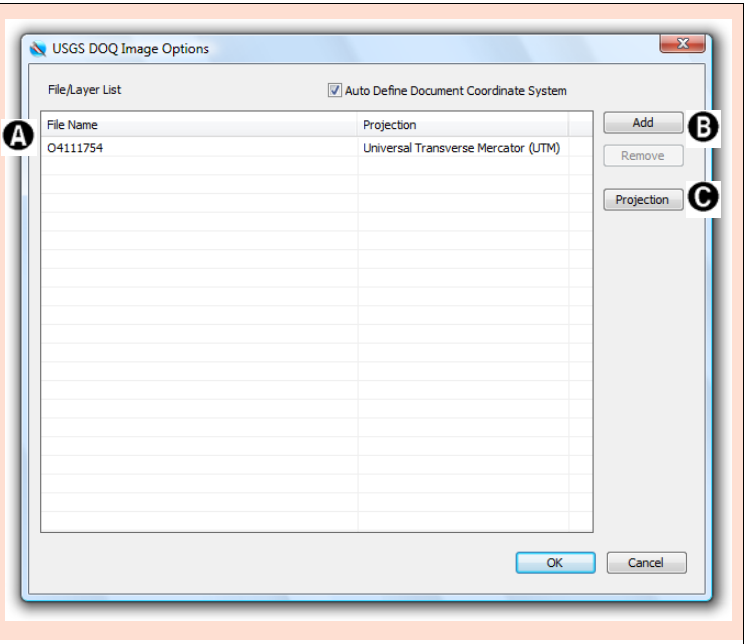
This dialog box appears whether you are opening one or multiple files.

A Image List. This list indicates all the files that you are opening or placing.

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).



Click OK to load the file(s).

To open or place a MapInfo file

Created by MapInfo Corporation, MapInfo® Interchange Format data consists of various files of which two files are paramount — .MIF and .TAB.

Canvas opens or places both the native MapInfo format (.TAB) and the interchange format (.MIF). To open the .TAB file, the .MAP file must be in the same directory. To open the .MIF file, the .MID file must be in the same directory.

1 Choose File > Open or Place.

2 Select MIF/TAB as file type.

3 Navigate to the .MIF or .TAB file and click Open or Place. The MapInfo Import Options dialog box appears.

MapInfo Import Options dialog box

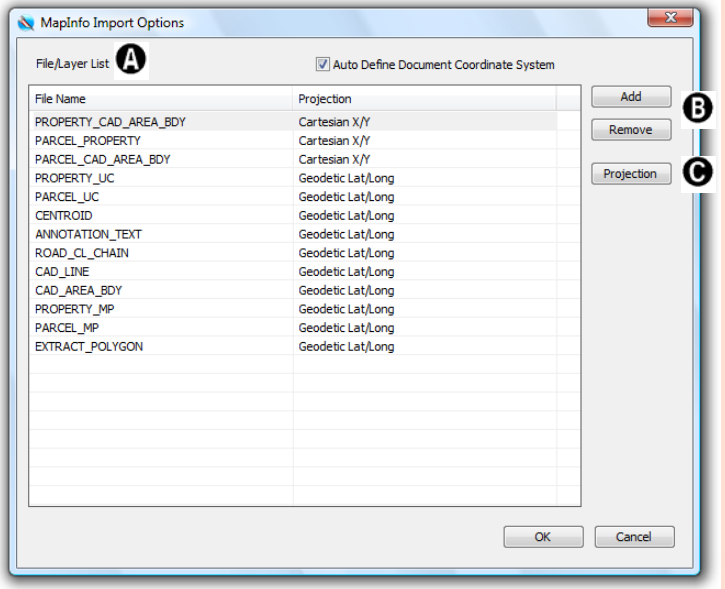
This dialog box appears whether you are opening one or multiple files.

A Image List. This list indicates all the files that you are opening or placing.

B Add/Remove. Click the Add button to open or place another file. To delete a file from the list, select the file in the list and click the Remove button.

C Projection. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).



Click OK to load the file(s).

To open or place a GML file

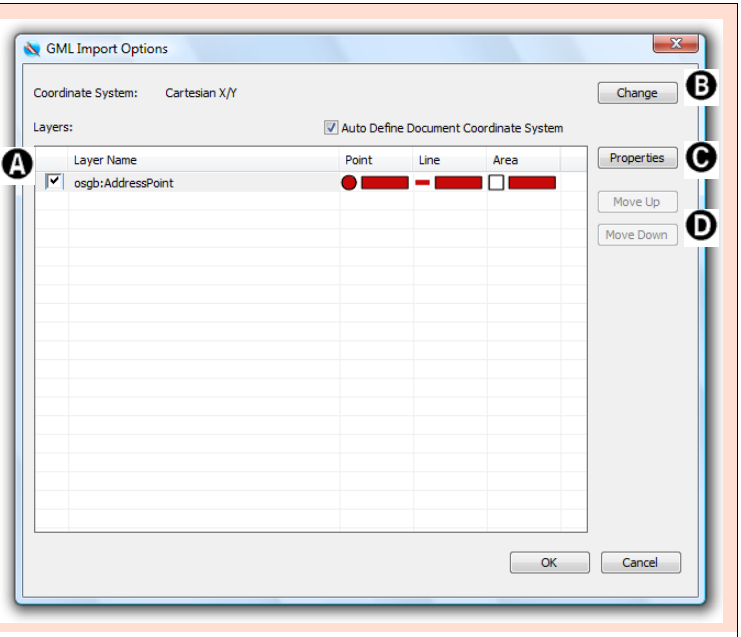
Based on XML, Geography Markup Language is a standard for geographic information developed by the OpenGIS Consortium (OGC). GML represents geographic information in a textual format.

1 Choose File > Open or Place.

2 Select GML as file type.

3 Navigate to the .GML file and click Open or Place. The GML Import Options dialog box opens.

GML Import Options dialog box



A Layers. This list indicates the file that you are opening or placing. The map objects that are contained in the file are indicated to the right (Point, Line, Area). If the file does not contain a specific map object, an X appears in the space.

B Change. Click this button to open the File Coordinate System dialog box (see "File Coordinate System dialog box" on page 39.12).

C Properties. Select a map object (Point, Line, Area) and click this button to open the Layer Properties dialog box (see "Layer Properties dialog box" on page 39.14).

D Move Up/ Move Down. Use these buttons to shuffle the files within the list.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click OK to load the file(s).

To open or place a GIS Text Data file

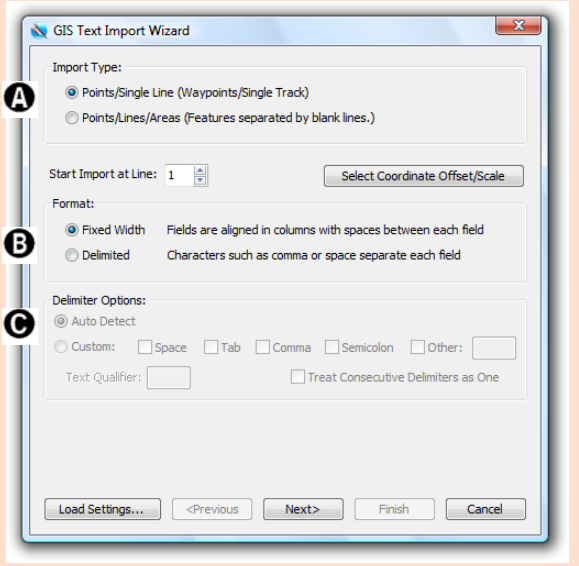
Canvas GIS+ contains an import wizard for opening GIS Text Data files.

1 Choose File > Open or Place.

2 Select TXT (GIS Text Data) as file type.

3 Navigate to the .TXT file and click Open or Place. The GIS Text Import Wizard opens.

GIS Text Import Wizard



A Import Type. Select either Points/Single Line or Points/Lines/Areas. If you select Points/Lines/Areas, the Format section becomes grayed out.

Start Import at Line. Enter a value in this field to specify when Canvas should starting reading the data in the .TXT file.

Select Coordinate Offset/Scale. Click this button to open the Offset/Scale dialog box. You can enter scale or offset values for the X/Y coordinates.

B Format. Select either Fixed Width or Delimited. If you select Delimited, You have access to the Delimiter Options section.

C Delimiter Options. Select Auto Detect and Canvas attempts to detect the delimiters upon import. Click Custom and you can specify the delimiter by selecting its appropriate checkbox. You can also define a delimiter by selecting Other and then entering the character in the field.

Text Qualifier. If the delimiter appears in a column of data and you want to ignore the delimiter, you can specify a text qualifier that would define the column as a whole. A text qualifier could be quotation marks "", parentheses (), etc. The actual .TXT file must contain the specified text qualifier.

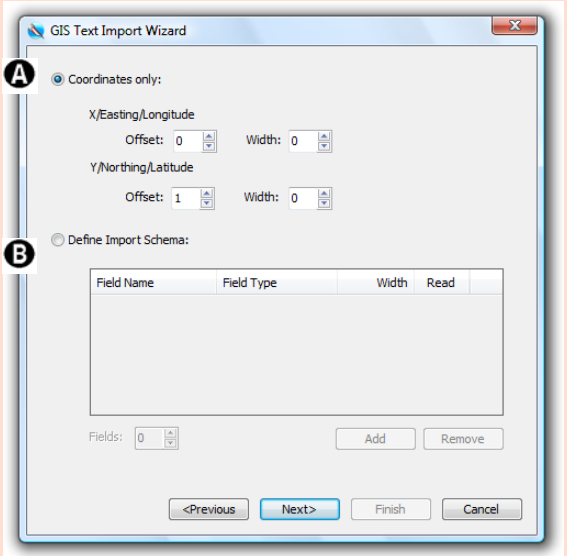
Treat Consecutive Delimiters as One. Select this option to consider consecutive delimiters as one delimiter.

Load Settings. If you have already defined and saved an import setting, click this button to load the settings. Navigate to the GTI file and click Open.

Click Next to proceed to the next screen.

GIS Text Import Wizard (screen 2)

This screen varies according to your Import Type selection in the first screen.



A Coordinates. The information in this section changes according to the Import Type.

If you chose Points/Single Line with a Fixed Width, you could define the Offset/Width for the X/Y (Lat/Long) coordinates. You also have access to the Define Import Schema option. Offset refers to the number of characters before that column begins; i.e., if you enter 10, Canvas establishes the X/Y coordinates at the tenth character. Width refers to the number of characters within that column.

If you chose Points/Single Line with Delimited, you could define the Field Position for the X/Y (Lat/Long) coordinates. You also have access to the Define Import Schema option.

If you chose Points/Lines/Areas, you have to define the Field Position for the X/Y (Lat/Long) coordinates.

B Define Import Schema. Select this option to define the columns of data contained in the .TXT file.

Click the Add button or enter the number of columns in the Fields box. To remove a field, select it and click the Remove button.

Enter a descriptive name in the Field Name column. Then define it in the Field type column. select either Latitude, Longitude, Text, Numeric, or Date Time. Width refers to the number of characters within that column. Select Read to import that column or deselect Read to ignore it. Once imported, you can see this information in the Object Properties palette.

Click Next to move to the next screen.

GIS Text Import Wizard (screen 3)

If the file does not contain a certain object, the object's option is grayed out in this screen.

A Display Points as. Click Select Symbol to open the Select Library Item dialogo box. You can select a library item from a library object set (.MCR). Select a library item and click OK. The Point is now replaced with the library item throughout the document. Define the size of the point objects by entering a value in the Point Size field. Deselect this option if you do not want to create any point objects in the file.

B Display Lines as. Click Select Stroke to open the stroke options in the Presets palette. You can use any stroke type.

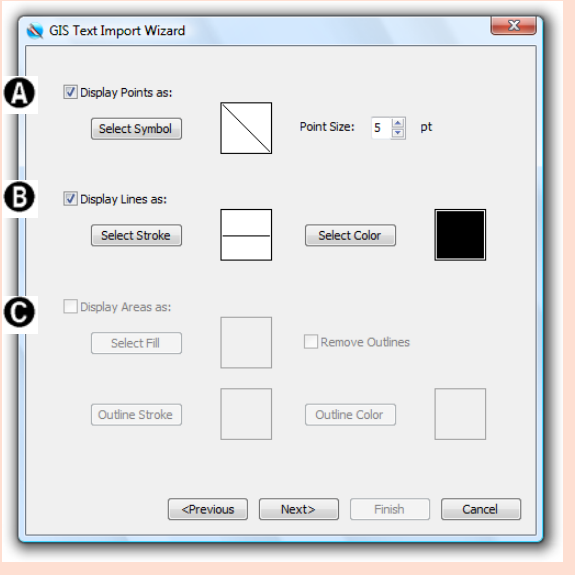
Click Select Color to choose a color ink for the line objects.

Deselect this option if you do not want to create any line objects in the file.

C Display Areas as. Click Select Fill to choose a fill ink for the area objects. You can use any fill ink type.

Select Remove Outlines to remove the stroke from all area objects.

Click Outline Stroke to open the stroke options in the Presets palette. You can use any stroke type.



Click Outline Color to choose a color ink for the outline stroke of the area objects.

Deselect this option if you do not want to create any area objects in the file.

GIS Text Import Wizard (screen 4)

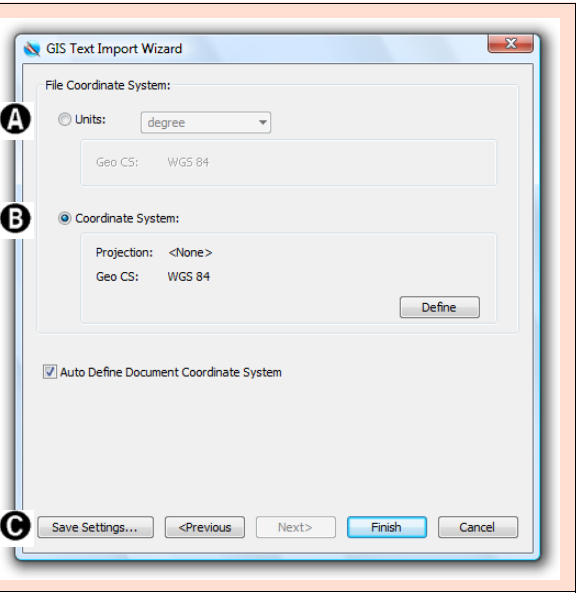
A Units. Select this option and choose the linear unit from the menu.

B Coordinate System. Select this option and click the Define button to open the File Coordinate System dialog box and configure the coordinate system (see "File Coordinate System dialog box" on page 39.12).

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

C Save Settings. Click this button if you want to save the text import settings for future use.

Click Finish to complete the import process.



To open or place a GPS Garmin Data file

Canvas GIS+ contains an import wizard for opening GPS Garmin simple text files. Use this functionality to plot the waypoints or recreate the path.

1 Choose File > Open or Place.

2 Select TXT (GPS Garmin) as file type.

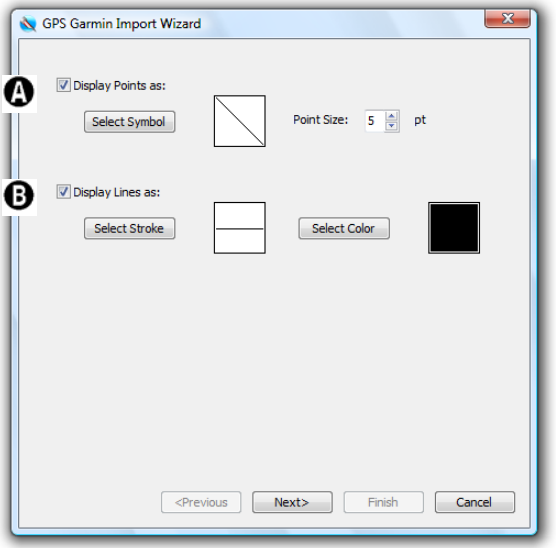
3 Navigate to the .TXT file and click Open or Place. The GPS Garmin Import Wizard opens.

GPS Garmin Import Wizard

A Display Points as. Click Select Symbol to open the Select Library Item dialogo box. You can select a library item from a library object set (.MCR). Select a library item and click OK. The Point is now replaced with the library item throughout the document. Define the size of the point objects by entering a value in the Point Size field.

B Display Lines as. Click Select Stroke to open the stroke options in the Presets palette. You can use any stroke type.

Click Next to go to the next screen.



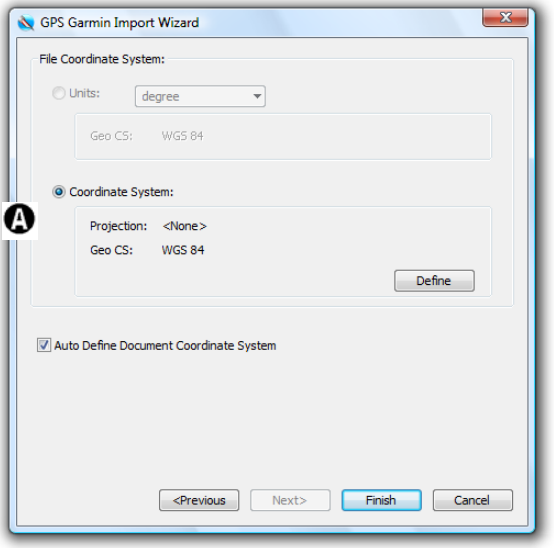
GPS Garmin Import Wizard (screen 2)

A Coordinate System. Click the Define button to open the File Coordinate System dialog box and configure the coordinate system (see "File Coordinate System dialog box" on page 39.12).

Note: In the File Coordinate System dialog box, you can only select angular units and a geographic coordinate system. You do not have access to linear units and map projections.

Auto Define Document Coordinate System. Select this checkbox so Canvas sets up the projected coordinate system for the file(s). If this checkbox is deselected and you click OK, the Document Coordinate System dialog box appears. This dialog box has the same projection options as the GIS manager (see "Document Coordinate System dialog box" on page 39.13).

Click Finish to complete the import process.



Exporting GIS files

Canvas GIS+ provides export capabilities to various vector- and image-based GIS formats, including Shapefile, GeoTIFF, ECW, among others (see "GIS data formats" on page 39.8).

✓ Tip
If you have opened several shapefiles, each shapefile is exported individually.

To export Shapefiles

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Enter a name for the file and navigate to the directory.

3 Click Save and the Export Shapefile dialog box opens.

Export Shapefile

A Layer list. All layers being exported are indicated in this list. Select/Deselect a checkbox to include or remove the layer from the export.

B Export. By default, the shape_tag is indicated: area, line, or point (see "Tagging selections" on page 39.40). If you want to specify a different shape_tag, exclude objects that are not tagged, or include all objects, even those with no shape_tag, open this menu and select an option.

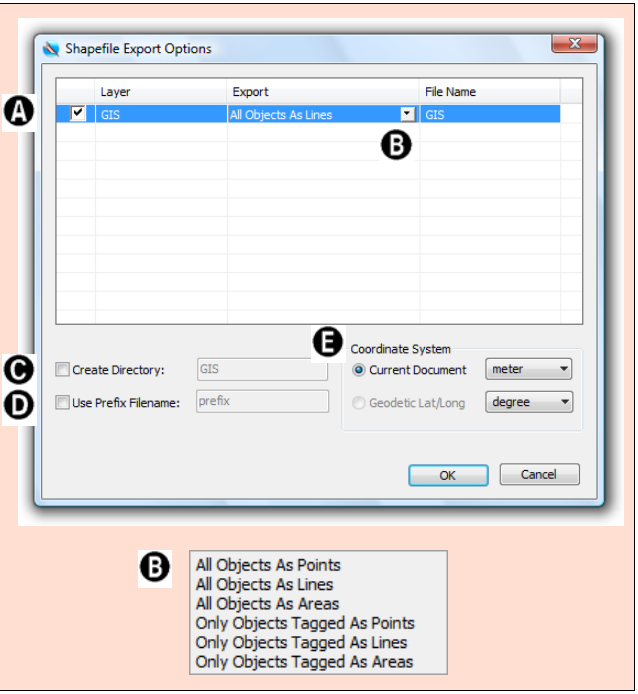
C Create Directory. Select this checkbox to make a directory for the files. Enter a name in the text box.

D Use Prefix Filename. Select this checkbox to attach a prefix to the filename(s). Enter a prefix name in the text box.

E Coordinate System. Select Current Document or Geodetic Lat/Long. For Current Document, select a linear unit, if necessary. For Geodetic Lat/Long, select an angular unit.

Click OK to export. Each layer is exported as a separate Shapefile, and Canvas creates their respective SHX and DBF files.

Note: You should also assign attributes to objects (Object Properties palette). These attributes are included in the DBF file.



To export GeoTIFF files

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select GeoTIFF as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Export GeoTIFF dialog box opens.

GeoTIFF export

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

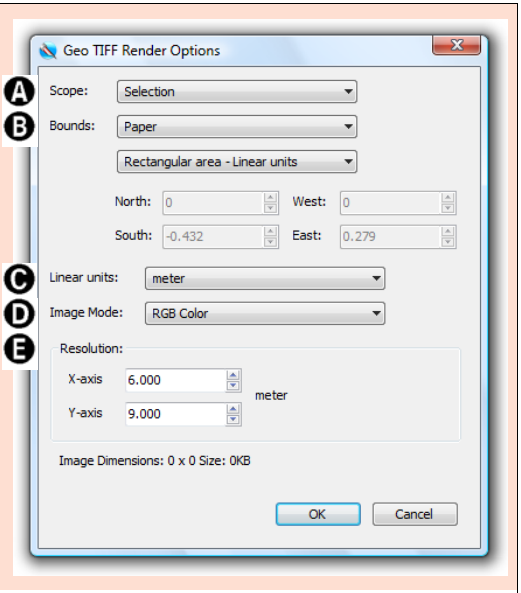
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export ECW files (Windows only)

1 Choose File > Save As or GIS > Export. The Save or Save as dialog box opens.

2 Select ECW as file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the ECW Render Options dialog box opens.

ECW Render Options

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

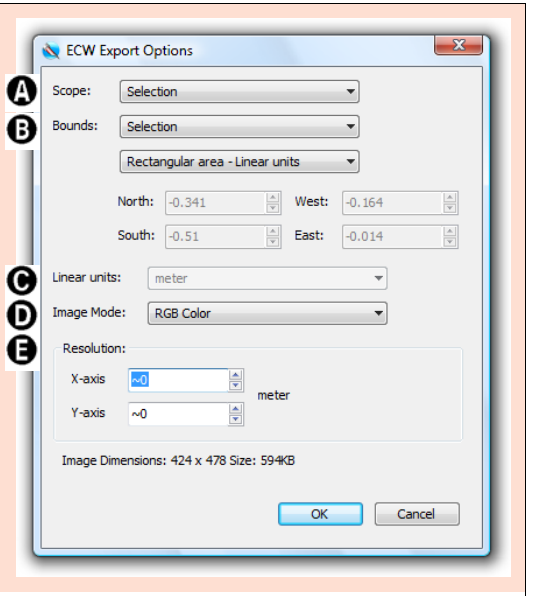
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export Geo JPEG files

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select Geo JPEG as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Geo JPEG Render Options dialog box opens.

Geo JPEG Render Options

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

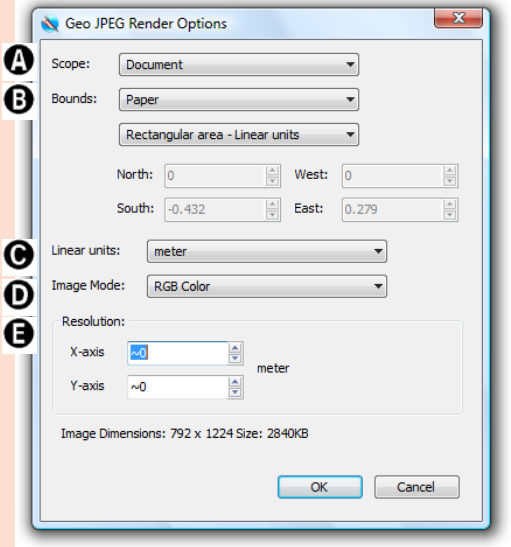
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export Geo GIF files

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select Geo GIF as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Geo GIF Render Options dialog box opens.

Geo GIF Render Options

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

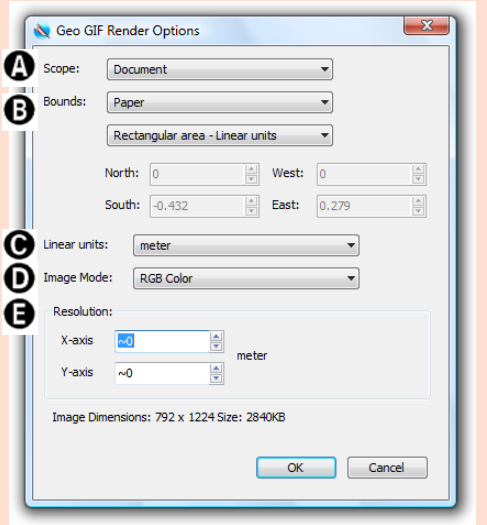
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export Geo PNG files

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select Geo PNG as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Geo PNG Render Options dialog box opens.

Geo PNG Render Options

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

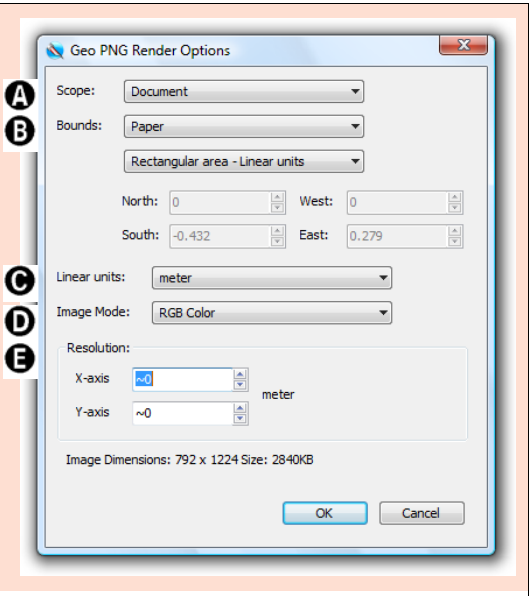
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export Geo BMP files

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select Geo BMP as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Geo BMP Render Options dialog box opens.

Geo BMP Render Options

A Scope. Select either Document, Layer, or Selection. Choosing Document exports all active layers, whereas Layer exports the current layer. Selection is grayed out if no objects have been selected.

B Bounds. Select either All objects in scope, Paper, Selection, or Custom.

If you choose Custom, you must define a bounding box by entering values in the North, South, West, and East fields.

Then choose a clipping rectangle option:

Lat/Long Area - Angular Units — Rectangle in angular units

Rectangular Area - Linear Units — Rectangle in linear units

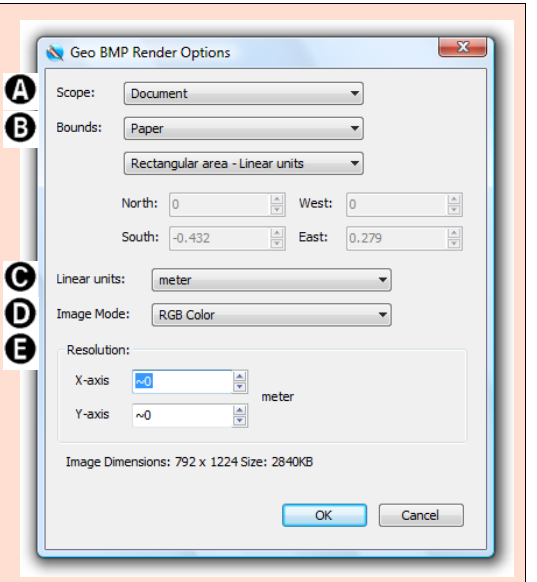
Corner and Size - Linear Units — North West Corner and width and height in linear units

C Linear units. Select an X/Y unit from the menu.

D Image Mode. Select either RGB Color or Grayscale.

E Resolution. Enter values in the X- and Y-axis fields for the pixel dimensions. The unit is the selected Linear unit; e.g., 3 meter and 4 meter forthe X- and Y-axis respectively indicates that each pixel is 3 x 4 meter.

The final image dimensions are noted at the bottom of the dialog.



Click OK to export the file.

To export as GIS Text Data

With Canvas GIS+, you can export your GIS data to an ASCII file. You can then open and edit this file in a text editor or open the file another GIS application, if necessary.

1 Use either the File > Save As or GIS > Export method. The Save or Save as dialog box opens.

2 Select GIS Text Data as the file type.

3 Enter a name for the file and navigate to the directory.

4 Click Save and the Export GIS Text dialog box opens.

Export GIS Text File

A Coordinate Separator. Specify the type of separator that you want to use to separate the X/Y coordinates.

B Feature Separator. Select None for no separator between the objects in the text file. Blank Line separates the individual objects with a blank line.

C Scale Factors for X/Y Values. Enter values in the fields if you want to scale the X/Y values.

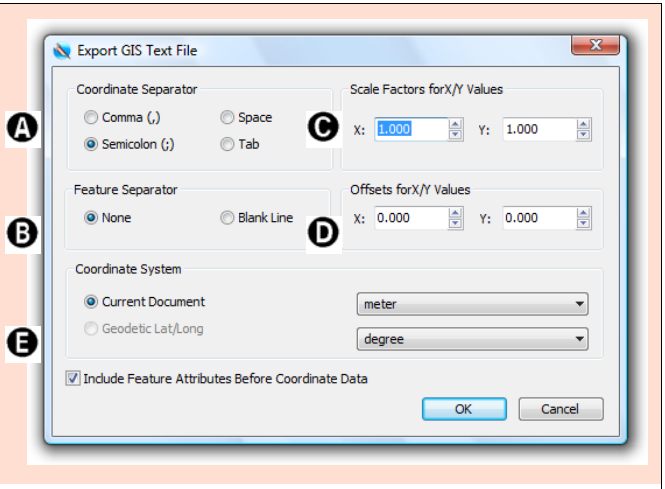
D Offsets for X/Y Values. Enter values in the fields if you want to apply an offset to the X/Y coordinates.

E Coordinate System. Select Current Document and choose the linear and angular units from the menus.

If your file is already GIS enabled, the projection is indicated beneath the Current Document radio button; e.g., Transverse Mercator. Select the projection radio button and choose the linear units and angular units from the menus.

Include Feature Attributes Before Coordinate Data. Select this option if you want to include object attributes in the GIS text file. Deselecting this option excludes any object attributes from the exported GIS text file.

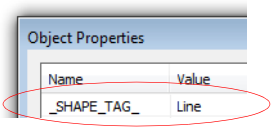
Click OK to export the file.



Advanced property operations

This section encompasses the advanced operations that can be performed on vector-based GIS files. You should already have a basic understanding of the file concepts and know how to open or place the respective file. You can perform these operations on the following file types:

- SHP
- S-57
- E00
- RT1
- GML
- SDTS
- MIF



Tagging selections

Depending upon the file type, a file or layer may contain one type or of all three types of map objects – Point, Line, or Area. The object type is indicated in the respective Import Options dialog box when opening or placing v arious file types (see "Files/Layers List dialog box" on page 39.11). Also, if you select a map object and open the Object Properties palette, the object type is indicated within the SHAPE_TAG property field.

The Tag selection as commands let you modify or remove the SHAPE_TAG information for the selected object(s).

Unknown features Select this option to remove the SHAPE_TAG property.

- **To add the SHAPE_TAG property:** Select the object from which you removed the SHAPE_TAG property and choose Tag selection as > Point features, Line features, or Area features.

Point features Select this option to change the selected object to a point object.

Line features Select this option to change the selected object to a line object.

Area features Select this option to change the selected object to an area object.

Select by property

The Select by property command lets you select map objects according to property information. Create a query based on a selected property and property value; e.g., if you have opened a file that indicates all airport locations in a state, you could perform a query that selects private airports as opposed to public airports. You could then employ another command to replace the point objects, which indicate the selected private airports, with dynamic library objects (see "Visualize data" on page 39.46), or use Canvas' tools to change their fill, stroke, size, etc.

Note: If necessary, you could perform this command and then employ a Tag selection as command to modify the selected objects SHAPE_TAG information (see "Tagging selections" on page 39.40).

The types of queries that you can create depend on the available property information as well as the current layer.

Select by property

A Method. Select either Create new selection, Add to selection, Remove from selection, or Select from selection depending on the desired outcome.

B Query field. The query will appear in this field.

C Operator buttons. These are the most common operators. Click the button and the operator appears in the Query field.

D Property list. The properties contained within the open file are indicated. Click on a property to load the related Property Value list. Double-click on a Property in the list and it appears in the Query field.

E Property Value list. After clicking an item in the Property list, the Property Value list loads.

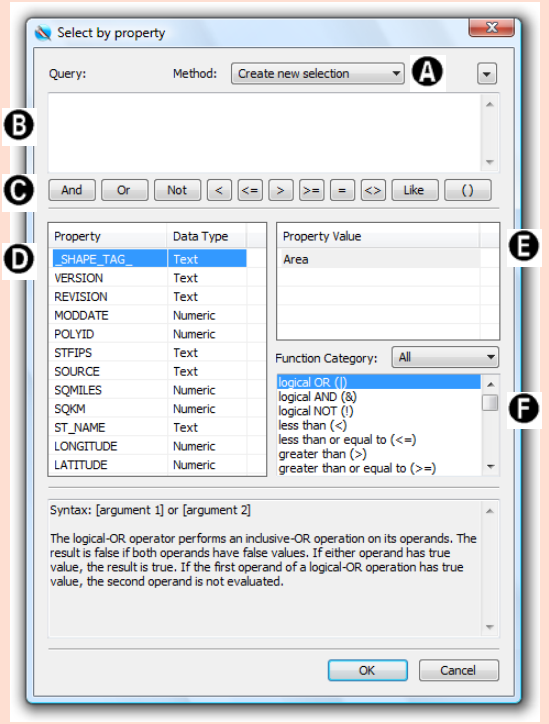
F Function Category. This list contains the possible operators. Double-click an operator and it appears in the Query field. Select a category of operators from the menu, if necessary.

Click OK to perform the query.

To save a query: Click on the menu icon and select Save Query. The Save Query as dialog box opens. Enter a name for the query and click OK.

To load a saved query: Click on the menu icon and select the query name from the list. The query appears in the Query field.

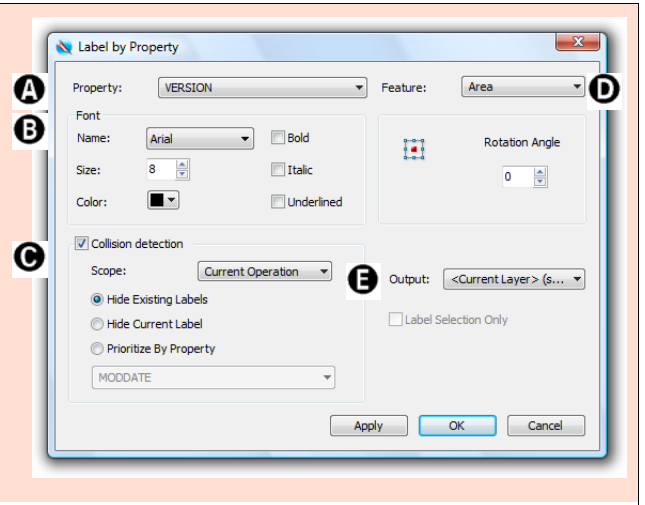
Statistics by property. Select this option to open the Statistics by property dialog box (see "Statistics by Property" on page 39.43).



Label by property

Canvas GIS+ has the ability to create labels for map objects based on a selected property. Create queries for a selected property and its related property values to drill down even further (see "Expression Builder" on page 39.44). You could combine the Select by property command with this command to apply labels to selected map objects (see "Select by property" on page 39.40).

Label by Property



A Property. Select an object property from the menu. Select Build Expression to open the Expression Builder dialog box.

B Font. Select the font and its text attributes. By default, the color ink is set to black. Click on the color icon to open the color ink palette.

C Collision detection. Select this checkbox to define the placement of labels that collide.

Scope. Select Current Operation, Layer, or Page. If there are no labels yet, select Current Operation. If there are already labels on a layer or page, select Layer or Page depending on the location of the existing labels.

Then select a collision option radio button. If you select Prioritize By Property, you must choose a property that takes priority when labeling is performed.

D Feature. Select Point, Line, or Area from the menu.

Point or Area. Select the reference point and enter a Rotation Angle.

Line. Select Above, On, or Under to position the label in relation to the line.

Select Force Label so lines are labeled even if they are smaller than the label itself. Collision detection is still enforced.

E Output. Select the location for the labels: New Layer, Current Layer, or an existing layer.

Label Selection Only. If you have a portion selected, this option is enabled. Deselect it to label the entire object.

Statistics by Property

Use the Statistics by property command to obtain the total number of map objects on the current layer or within the current selection. The information is displayed in a histogram as well. Select an option from the Scope menu and then from the Property menu.

Statistics by property

1 Scope. Select either Current layer or Selection from the menu. Select Build Expression to open the Expression Builder dialog box (see "Expression Builder" on page 39.44).

2 Property. Select an object property from the menu. Select Build Expression to open the Expression Builder dialog box. If you decide to perform a query, the query must have a numerical result to retrieve statistics.

A Expression. Click this button to open the Expression Builder dialog box (see "Expression Builder" on page 39.44).

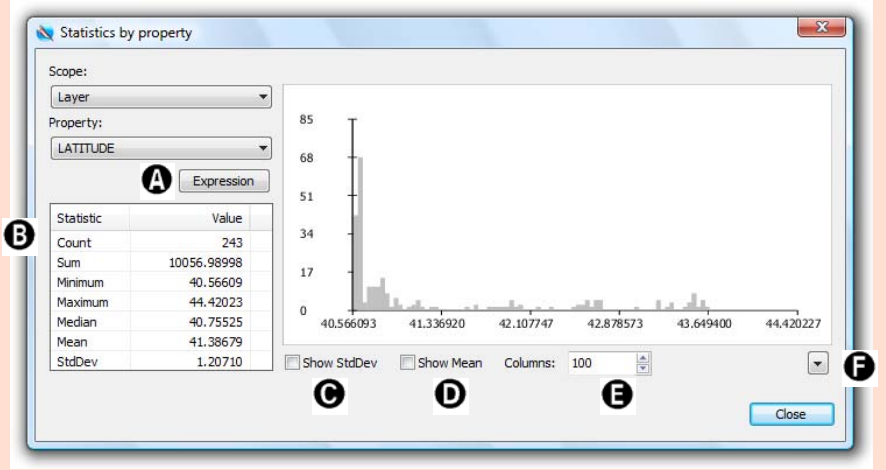
B Statistics. This section indicates the statistics for the selected property.

C Show StdDev. Select this checkbox to show the standard deviation. The standard deviation appears as a dotted line.

D Show Mean. Select this checkbox to show the average value for the selected property within the scope.

E Columns. Select the number of columns to display in the histogram.

F Menu options. You can select one of the following options: Copy statistics (as text), Copy selected statistics value (as text), or Place histogram (as Canvas objects). If you select Place histogram (as Canvas objects), the histogram is placed in the upper left corner of the layout area.



Expression Builder

Accessible from other commands, this dialog box lets you create queries for the current layer or a selected map object.

Expression Builder

A Expression field. The query will appear in this field.

B Operator buttons. These are the most common operators. Click the button and the operator appears in the Query field.

C Property list. The properties contained within the current layer are indicated. Click on a property to load the related Property Value list. Double-click on a Property in the list and it appears in the Expression field.

D Property Value list. After clicking an item in the Property list, the Property Value list loads.

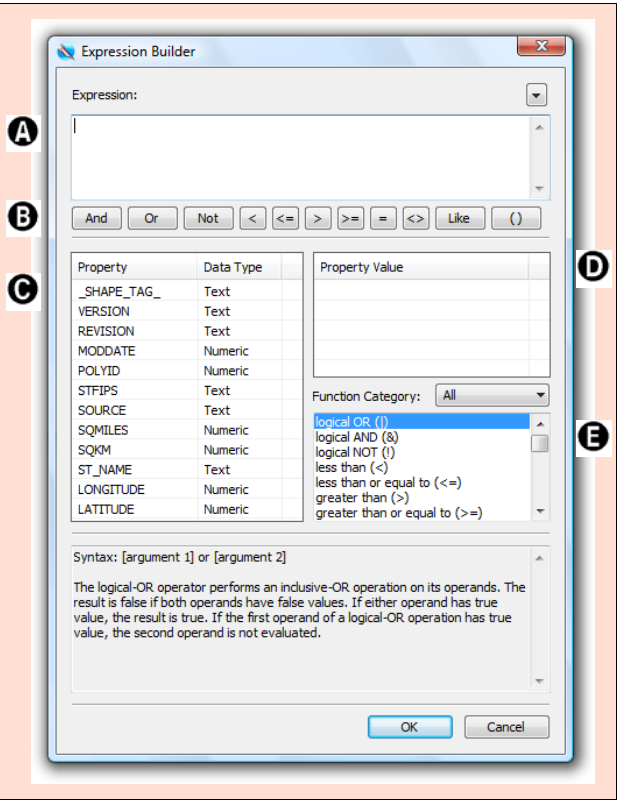
E Function Category. This list contains the possible operators. Double-click an operator and it appears in the Query field. Select a category of operators from the menu, if necessary.

Click OK to perform the query.

To save a query: Click on the menu icon and select Save Query. The Save Query as dialog box opens. Enter a name for the query and click OK.

To load a saved query: Click on the menu icon and select the query name from the list. The query appears in the Query field.

To delete a saved query: Click on the menu icon and select Delete Query. The Delete Query dialog box appears. Select the query from the Name menu and click OK.

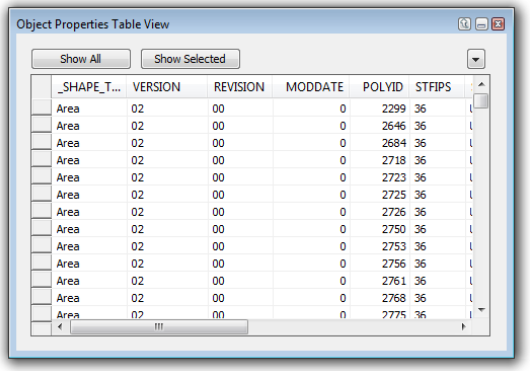


Viewing object properties

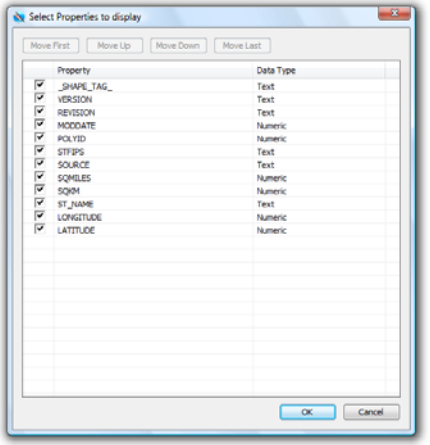
This command allows you to view the properties of multiple map objects in a spreadsheet format. To open the Object Properties Table View palette, choose GIS > Object Properties Table View.

By default, all object properties of each object are indicated unless you select an object and enable the Show Selected only checkbox. Then, only the properties for the selected object are shown.

Note: Only the properties of the map objects on the current layer are displayed.



Object Properties Table View palette



Select Properties to display dialog box

Menu options

The following options are available in the palette menu.

This option	does this
Save	Opens the Save object properties dialog box so you can save the properties in a TXT file.
Copy	Copies the properties currently in the palette. Paste the data in a spreadsheet or text program.
Select by property	Opens the Select by property dialog box (see “Select by property” on page 39.40)
Clear selection	Deselects all selected objects
Select All	Selects any object whose properties appear in the palette
Switch selection	Reverses the current selection; i.e., any selected objects are deselected and vice-versa.
Fit view to selection	Causes Canvas to magnify and center the selected objects
Add property	Opens the Add Property dialog box (see “To add properties” on page 39.46)
Edit properties	Opens the Object Properties palette; select Define Property from the palette menu
Statistics by property	Opens the Statistics by property dialog box (see “Statistics by Property” on page 39.43)

This option	does this
Customize	Opens the Select Properties to display dialog box in which you can select the properties that you want to display

To add properties

With this command, you can add a property to all map objects on the current layer. The Property can either be Text or Numeric.

Add Property dialog box

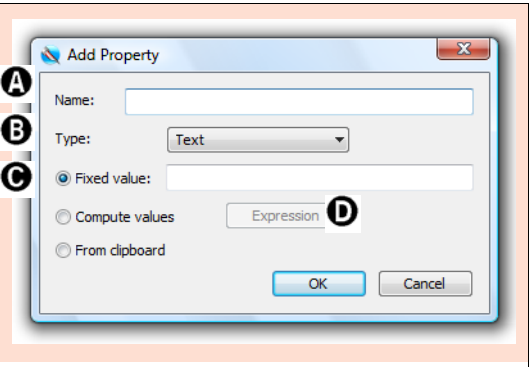
A Name. Enter a name in this field. In the Object Properties Table View palette, a new column is created with this Name.

B Type. Select either Text or Numeric.

C Value. Enter the appropriate value in this field.

Compute values. Select this checkbox if you want to create an expression.

D Expression. Click this button to open the Expression Builder dialog box (see "Expression Builder" on page 39.44). If you select Numeric, the result of the expression must be numeric as well.



To delete a property

1 Open the Object Properties Table View palette

2 Select Edit Properties to open the Object Properties palette.

3 Open the palette menu and choose Define Property. The Define Properties dialog box opens.

4 Select a property in the list and click Delete.

Visualize data

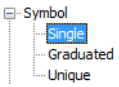
With the Visualize data command, you can modify the appearance of map objects according to a selected property or a query that is based on a selected property and related property value.

You can change the appearance of a map object as well as create thematic and choropleth maps by using either the Symbol, Stroke, or Fill classifications.

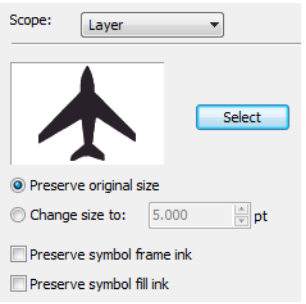
- **To save a visualization setting:** Open the dialog box menu and select Save. The Save visualization settings dialog box opens. Enter a name for the file (.DVF) and click Save.

- **To a load a saved data visualization:** Open the dialog box menu and select Load. The Load visualization settings dialog box opens. Navigate to the .DVF file and click Open.

Symbol



The Symbol classification refers to using a dynamic library object from a library object set to modify the appearance of map objects; e.g., perhaps, you have opened or placed a file that contains point objects that indicate airports, hospitals, or points of interest, etc., and you want to replace the point objects with a dynamic library. See “Dynamic objects & clipart” on page 21.1 for information regarding dynamic library objects and the Symbol Library palette. For the Symbol option, you can select either Single, Graduated, or Unique.



Single Select this option to define one symbol that you wish to use to modify the appearance of a map object.

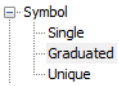
1 Select Layer or Selection from the Scope menu.

2 Click the Select button to open the Select Library Item dialog box (see “Select Library Item dialog box” on page 39.14).

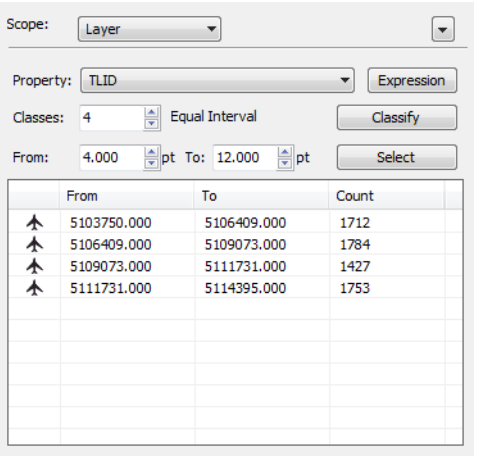
3 Choose the dynamic library object and click OK to close the Select Library Item dialog box.

- **Preserve original size:** Select this radio button to keep the size of the object being replaced by a dynamic object; i.e., if a point object is originally 5 points, the selected dynamic object would be sized to 5 points.
- **Change size to:** Select this radio button and then enter a size in the text field. The selected dynamic object will be the chosen size.
- **Preserve symbol frame ink:** Select this checkbox to use the object’s original outline color.
- **Preserve symbol fill ink:** Select this checkbox to use the object’s original fill color.

4 Click Apply to view the result and then OK to return to the main window.



Graduated Select this option to define a symbol or symbols that you wish to use to modify the appearance of a map object. Graduated refers to a graduation in size based on a selected property or defined query.



1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu. Only properties that have a numeric data type appear in the Property menu.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries that have a numeric result.

Note: If your query does not have a numeric result, no action will occur when you click Apply or OK.

3 Enter the number of classes in the Equal Interval field. You can also click the Classify button to open the Classify dialog box, in which you further define the classification method (see “Classification dialog box” on page 39.50).

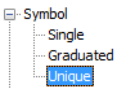
4 Use the From and To fields to determine the size range for the dynamic library objects. From refers to the smallest size, and To is the largest size.

5 Click the Select button to open the Select Library Item dialog box (see “Select Library Item dialog box” on page 39.14).

6 Choose the dynamic library object and click OK to close the Select Library Item dialog box. The chosen dynamic library object is displayed to the left of the size values.

Note: If you want a value, or all values, to have a different dynamic library object, click on the dynamic library object to the left of the value to open the Select Library Item dialog box. Choose the dynamic library object and click OK to close the Select Library Item dialog box. Repeat this procedure to assign a different dynamic library object to a value.

7 Click Apply to view the result and then OK to return to the main window.

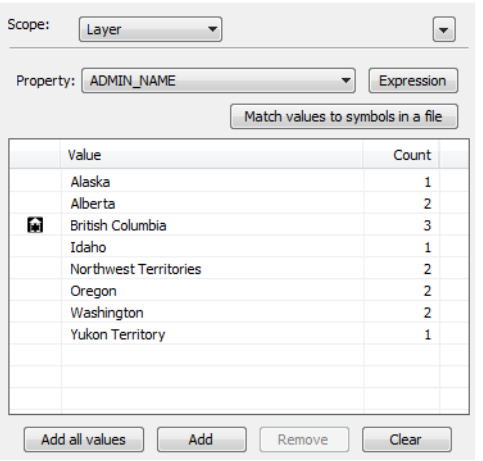


Unique Select this option to select individual symbols for each value obtained from the selected property or query.

1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu.

You can also click the Expression button to launch the Expression Builder dialog box (see "Expression Builder" on page 39.44) in which you can create property queries.



3 Click the Add all values button to load the values for the selected property or the query.

- **To remove values:** Select the value in the list and then click Remove.
- **To add values:** Click the Add button to open the Add Values dialog box.
- **To remove all values from the list:** Click the Clear button.

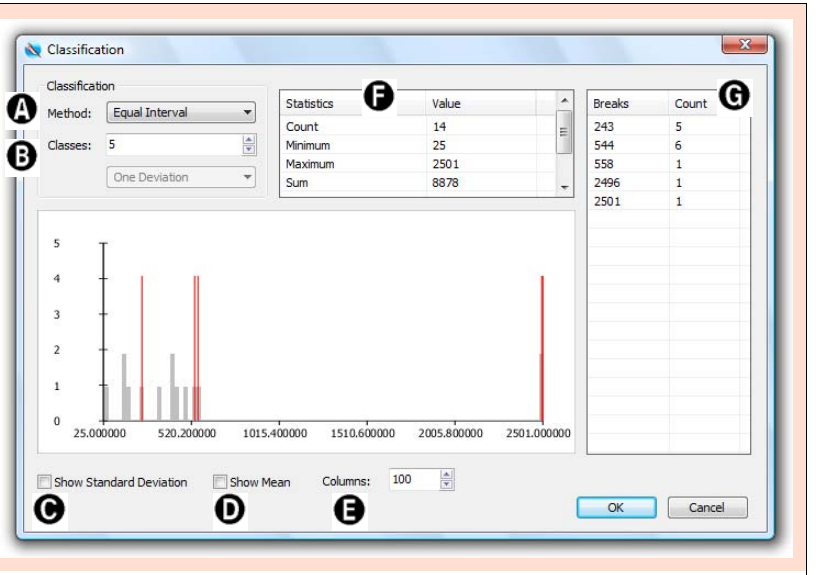
- **To match values to symbols:** Click the Match values to symbols in a file. The Load Settings dialog box opens. Navigate to the Canvas Symbols folder and select the appropriate file. Click Open.

Note: The names of the symbols in the file must match the values that appear in the list. You can create objects and then save the files via the Symbol Library palette.

Classification dialog box

You can use this dialog box to apply classification methods to your map for various reasons; e.g., to simplify map presentation, to demonstrate data that is not obvious, etc.

Note: You can only access the Classification dialog box if you are using a graduated classication process for symbol, stroke, or fill.



A Method. Select either Equal Interval, Quantile, Standard Deviation, or Manual.

Equal Interval: This method equally sets the entire range of values in each category. You can select the number of class breaks.

Quantile: Data is classified into a number of categories with an equal number of values in each category. You can select the number of class breaks.

Standard Deviation: With this method, Canvas finds the mean, places class breaks above and below the mean at intervals of either 1/6, 1/4, 1/2, or 1 standard deviation.

Manual: With this method, you can adjust, add, or remove class breaks. Place the cursor over an existing class break in the histogram and drag it to its new location. Shift-click within the histogram to add a class break. Shift-click an existing class break to remove it from the histogram.

B Classes. For Equal Interval and Quantile, you can adjust the number of class breaks. Standard Deviation has 4 default class breaks. Manual method has an unlimited

C Show Standard Deviation. Select this checkbox to show the standard deviation if you have used either Equal Interval, Quantile, or Manual. The standard deviation appears as a dotted line.

D Show Mean. Select this checkbox to show the average value for the applied method.

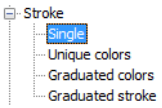
E Columns. Select the number of columns to display in the histogram.

F Statistics. This section indicates the statistics for the selected property. The same information can be obtained by using the Statistics by property function (see "Statistics by Property" on page 39.43).

G Breaks. This section indicates the number and location of each class break. If you adjust, add, or remove a class break, this list updates automatically.

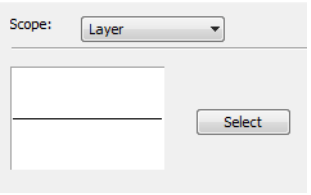
Click OK to apply classification method and return to the previous dialog box. Click Cancel to exit the dialog box without applying the method.

Stroke



The Stroke classification refers to changing the width, color, or type of pen stroke of map objects according to a selected property or query. Perhaps you have opened a Shapefile that contains the locations of every runway in a specific state and you want to assign them a parallel stroke or you wish to differentiate them according to their length. You could do so with the Stroke classification.

Single Select this option to choose a single pen stroke type to modify the appearance of a map object.



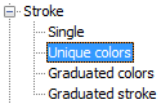
1 Select Layer or Selection from the Scope menu.

2 Click the Select button to open the pen stroke options of the Presets palette.

3 Choose a pen stroke type (Standard, Calligraphic, Neon, or Parallel). A preview of the chosen stroke type is displayed in the preview window.

4 Click Apply to view the result and then OK to return to the main window.

Unique colors Select this option to assign various colors to the pen stroke of map objects.



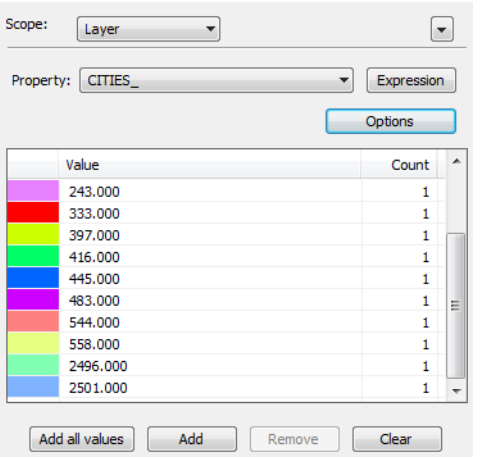
1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries.

3 Click Add all values to load the values for the selected property or the query. By default, black is assigned to every value in the list.

- **To remove values:** Select the value in the list and then click Remove.
- **To add values:** Click the Add button to open the Add Values dialog box.
- **To remove all values from the list:** Click the Clear button.



- **To use random colors:** Click the Options button and select Generate Random Color Palette.

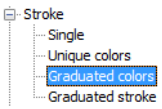
- **To apply a specific color ink to a Value:** Select the Value and click the color ink icon to open the color inks option in the Presets palette.

- **To load a different color palette:** Click the Options button and select Load Color Palette to open the Load Inks dialog box. Select a color palette and click Open.

- **To match values to inks in a file:** Click the Options button and select Match values to inks in a file. The Load Inks dialog box opens. Select a color palette and click Open.

Note: The names of the inks in the file must match the values that appear in the list. You can create inks as well as ink palettes and then save the ink palettes via the Presets palette.

4 Click Apply to view the result and then OK to return to the main window.



Graduated colors Select this option to apply a graduation in colors to the pen stroke of map objects.

1 Select Layer or Selection from the Scope menu.

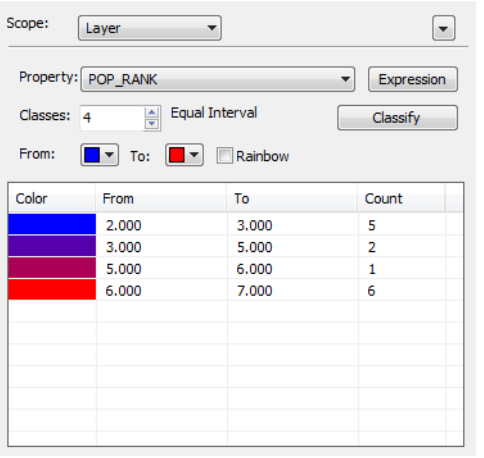
2 Select a property from the Property menu. Only properties that have a numeric data type appear in the Property menu. The value ranges appear in the list.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries that have a numeric result.

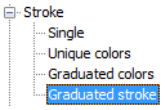
Note: If your query does not have a numeric result, no action will occur when you click Apply or OK.

3 Enter the number of classes in the Equal Interval field. You can also click the Classify button to open the Classify dialog box, in which you further define the classification method (see “Classification dialog box” on page 39.50).

4 Use the From and To color icons to choose the start and end colors. Select the Rainbow checkbox to apply a band of colors to the value ranges.



5 Click Apply to view the result and then OK to return to the main window.



Graduated stroke Select this option to apply a graduation in pen stroke width to the pen stroke of map objects.

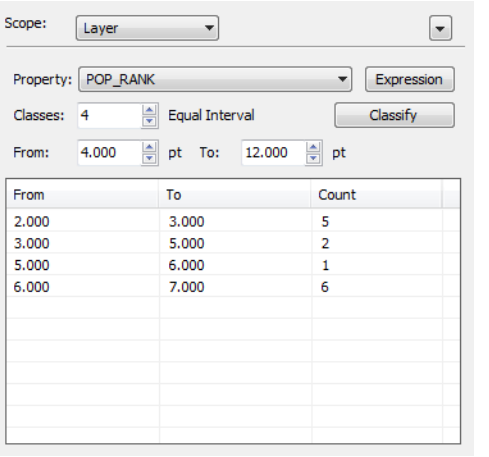
1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu. Only properties that have a numeric data type appear in the Property menu. The value ranges appear in the list.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries that have a numeric result.

Note: If your query does not have a numeric result, no action will occur when you click Apply or OK.

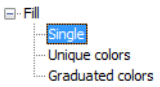
3 Enter the number of classes in the Equal Interval field. You can also click the Classify button to open the Classify dialog box, in which you further define the classification method (see “Classification dialog box” on page 39.50).



4 Use the From and To fields to determine the size range for the pen stroke. From refers to the thinnest width, and To is the widest width.

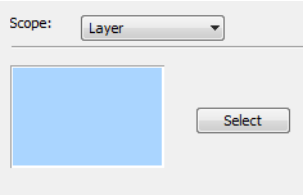
5 Click Apply to view the result and then OK to return to the main window.

Fill



The Fill classification refers to changing the fill ink of map objects according to a selected property or query.

Single Select this option to choose a single fill ink type to modify the appearance of a map object.

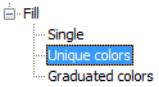


1 Select Layer or Selection from the Scope menu.

2 Click the Select button to open the fill ink options of the Presets palette.

3 Choose a fill ink type (Color, Gradient, Hatch, Texture, Symbol, or Pattern). A preview of the chosen ink type is displayed in the preview window.

4 Click Apply to view the result and then OK to return to the main window.



Unique colors Select this option to assign various colors to the fill of map objects.

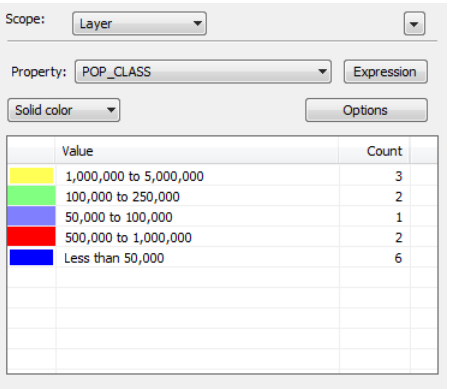
1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries.

3 Click Add all values to load the values for the selected property or the query. By default, black is assigned to every value in the list.

- **To remove values:** Select the value in the list and then click Remove.
- **To add values:** Click the Add button to open the Add Values dialog box.
- **To remove all values from the list:** Click the Clear button.



- **To toggle between Color, Hatch, or Pattern inks:** Open the ink type menu and select either Color, Hatch, or Pattern. The Hatch or Pattern ink will use the color ink that is displayed to the left of the Value list.

- **To apply a specific ink type to a Value:** Select the Value and click the ink icon to the left to open the ink type options in the Presets palette. Choose either Color, Gradient, Hatch, Texture, Symbol, or Pattern.

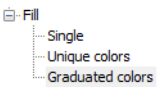
- **To use random color inks:** Click the Options button and select Generate Random Color palette.

- **To load a different color palette:** Click the Options button and select Load Color Palette to open the Load Inks dialog box. Select a color palette and click Open.

- **To match values to inks in a file:** Click the Options button and select Match values to inks in a file. The Load Inks dialog box opens. Select a color palette and click Open.

Note: The names of the inks in the file must match the values that appear in the list. You can create inks as well as ink palettes and then save the ink palettes via the Presets palette.

4 Click Apply to view the result and then OK to return to the main window.



Graduated colors Select this option to apply a graduation in fill color to map objects.

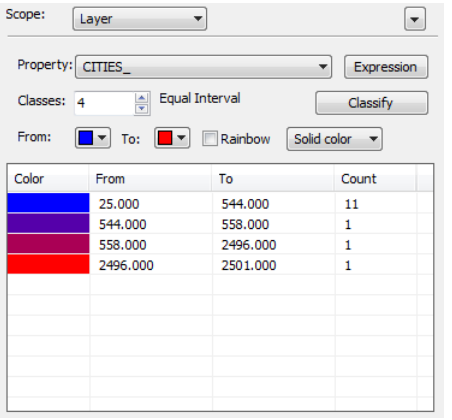
1 Select Layer or Selection from the Scope menu.

2 Select a property from the Property menu. Only properties that have a numeric data type appear in the Property menu. The value ranges appear in the list.

You can also click the Build Expression button to launch the Expression Builder dialog box (see “Expression Builder” on page 39.44) in which you can create property queries that have a numeric result.

Note: If your query does not have a numeric result, no action will occur when you click Apply or OK.

3 Enter the number of classes in the Equal Interval field. You can also click the Classify button to open the Classify dialog box, in which you further define the classification method (see “Classification dialog box” on page 39.50).



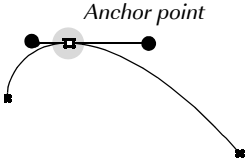
4 Use the From and To color icons to choose the start and end colors. Select the Rainbow checkbox to apply a band of colors to the value ranges.

- **To toggle between Color, Hatch, or Pattern inks:** Open the ink type menu and select either Color, Hatch, or Pattern. The Hatch or Pattern ink will use the color ink that is displayed to the left of the Value list.

5 Click Apply to view the result and then OK to return to the main window.

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GLOSSARY



ACTIVATE To make a window active by clicking anywhere in it.

ACTIVE WINDOW The window with the program's focus, usually in front. Tools and commands work in the active window.

ALPHA CHANNELS A grayscale duplicate of an image on which you can store masks and selections.

ALT KEY The Alternate key, usually marked "Alt", that modifies an action when pressed.

ANCHOR POINT The starting or ending point of a path segment. Anchor points appear only when an object is in edit mode. When selected, anchor points of curve segments display one or two direction lines.

ANSI American National Standards Institute; one of the standards available to specify dimension object properties.



Anti-aliased line

ANTI-ALIAS To soften the edges of an applied brush stroke, effect or selection. When something is anti-aliased, the color on the edges fades to transparency instead of stopping abruptly.

ASCII American Standard Code for Information Interchange (pronounced "ASK-ee"); used for representing text inside a computer and for transmitting text between computers.

baseline example

BASELINE An imaginary line on which a line of text rests. The descenders of characters such as g, j, p, and q extend below the baseline.



Bevel join

BEVEL JOIN A style of connection between two segments in a vector object, in which the stroke lines appear to be trimmed diagonally.

BÉZIER CURVE A curve, named after French mathematician Pierre Bézier, defined by the position of *anchor points* and *tangent lines.*

BICUBIC An appropriate setting for image interpolation if you work primarily with photographs.

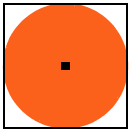
BILINEAR An appropriate setting for image interpolation if you work with line art. It may be applied to some photographic images.

BIND To align the baseline of text so it follows the contours of a path.

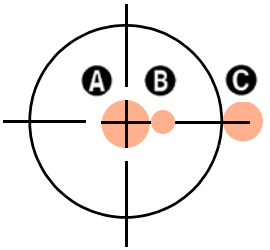
BITMAP A digital image composed of pixels (.bmp); technically, an image containing only black and white (see also "image," page G.7).



Vector (left) and bitmapped fonts



A bounding box of a circle



A Center length
B Center gap
C Center extension

BITMAPPED FONT A font made up of characters composed of pixels, rather than vector data. Fonts displayed on a computer screen are bitmapped fonts, for example, and usually aren't suitable for printing.

BLACK AND WHITE A method of digital imaging that uses pure black and pure white pixels. The frequency of black or white pixels create the illusion of shades.

BLEND A smooth transition of shape and color between two vector objects through intermediate objects created by Canvas.

BOUNDING BOX An invisible rectangle that defines the boundaries of an object. Canvas displays an object's bounding box when the object is selected.

BULLET A special text character, usually a filled circle (•), available in many fonts, especially symbol fonts.

BUTTON A pushbutton-like image in dialog boxes where you click to designate, confirm, or cancel an action.

CANVAS TEMPLATE A Canvas document that includes options and settings and is used as the basis for new documents.

CCITT Consultative Committee on International Telegraphy and Telephony; its standards include data transmission formats.

CENTER EXTENSION The distance that Center dimension lines extend beyond the dimensioned object.

CENTER GAP The space between a Center dimension crosshair and the lines that extend from it.

CENTER LENGTH The Center dimension crosshair length.

CHANNEL In digital images, a layer of primary color in a full-color image. For example, an RGB image has at least three color channels (one each for red, green, and blue) and a composite channel, which adds the three channels together to create a full-color image.

CHANNEL MASK A channel that creates transparency based on the the luminance of pixels in the channel. It can be applied to any type of object.

CHARACTER Any symbol, such as letters, numbers, and punctuation, that can convey information. Some characters can be displayed on the monitor screen and printed on a printer.

CHARACTER STYLE A set of attributes, such as color, typeface, and style, that can be applied as a group to text characters.

CLICK (v.) To position the pointer on something, and then press and quickly release the mouse (or other pointing device) button. (n.) The act of clicking.



Text used as a clipping path on a photo

CLIP ART Electronic pictures that you can use in documents. The term comes from using scissors to clip pictures on paper.

CLIPBOARD A holding place in system memory for the last information cut or copied from a document. You can paste information from the Clipboard into a document. Information remains on the Clipboard until replaced by another cut or copied selection.

CLIPPING PATH A vector or text object used to "clip" (hide) areas of another object that are outside of the clipping path.

CLOSED PATH A vector path that does not have separate starting and ending points.

CMYK COLOR A color system based on the four colors used in color printing: cyan, magenta, yellow, and black. Also, a color mode used to define colors in a digital image (see "process color," page G.11).

COLOR PALETTE A collection of colors used in a document, from which you can select colors to apply.

COLOR SEPARATIONS Computer files, printed output, or film, in which the colors in a document are divided into their primary or custom color components. Color separations are used to produce printing plates for commercial color printing (see "process color," page G.11 and "spot color," page G.12).

COLOR WHEEL A two-dimensional view of color showing hue and saturation. Hue is the position of a color on the circumference of the wheel. Moving clockwise and starting at twelve o'clock, the colors are yellow, red, magenta, blue, cyan, and green. Colors toward the center of the wheel have more gray than those near the edge.

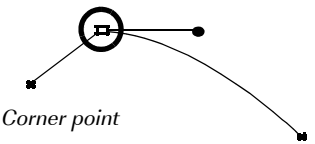
COLUMN GUIDES Non-printing lines that define text columns and gutters in a section.

COMBINE A command used to create new objects from the intersection of two or more vector objects.

COMPOSITE CHANNEL The combination of all color channels in an image. In the Channels palette, the first channel listed, identified by RGB, CMYK, LAB, or Black, depending on the image mode.

CONTROL PANEL A Windows system program that lets you change features of the operating system, such as settings for the display, keyboard, and networking.

CORNER POINT An anchor point where path segments meet at an angle, rather than with a smooth transition.



Corner point

CROP To trim an image to a specified rectangular area.

CROP MARKS Small lines placed at the page edge that mark where printed material will be trimmed.

CURRENT INK The ink, or color, that applies to new objects you draw, set by applying an ink when no objects are selected. This setting does not change when you set the ink for a specific object; e.g., if you set the current fill ink to red, new objects you draw will be filled with red. You can then change an object's color from red to green; however, the current ink remains red.

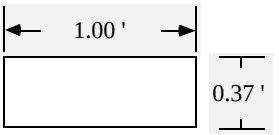
CURRENT STROKE The stroke that applies to new objects you draw, set by applying a stroke when no objects are selected; this setting does not change when you set the stroke for a specific object; e.g., if you set the current stroke to a 5-pt pen, new objects you draw will have a 5-pt pen width; however, if you then change an object's stroke from 5 to 10 pts, the current pen width remains 5 pts.

CUSTOM VIEW A recording of a screen position and magnification level in a Canvas document.

DECIMAL TAB A tab, represented by a decimal tab marker, that aligns columns of numbers at the decimal point position.

DESATURATE To increase the gray content of a color.

DIALOG BOX A box that an application displays to request information or to report that it is waiting for a process to complete.



Dimension objects

DIMENSION OBJECT Object created with the Dimensioning tool.

DIMENSION TEXT GAP The space between the dimension text and arrow.

DIN STANDARD Deutches Institut für Normung standard; one of several used to specify the properties of dimension objects.

DIRECTORY DIALOG BOX A type of dialog box you use to navigate a computer file system when you save or open a file (refer to system documentation for specifics).

DITHER To arrange pixels of several colors into patterns to give the appearance of a broader range of colors.

DOCUMENT The container for information and objects you work with in Canvas. Canvas has four types of documents — Illustration, Presentation, Publication, and Animation.

DOT GAIN In commercial printing, the amount of size increase of halftone dots caused by ink spreading on the printed medium.

DOUBLE-CLICK (v.) To press and release the button on a mouse (or other pointing device) twice in quick succession.

DPI Dots per inch; the unit of measurement of the resolution of a printing device.

DRAG To press and hold down the button on a mouse (or other pointing device), move the device, and then release the button.

DYNAMIC OBJECT A vector object that can be used to place copies of itself in documents; the copies remain linked to the original.

EMULSION Photosensitive coating on film or paper.

ENCAPSULATED POSTSCRIPT (EPS) A format for storing graphics and text in a file using the PostScript language. An EPS file can include a preview image (see "PostScript®," page G.10).

ESC KEY A keyboard key that lets you stop a procedure.

EXIF EXTENSION Short for Exchangeable Image File, a format that is a standard for storing interchange information in digital photography image files using JPEG compression.

EXTERNAL TOOLS Individual program modules that provide features, tools, and commands in the Canvas program.

FADE Gradual decrease of a painting tool effect until there is no noticeable change in the image; e.g., if "Fade Size within 32 steps" is selected in the Properties bar, the brush becomes smaller as you drag.

FILE Any named, ordered collection of information stored on a disk.

FILL INK The ink that Canvas applies to the inside, as opposed to the outline, of objects and text.

FILTERS A filter is an effect that can be applied to a paint image. Some filters mimic conventional photographic filters, but many transform images in unusual ways; e.g., the Oil Painting filter can make a digitized photograph look like an oil painting.

FLASH A bandwidth friendly and browser independent vector-graphic animation technology. As long as different browsers are equipped with the necessary plug-ins, Flash animations will look the same (see ".swf," page G.13).



Flat end cap

FLAT END CAP A style of stroke end in which the stroke end is squared off, perpendicular and flush to the end of the stroke.

FLOATING SELECTION An image area that "floats" above an image. Move and edit the floating selection without changing the underlying image until you defloat, or "drop," the selection on the image.

FOLDER A container for documents, applications, and other folders in the Windows file systems.

FONT A complete set of characters in one design, size, and style. In typography, a font can be restricted to a particular size and style (such as 10-point Helvetica) or can comprise multiple sizes, or multiple sizes and styles, of a typeface design.

FOOTER One or more lines of text that appear at the bottom of every page of a document. Once you specify the text that should appear in the footer, the application automatically inserts it.

FRAME (1) One illustration "page" in an animation. An Animation document contains a series of frames which are displayed in sequence to make an animation. (2) A technical term for the outline of an object or text, to which Canvas applies stroke settings, such as dashes.

FTP Abbreviation of File Transfer Protocol, the protocol used on the Internet for sending files.

GAMUT The range or extent of a color model's spectrum.

GIF Abbreviation for graphics interchange format, a bit-mapped graphics file format used primarily on the Web. GIF supports color and various resolutions. It also includes data compression, making it especially effective for scanned photos.

GRADIENT A gradual transition or blend between two or more colors. The direction and shape of a gradient can be radial, linear, elliptical, or shape-derived.

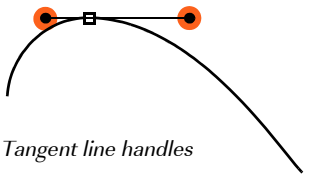
GRATICULE A grid of lines that display meridians of longitude and parallels of latitude.

GRAYSCALE An image mode that uses eight bits of information per pixel for up to 256 brightness levels, from black to white through shades of gray.

GROUP (v.) To associate two or more objects so they behave as a unified object; (n.) the resulting object.

GUIDES Non-printing lines to which objects can be aligned or even snapped.

HALFTONE A pattern of tiny black and white dots that appear to the human eye as shades of gray; a photograph or other image converted to such a pattern for commercial printing.



Tangent line handles

HANDLES (1) Small squares, usually at the corners and midpoints of an object's bounding box, displayed when an object is selected; you can drag handles to resize the object. (2) Small circles at the ends of tangent lines; you can drag a handle to change the length or angle of a tangent line.

HATCH PATTERN Object-based fill pattern made of line groups.

HEADER One or more lines of text that appears at the top of each page of a document. Once you specify the text that should appear in the header, the text is automatically inserted.

HIGHLIGHT To make something visually distinct. For example, when you select a block of text in Canvas, the selected text appears against a colored background.

HOTKEYS Single-letter keyboard commands that can be used while in image editing mode or vector editing mode

HTML Abbreviation for HyperText Markup Language, the authoring language used to create documents on the Web.

HUE A color's main characteristic; its name, as in blue, red, or orange, defined by its position on the color wheel.

I-BEAM A type of pointer shaped like the capital letter "I."

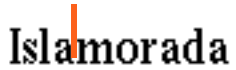
IMAGE A picture composed of pixels; referred to as a "raster image," "paint image" or "bitmap" (*see* "image mode," page G.7).

IMAGE MODE The system used to define colors in an image. Canvas image modes include Black and White, RGB Color, CMYK Color, Grayscale, Indexed, and LAB Color.

IMPORT To use any of several techniques to move graphics or text from another program into a Canvas document.

INDEXED A digital image mode that lets you specify a palette of up to 256 colors used in the image. Usually used for on-screen display and electronic distribution of images, because it requires less memory than RGB or CMYK color modes.

INK Colors, symbols, hatch patterns, textures, and gradients that can be applied to objects.



Insertion point

INSERTION POINT A blinking vertical line where text you type will appear in a text object or dialog box.

ISO STANDARD International Organization for Standardization; one of several standards used to specify the properties of dimension objects.

JIS STANDARD Japanese Industrial Standard; one of several used to specify the properties of dimension objects.

Discover how easy it is to create realistic looking images in just a few steps. These images could be used alone or combined with existing images to create complex designs.

Left alignment

Discover how easy it is to create realistic looking images in just a few steps. These images could be used alone or combined with existing images to create complex designs.

Right alignment

JPEG The abbreviation for Joint Photographic Experts Group. JPEG is a lossy compression technique for color images. Although it can reduce files sizes to about 5% of their normal size, some detail is lost in the compression.

JUSTIFICATION The method used to align paragraphs of text within a text object's margins, either left, right, center, or full.

KERNING Adjusting the normal space between characters in text; also, the amount of the adjustment.

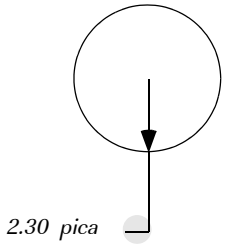
LAB COLOR An image mode in which the color components are divided into a lightness channel and A and B color channels.

LANDSCAPE Orientation of an illustration or page that is wider than it is tall.

LATITUDE The angular distance of a point on the earth's surface along a meridian north or south of the equator.



Text without kerning (top) and with kerning applied (bottom)



Leader character length



Oval used as a lens

Marquee tool

LAYER A level in a Canvas document used to organize parts of illustrations so they can be easily selected.

LAYOUT AREA The rectangular area on screen in a Canvas document, which represents the extent of the layout and may cover multiple printed pages, depending on the size of paper used for printing.

LEADER CHARACTER A character, usually a period (".") used to fill space between the character before a tab space and the character immediately following the tab space.

LEADER CHARACTER LENGTH The length of the horizontal portion of the witness line of a dimension object.

LEADING Space between lines of text, measured in points from the baseline of one line to the next.

LENS A special object which applies effects such as filters and magnification to an area in a document.

LIGHTNESS The amount of black or white in a color.

LINE GROUP A set of parallel lines in a hatch pattern that have identical properties.

LINE CAP The shape of the end of a pen stroke.

LINE JOIN The shape of the pen stroke where two path segments meet.

LONGITUDE The angular distance of a point on the earth's surface east or west of an arbitrarily defined meridian, usually the Greenwich meridian (Greenwich, England).

LPI Lines per inch; a measure of halftone screen resolution.

MARQUEE A selection in an image defined by a rectangular flashing border; also, the tool used to make a marquee selection.

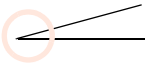
MASTER PAGE A special page in a Publication, Presentation, or Animation document. Items on the master page, slide, or frame are visible and print on every page in the document.

MASK A general term for objects or channels that limit that visibility of other objects, or that protect areas in an object or image from changes.

MASTER SLIDE A special slide in a Presentation document. Items on the master slide are visible and print on every slide in the document.

MEGABYTE (MB) A unit of measurement equal to 1024 Kilobytes, or 1,048,576 bytes.

MEMORY A hardware component of a computer system that can store information for later retrieval.



Miter join

MITER JOIN A style of connection between two segments in a vector object in which the stroke lines come together at a point.

MODIFIER KEY A general term for a key that changes the meaning of other keys or mouse actions; for example, Command, Control, Option, and Shift.

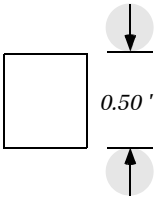
NTSC National Television Standards Committee; also, the standard video format defined by the NTSC, also called composite because it combines all the video information, including color, into a single signal.

OBJECT A discrete vector path, block of text characters, or raster image, contained within an invisible rectangular frame. You can select an object and perform standard operations on it, including move, copy, delete, cut, rotate, flip, and skew.

OBJECT PROPERTIES You can assign specific information to each component of a complex object. The properties of an object can include information that will allow you to efficiently track cost, inventory, location, and availablity.

OPACITY An attribute of all objects. Opacity with a value of 100% is non-transparent. Opacity values can be set from 1 to 100%.

OPEN PATH A path defined by separate starting and ending points.



Outside line length

OUTSIDE LINE LENGTH Dimension object arrow length, when the Arrows Inside option is not selected.

OVERPRINT A technique where two or more colors are printed on top of each other. For example, if you overprint yellow on blue, the combination appears green.

PAINT OBJECT An object that contains a raster image. The term is synonymous with image object.

PAINTING TOOL Any of several tools used to create or edit a paint object.

PALETTE A type of dialog box that can remain open on screen. A palette contains tools, attributes, or options for commands.

PALETTE ICON A Toolbox icon that opens a palette.

PARAGRAPH STYLE A set of attributes, such as font, leading, indents, and tab settings, that can be applied to a paragraph of text.

PATH One or more connected segments, generally created with a drawing tool, within a vector object. The path itself is invisible unless it has visible fill ink, or pen ink and stroke, applied to it.

PDF Abbreviation for Portable Document Format, a file format developed by Adobe Systems; PDF captures formatting information from a variety of desktop publishing applications, making it possible to send formatted documents and have them appear on the recipient's monitor or printer as they were intended. Canvas has PDF export capabilities.

PEN INK The colors and patterns applied to an object's stroke.

PICA A unit of measurement equal to 12 points or 1/6 of an inch, abbreviated "pc."

.PCT Abbreviation for Macintosh bitmap graphics (b&w PICT1 - color PICT2)

PIXEL Short for *picture element*; a single tiny dot of a raster image or a computer display.

PIXEL MODE This setting allows you to view graphics at 72 ppi before they are rendered. This gives you an exact preview of what the graphics will look like when they are rendered.

PLUG-IN A program module that can be used by Canvas to provide an additional image-editing function.

.PNG Abbreviation for Portable Network Graphics; for the Web, PNG really has three main advantages over GIF: alpha channels (variable transparency), gamma correction (cross-platform control of image brightness), and two-dimensional interlacing (a method of progressive display). For image editing, either professional or otherwise, PNG provides a useful format for the storage of intermediate stages of editing.

POINT A unit of measurement for type equal to 1/72 inch; abbreviated "pt."

POINTER A small shape that follows the movement of the mouse on screen or shows where your next action will take place. The pointer can be an arrow, an I-beam, or other shapes.

Polygon tool 

POLYGON A figure that has more than 4 sides. The Polygon and Smooth Polygon tools are used to create polygons in Canvas.

PORTRAIT The orientation of a page or illustration so that the height is larger than the width.

POSTSCRIPT® (1) An Adobe Systems, Inc. computer language that defines the appearance of printed type and images. (2) A type of font that relies on PostScript to be printed.

POSTSCRIPT PRINTER DESCRIPTION (PPD) A text file that provides information about a specific printer to the operating system and application programs (refer to operating system documentation for specifics).

PPI Pixels per inch; a measure of the resolution of an image.

PREFERENCES Preferences are options that let you customize the display, tools, and commands.

PRESS (1) To point to an item on screen and press and hold down the mouse button without moving the mouse. (2) To push a key down and then release it; you hold a key down only when using a modifier key with another key, for example, when instructed to *press Ctrl+A*.

PRINTER DRIVER A program that controls the exchange of information between the computer and a specific type of printer (refer to operating system documentation for specifics).

PROCESS COLOR The method for printing a full range of colors using only cyan, magenta, yellow, and black; also, any one of these colors. *Compare to* "spot color," page G.12.

PROJECTION A mathematical technique that converts and portrays features from a spherical surface onto a 2-D plane.

PROPERTIES BAR The area below the Menu bar that displays information on tools, document setup, and selected objects. You can also apply effects and filters via the Properties bar.

.PSD Extension used for Photoshop graphics files; Canvas can import .PSD files as well as export to that format.

RANDOM-ACCESS MEMORY (RAM) The part of the computer's memory that stores information temporarily while you're working.

RASTER IMAGE A picture made up of a matrix of pixels, created by digitizing or scanning an image, which is contained in a paint object (see "bitmap," page G.1).

Registration mark



REGISTRATION MARK A small mark, several of which are used together to align films and plates for commercial printing.

RGB COLOR Method of defining colors, based on combinations of the primary colors red, green, and blue. Also, a color mode for digital images.

RESOLUTION A measure of the amount of information in a digital image, expressed in pixels per inch (ppi); also, a measure of the smallest dot or pixel that can be used by a computer display or output device, expressed in dots per inch (dpi).

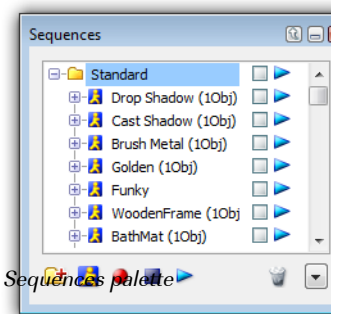
Round end cap



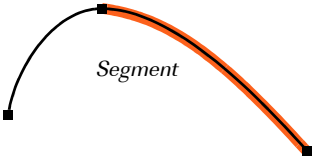
ROUND END CAP A style of stroke end, in which the end of the stroke is capped with a semicircle.

SATURATE To increase color intensity by removing gray.

SCANNER Any input device that converts printed matter, such as a photographic print or transparency, into digital data.



Sequences palette



SCRIPTING A script is a succession of commands that Canvas can execute automatically.

SECTION A rectangular area that arranges text in columns.

SEQUENCES An automated feature allows you to build and efficiently maintain a complete library of your Canvas-created design effects.

SHIFT KEY A key that, when pressed, causes the subsequent letter you type to appear in uppercase or the top symbol on a two-character key to be produced. The Shift key can also modify mouse actions.

SEGMENT A line or curve between two endpoints in a path.

SELECTION The information or items that will be affected by the next command, including objects or a series of characters.

SELECTION BOX A dashed rectangle that appears as you drag a Selection tool over objects to select them.

SEPARATIONS See “color separations,” page G.3.

SLICE A slice is a rectangular area of an image that becomes a cell in an HTML table. The HTML table is then exported to be placed onto a Web page.

SLIDE SHOW The display of different screens of information — “slides” — in sequence. Canvas changes the screens after a set time interval or when you click the mouse. You can also create self-running slide shows for the Windows platform (.EXE).

SMART POINTER A pointer symbol representing the Smart Mouse constraint that is in effect.

SMOOTH POLYGON A polygon with rounded segments and corners (see “polygon,” page G.10).

SNAP GRID A grid of horizontal and vertical lines you can display. The pointer can snap into alignment with the snap grid.

SPACEBAR The long, unlabeled bar in the bottom row of keys on a computer keyboard that you press to insert space between characters.

SPACING .GIF A one-pixel wide transparent GIF image used as a spacer to be used to fill all empty cells in a HTML table.

SPOT COLOR Customized color representing a particular ink that will be used to print the color (see “process color,” page G.11).

SPRITEEFFECTS A Canvas technology that lets image-editing effects, such as blur and curves, be applied to any type of object.

SPRITELAYER A Canvas technology that provides transparency effects, including opacity and transparency masks.



Square end cap

SQUARE END CAP A style of stroke end, in which the end of the stroke is squared off and extends half the line width beyond the endpoint of the path.

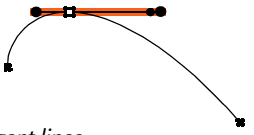
STATUS BAR The area at the bottom of the Canvas window or the screen that displays information on tools, the position of the pointer, and selected objects.

.SWF Extension for Flash files; you can create an .SWF file that you can edit in the Macromedia Flash application or that you can use in a Macromedia Flash player or compatible browser.

SYMBOL INK A repeating pattern, created from vector objects, that can be applied to vector objects and text as a fill ink or stroke ink.

SYMMETRICAL DRAG Enables you to drag selected control points of an object and resize the object's shape from its center.

TAB KEY A keyboard key that moves the insertion point to the next tab marker, or to the next place to enter information in a dialog box. The Tab key is also used as a modifier key.



Tangent lines

TANGENT LINE Line passing through an anchor point on a vector path; visible when the path is in edit mode and an anchor point with tangent lines is selected. Its angle and length affect the shape of adjacent segments.

TEMPLATE See "Canvas Template," page G.2.

TEXT BACKGROUND INK An ink applied to the background of a text object or text selection.

TEXT ENCODING When exporting Canvas files that contain text to HTML, text can be encoded so that the HTML output is always valid. Choose between Western and Unicode encoding.

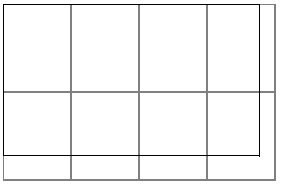
TEXT FRAME INK An ink applied to the bounding box of a text object or a box around a text selection.

TEXT FRAME STROKE A stroke applied to the bounding box of a text object or a box around a text selection. The text frame ink appears on the text frame stroke.

TEXT OBJECT An object containing text.

TEXT BOX A place in a dialog box where you can type information.

TEXT FILE A file that contains information stored in the form of readable characters encoded in ASCII format.



Tiling



Rectangle with an Overlay Transfer Mode



Elliptical vector mask applied to an oval

TEXTURE INK A repeating pattern, created from a raster image, that can be applied as a fill ink or pen ink.

.TIFF Acronym for Tagged Image File Format (also .TIF); these graphics can be any resolution, and they can be black and white, grayscale, or color.

TILING Dividing a large illustration into multiple pages, or "tiles," for printing on a desktop printing device.

TOLERANCE In image editing, a value that sets the threshold for similarity between colors before an effect occurs; e.g., if the Wand tool tolerance is set to 0, it selects only pixels of the exact same color. If the tolerance is set higher, the tool selects pixels of similar colors.

TOLERANCE SIZE SCALE Size of tolerance text in a dimension in proportion to the dimension text.

TOLERANCE SPACE SCALE Amount of space (leading) between tolerance text in dimensions with two tolerance measurements.

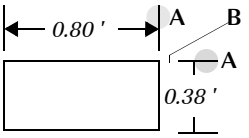
TRANSFER MODE Method by which a color blends with a background color. Transfer modes, found on the Transparency palette, include Normal, Multiply, Screen, Overlay, Soft Light, Hard Light, etc.

URL Abbreviation of Uniform Resource Locator, the global address of documents and other resources on the Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located.
An example of a URL is http://www.canvas9.com.

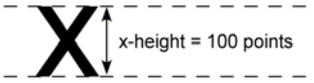
VBSCRIPT Abbreviation for Visual Basic Scripting Edition, a scripting language developed by Microsoft and supported by Internet Explorer. VBScript is based on the Visual Basic programming language, but is much simpler. In many ways, it is similar to JavaScript. VBScript enables Web authors to include interactive controls, such as buttons and scrollbars, on their Web pages.

VECTOR MASK A SpriteLayer effect that applies transparency to an object based on a gradient from opaque to transparent.

VECTOR OBJECT An object defined by anchor points and a path. The Line, Rectangle, Oval, Arc and similar tools draw vector objects.



A Witness extensions
B Witness gap



WINDOWS (1) The brand name of a family of Microsoft operating systems, including Windows ME, 2000, and XP. (2) The separate areas on screen in which programs display information.

WITNESS EXTENSION Part of the witness line that extends beyond the dimension arrows.

WITNESS GAP Space between an object and dimension witness lines.

WRAP To change text margins so text flows around or remains inside a vector object.

X-HEIGHT The height of a lowercase *x* in a given font; the height, measured from the base line, of the main portion of most lowercase letters in a font, excluding ascenders and descenders.

ZOOM To increase or decrease the magnification of a document.

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