



Getting Started Guide

Chapter 8

Getting Started with Draw

OpenOffice.org's Vector Drawing Component

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What is Draw?

Draw is a vector graphics drawing program. It offers a series of powerful tools that enable you to quickly create all sorts of graphics. Vector graphics store and display an image as vectors (two points and a line) rather than a collection of pixels (dots on the screen). Vector graphics allow for easier storage and scaling of the image.

Draw is perfectly integrated into the OpenOffice.org suite, and this makes exchanging graphics with all components of the suite very easy. For example, if you create an image in Draw, reusing it in a Writer document is as simple as copying and pasting. You can also work with drawings directly from within Writer and Impress, using a subset of the functions and tools from Draw.

Draw's functionality is very extensive and complete. Although it was not designed to rival high-end graphics applications, Draw possesses more functions than the majority of drawing tools that are integrated into office productivity suites.

A few examples of drawing functions might whet your appetite: layer management, magnetic grid point system, dimensions and measurement display, connectors for making organization charts, 3D functions enabling small three-dimensional drawings to be created (with texture and lighting effects), drawing and page style integration, and Bézier curves, to name a few.

This chapter introduces some of Draw's features, but it does not attempt to cover all of them. See the *Draw Guide* and the application Help for more information.

The Draw workplace

The main components of the Draw interface are shown in Figure 1.

You can surround the drawing area with toolbars and information areas. The number and position of the visible tools vary with the task at hand or user preferences. Therefore, your setup may appear a little different. For example, many people put the main Drawing toolbar on the left-hand side of the workspace, not at the bottom as shown here.

You can split drawings in Draw over several pages. Multipage drawings are used mainly for presentations. The *Pages* pane, on the left side of the Draw window in Figure 1 gives an overview of the pages that you create. If the Pages pane is not visible on your setup, you can enable it from the View menu (**View > Page Pane**). To easily make changes to the page order, drag and drop one or more pages.

Rulers

You should see rulers (bars with numbers) on the upper and left-hand side of the workspace. These show the size of a selected object on the page (see the gray double lines, highlighted in). When no object is selected, they show the location of the mouse pointer, which helps to accurately position drawing objects. You can also use the rulers to manage object handles and guide lines, making it easier to position objects. The page margins in the drawing area are also represented on the rulers.

You can change the margins directly on the rulers by dragging them with the mouse.

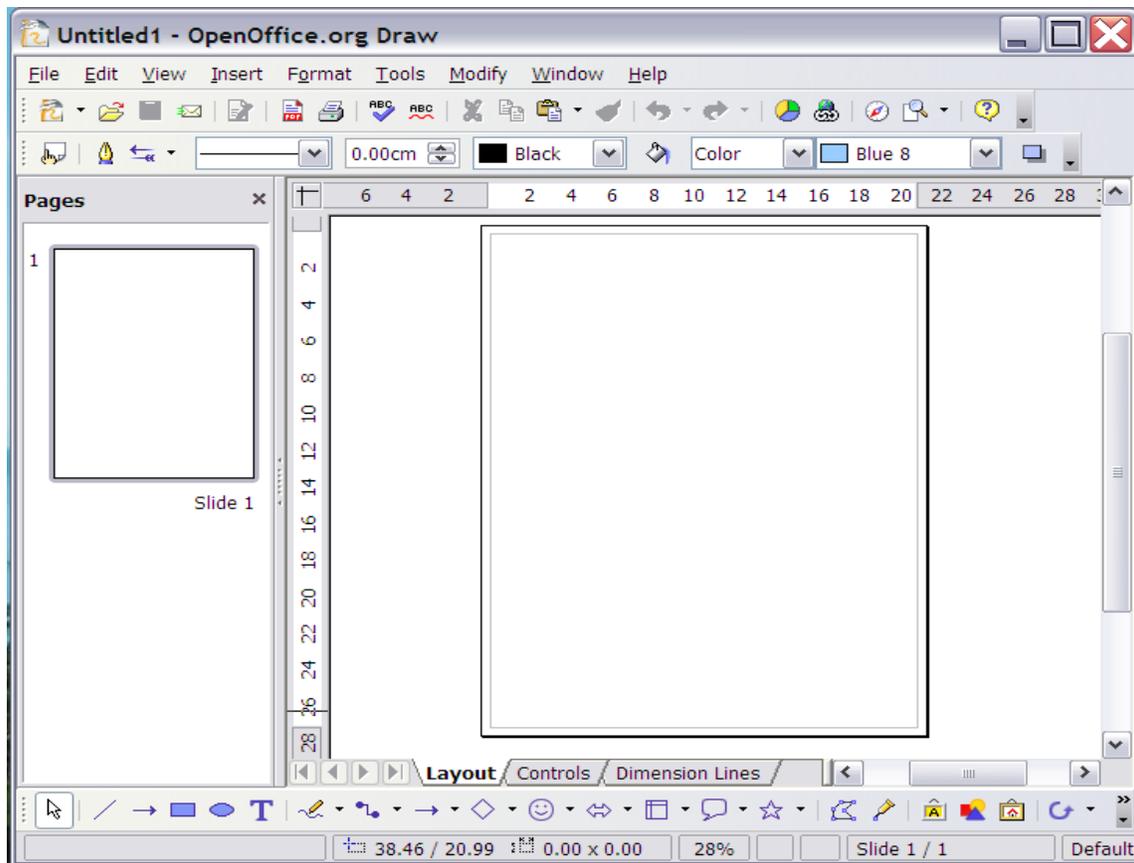


Figure 1. Initial Draw window

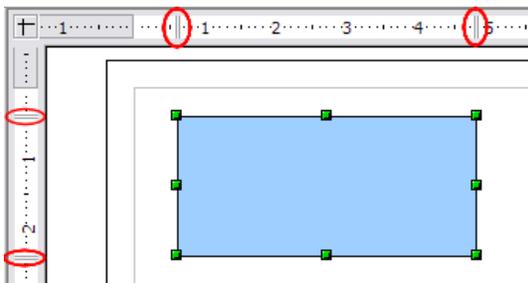


Figure 2: Rulers show the size of the selected object

To modify the units of measurement of the rulers, right-click on one of the rulers. The two rulers can have different units.

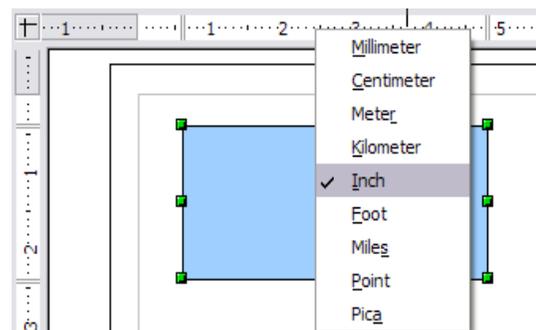


Figure 3. Rulers in a drawing

Status bar

The Status bar is located at the bottom of the workspace. The middle part of the Status bar shows Draw-specific fields, as identified in Figure 4.

For details on the contents and use of these fields, please refer to the *Draw Guide*.

Note The sizes are given in the current measurement unit (not to be confused with the ruler units). This unit is defined in **Tools > Options > OpenOffice.org Draw > General**, where you can also change the scale of the page. Another way to change the scale is to double-click on the number shown in the status bar.

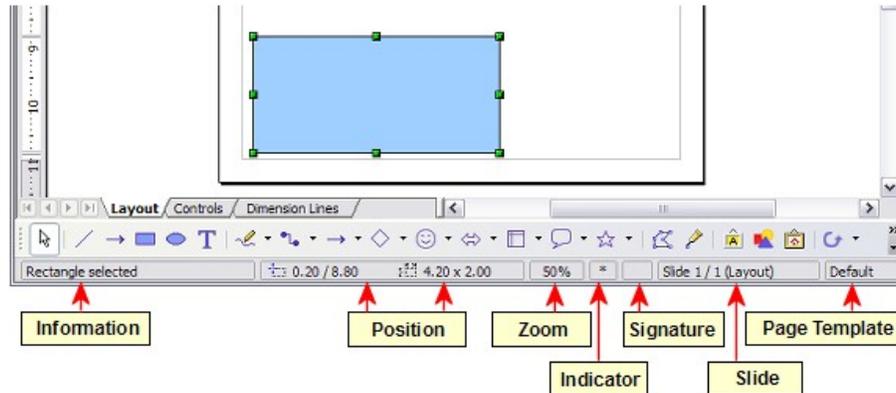


Figure 4: Items on the Draw status bar

Toolbars

The various Draw toolbars can be displayed or hidden according to your needs.

To display or hide the toolbars, click **View > Toolbars**. On the menu that appears, choose which toolbars you want to display.

You can also select the buttons that you wish to appear on the corresponding toolbar. On the **View > Toolbars** menu, select **Customize**, click on the **Toolbars** tab, select the toolbar you want to change, and then select the desired buttons for that toolbar. Each toolbar has a different list of buttons. See Chapter 4 (Menus and Toolbars) for more information.

Many toolbar buttons are marked with a small arrow beside the button. The arrow indicates that this button has additional functions. Click the arrow and a submenu or floating toolbar appears, showing its additional functions (see Figure 5).

You may wish to keep this submenu displayed on your screen, but in a different position. You can make a submenu into a *floating toolbar*. To do so, click the area at the top of the submenu, drag it across the screen, and then release the mouse button. Floating toolbars can be docked on an edge of the screen or within one of the existing toolbar areas at the top of the screen, as described in Chapter 4.

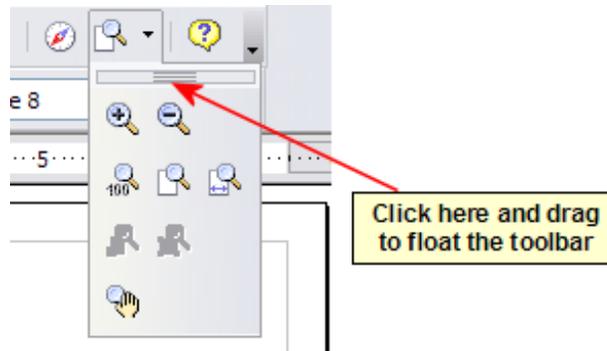


Figure 5. An arrow next to a button indicates additional functions

Note Most buttons marked with the small arrow can become floating toolbars. The floating toolbar capability is common to all components of the OpenOffice.org suite.

Click the arrow on the title bar of a floating toolbar to display additional functions (see Figure 6).

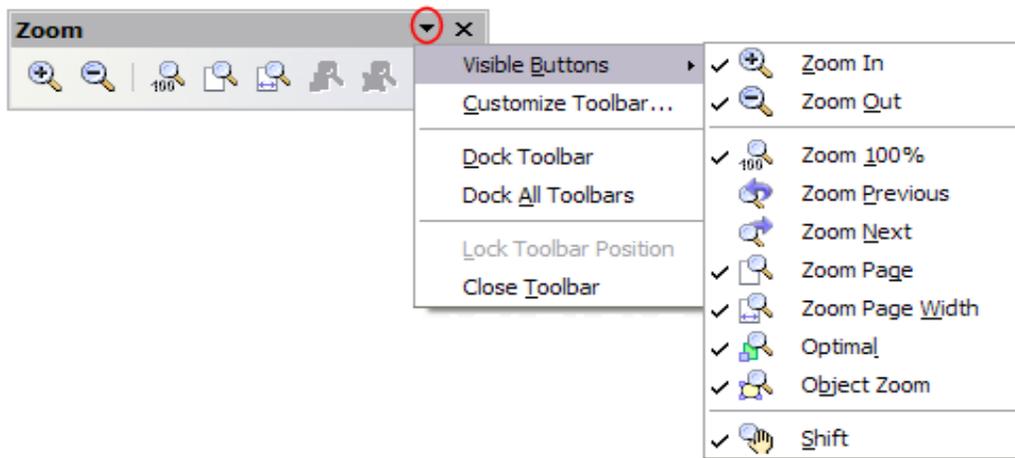


Figure 6. An arrow on a floating toolbar indicates additional functions

The tools available in the various toolbars are explained in the following sections.

Standard toolbar

The Standard toolbar looks like this:



It is the same for all parts of OpenOffice.org.

Line and Filling toolbar

The Line and Filling toolbar lets you modify the main properties of a drawing object. See page 19 for details.



If the selected object is text, the toolbar changes to the one shown below, which is similar to the Formatting toolbar in Writer.



Drawing toolbar

The Drawing toolbar is the most important toolbar in Draw. It contains all the necessary functions for drawing various geometric and freehand shapes and organizing them on the page.



Color Bar

To display the Color Bar, use **View > Toolbars > Color Bar**. The toolbar then appears at the bottom of the workspace.



This toolbar lets you rapidly choose the color of the objects in your drawing. The first box in the panel corresponds to transparency (no color).

You can access several specialized color palettes in Draw, as well as change individual colors to your own taste. This is done using the Area dialog, reached by choosing **Format > Area** or the *pouring can* icon on the Line and Filling toolbar.

On the Area dialog, choose the tab marked **Colors**.

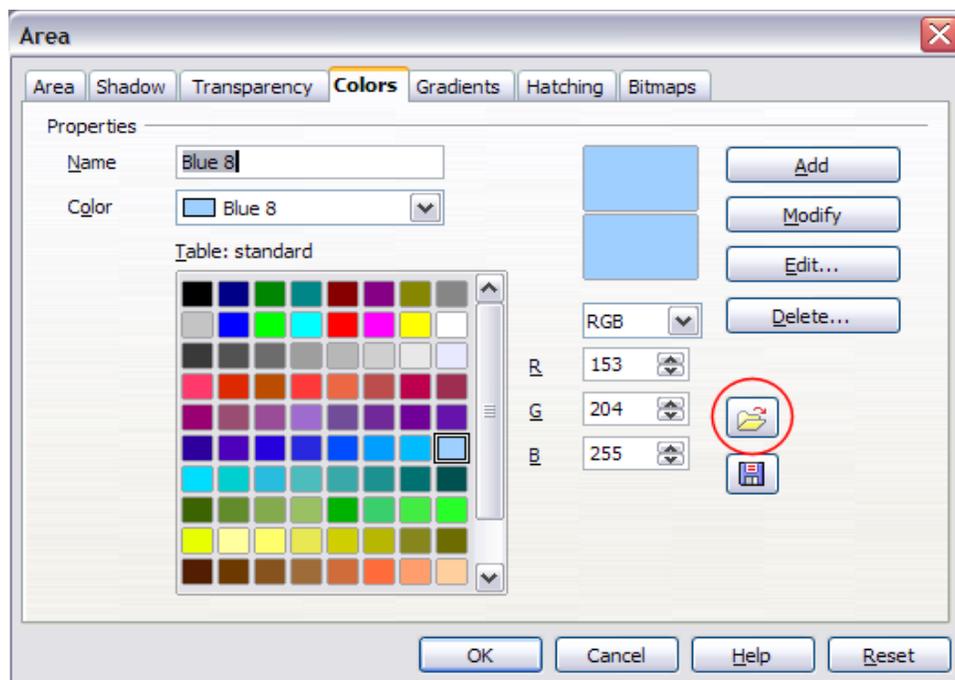


Figure 7. Changing the color palette

To load another palette, click on the **Load Color List** button (circled). The file selector dialog asks you to choose one of the standard OOo palettes (files bearing the file extension *.sdc). For example, **web.sdc** is a color palette that is adapted to creating drawings that are going to appear in Web pages. The colors will correctly display on workstations with screens displaying at least 256 colors.

The color selection box also lets you individually change any color by modifying the numerical values in the fields provided to the right of the color palette. You can use the color schemes known as CMYK (Cyan, Magenta, Yellow, Black), RGB (Red, Green, Blue) or HSB (Hue, Saturation, Brightness).

For a more detailed description of color palettes and their options, see Chapter 8 (Tips and Tricks) in the *Draw Guide*.

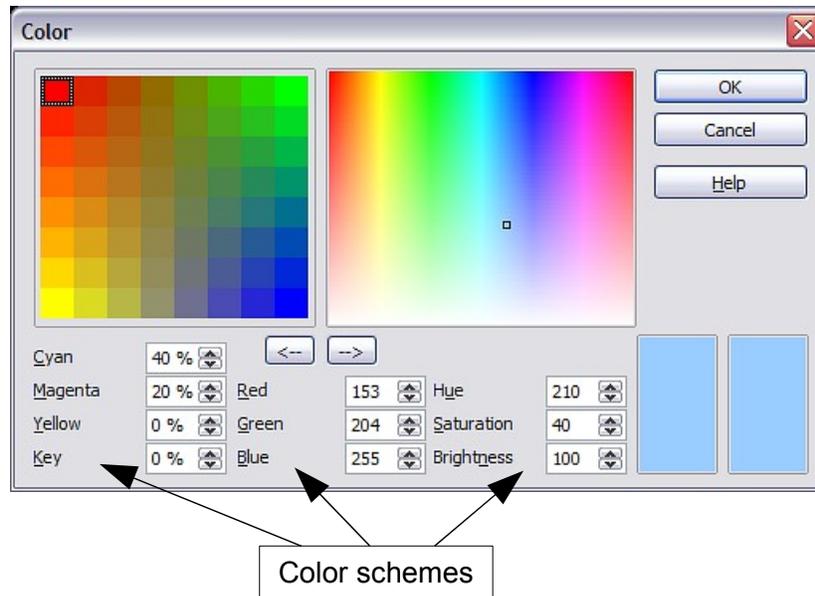


Figure 8. Defining color schemes

Options toolbar

The Options toolbar lets you activate or deactivate various drawing aids. The Options toolbar is not displayed by default. To display it, select **View > Toolbars > Options**. The most important options to learn when starting to work in Draw are enclosed in red. The functions of the various icons are described in Table 1.



Figure 9: Options toolbar

Table 1: Functions on the Options toolbar

Icon	Function
	Rotation Mode after Clicking Object
	Display (or hide the) Grid
	Display (or hide the) Guides
	Display (or hide Guides) When Moving
	Snap to Grid
	Snap to Guides
	Snap to Page Margins
	Snap to Object Borders
	Snap to Object Points
	Allow Quick Editing
	Select Text Area Only
	Double-click to edit Text
	Simple Handles
	Large Handles
	Create Object with Attributes
	Picture Placeholders
	Contour Mode
	Text Placeholders
	Line Contour Only
	Exit All Groups

Positioning objects with snap functions

In Draw, objects can be positioned to grid points, to special snap points and lines, to object frames, to single object points, or to page edges. This function is known as *Snap*. In this manner objects can be very accurately positioned in a drawing.

If you want to use the snap function, it is much easier to work with the highest practical zoom value. It is possible to use two different snap functions at the same time, for example snap to a guide line and to the page edge. It is best, however, to activate only those functions that you really need.

This section describes the snap-to-grid function. For more information about this and the other snap functions, see Chapter 8 (Tips and Tricks) and Chapter 10 (Advanced Draw Techniques) in the *Draw Guide*.

Snap to grid

Use this function to move an object exactly to a grid point (see). This function can be switched on and off with **View > Grid > Snap to Grid** and on the Options toolbar with the icon .

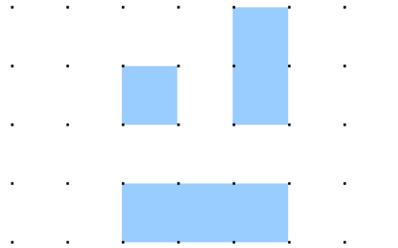


Figure 10: With snap to grid, objects align to the grid precisely.

Showing the grid

Make the grid visible under **View > Grid > Display Grid**. Alternatively turn the grid on and off with the icon  on the Options toolbar.

Configuring the grid

The color, spacing, and resolution of the grid points can be individually chosen for each axis. The spacing between the lines is defined in the Grid options dialog under the Drawing area of the OOo options (**Tools > Options > OpenOffice.org Draw > Grid**). In the dialog shown in Figure 11, you can set the following parameters:

- Vertical and horizontal spacing of the dots in the grid. You can also change the unit of measurement used in the general Draw options (**Tools > Options > OpenOffice.org Draw > Grid > General**).
- The resolution is the size of the squares or rectangles in the grid. If the resolution is Horizontal 1cm, Vertical 2cm, the grid consists of rectangles 2cm high and 1cm wide.
- Subdivisions are additional points that appear along the sides of each rectangle or square in the grid. Objects snap to subdivisions as well as to the corners of the grid.
- The pixel (pix element) size of the snap area defines how close you need to bring an object to a snap point or line before it will snap to it.

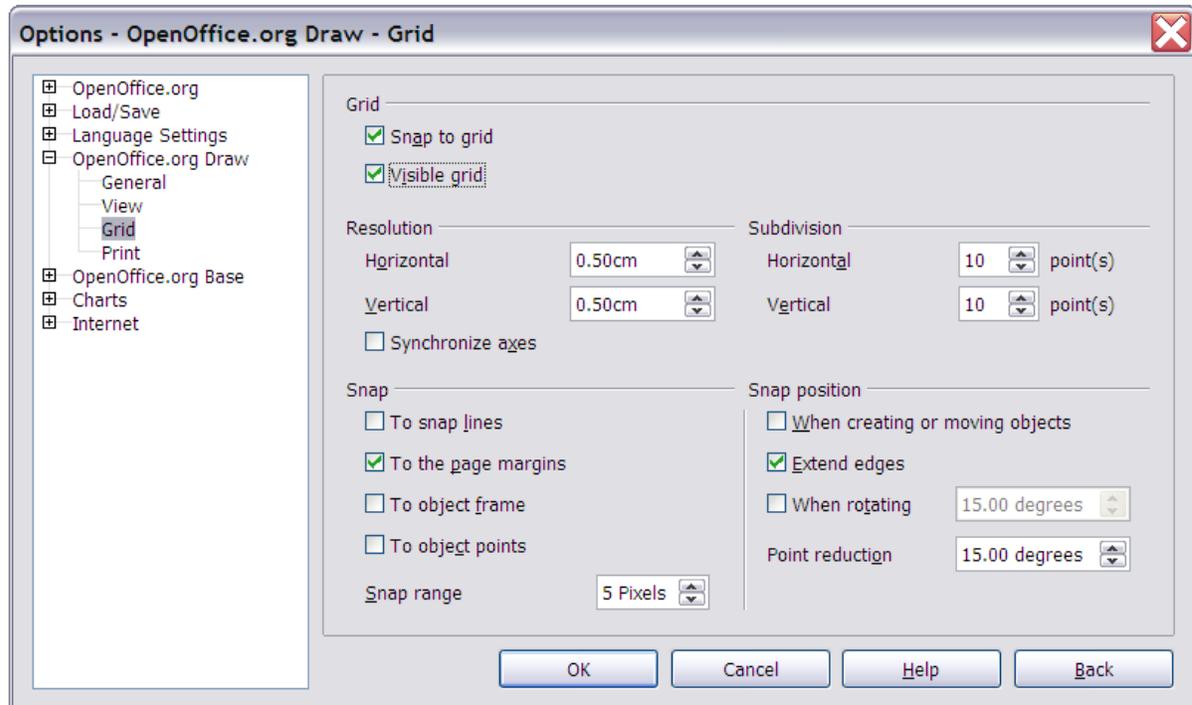


Figure 11. Setting grid options

Changing the color of the grid points

The default grid dots are light gray, which can be hard to see. To improve visibility, go to **Tools > Options**, then **OpenOffice.org > Appearance** (Figure 12).

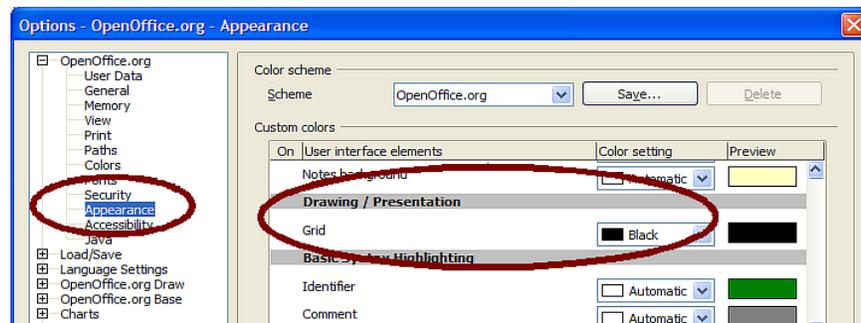


Figure 12: Changing the grid color

In the *Drawing / Presentation* section, you can change the color of the grid points. On the *Color Settings* pulldown menu, select a more suitable/visible color, for example black.

Positioning objects with helper lines

To simplify the positioning of objects it is possible to make visible guiding lines—extensions of the edges of the object—while it is being moved. These guiding lines have no snap function.

The guiding lines can be (de-)activated under **Tools > Options > OpenOffice.org Draw > View > Guides when moving**, or by clicking on the  icon on the *Options* toolbar.

The basic drawing shapes

Draw provides a wide range of shapes, located in palettes accessed from the Drawing Toolbar. This chapter describes only a few of the basic shapes; see the *Draw Guide* for a complete description of the shapes available. These shapes include rectangles and squares; circles, ellipses, and arcs; 3D objects; curves; lines and arrows; text; and connectors.

Drawing a straight line

Let's start by drawing the simplest of shapes: a straight line. Click on the Line icon on the Drawing Toolbar  and place the mouse cursor at the point where you wish to start drawing. Drag the mouse while keeping the button pressed down. Release the mouse button when you want to stop drawing the line.

A blue or green handle point appears at each end of the line, showing that this is the currently selected object. The colors depend on the default selection mode (green for simple selection and blue when in point edit mode).

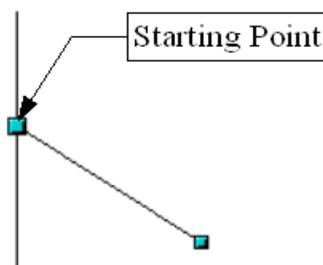


Figure 13: Drawing a straight line

Hold down the *Shift* key while drawing the segment to force the line to be drawn at a multiple of 45° from the horizontal.

Hold down the *Control* key (*Ctrl* in PCs) to snap to the nearest grid point.

Hold down the *Alt* key to draw the line symmetrically from the start point (the line extends out to both sides of the start point equally). This lets you draw straight lines by starting from the middle of the line.

The line just drawn has the default attributes (such as color and line type). To change the line attributes, click on the line to select it and then use the tools in the Line and Filling toolbar; or for more control, right-click on the line and choose **Line** to open the Line dialog.

Drawing an arrow

Arrows are drawn like lines. Draw classifies arrows as a subgroup of lines: Lines with arrowheads. They are shown in the information field on the status bar only as lines. Click on the **Line Ends with Arrow** icon  to draw an arrow.

Drawing a rectangle or square

Drawing rectangles is similar to drawing straight line segments, except that you use the Rectangle button  from the Drawing Toolbar. The (imaginary) line drawn with the mouse corresponds to the diagonal of the rectangle. In addition, you will see the outline of the future rectangle change in shape as you drag the mouse around. The outline is shown as a dashed line until you release the mouse button, when the rectangle is drawn.

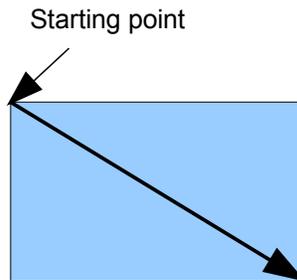


Figure 14: Drawing a rectangle

Hold down the *Shift* key to draw a square. Hold down the *Alt* key to draw a rectangle starting from its center. To combine the effects, hold down both the *Shift* and *Alt* keys simultaneously.

Drawing a circle or ellipse

To draw an ellipse (also called an oval) or circle, use the Ellipse Button  from the Drawing Toolbar (a circle is simply an ellipse where the two axes are the same length). The ellipse drawn is the largest ellipse that would fit inside the (imaginary) rectangle drawn with the mouse.

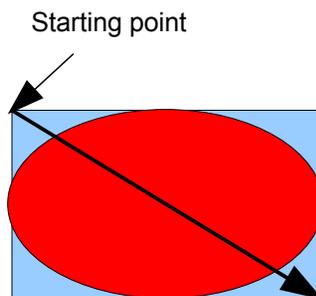


Figure 15: Drawing an ellipse

There are three other ways to draw an ellipse or circle:

- Hold down the *Shift* key while drawing to force the ellipse to be a circle.
- Hold down the *Alt* key to draw a symmetrical ellipse or circle from the center instead of dragging corner to corner.
- Hold down the *Ctrl* key while drawing to snap the ellipse or circle to grid lines.

Note If you first press (and hold) the *Control* key before clicking on any of these buttons (Line, Rectangle, Ellipse, or Text), the chosen object appears directly on the page with a default size, shape, and color. All of these can then be changed.

Writing text

Use the Text tool **T** to write text and select the font, color, size, and other attributes. Click on an empty space in the workspace to write the text at that spot or drag an area to write inside the dragged frame. Press *Enter* to drop to the next line.

When you have finished typing text, click outside the text frame. Double-click on the text at any time to edit it.

When you type text, the upper toolbar includes the usual paragraph attributes: indents, first line, and tab stops.

You can change the style of all or part of the text. The Styles and Formatting window also works here (select **Format > Styles and Formatting** or press *F11* to launch), so you can create Graphics styles that you can reuse for other text frames. Graphics styles affect all of the text within a text frame. To style parts of the text, use direct formatting with the toolbar.

Text frames can also have fill colors, shadows, and other attributes, just like any other Draw object. You can rotate the frame and write the text at any angle. These options are available by right-clicking on the object.

Use the Callout tool, located on the Drawing toolbar, to create callouts (also known as captions or figure labels).

If you double-click on an object or press *F2* (or the **Text** icon in the Drawing toolbar) when an object is selected, text is written in the center of the object and remains within the object. Nearly any kind of object contains such an additional text element. These texts have slight differences to those in text frames concerning position and hyphenation.

For more about text, see Chapter 2 (Drawing Basic Shapes) and Chapter 10 (Advanced Draw Techniques) in the *Draw Guide*.

Using connectors

Connectors are a type of line or arrow whose ends stick to *glue points* on other objects. When you move the other object, the connector moves with it. Draw has a range of advanced connector functions. You can change connector types using the context menu.

Connectors are particularly useful for making organizational charts. You can reorganize the blocks of your chart and all the connected objects stay connected.

Glue points are different from handles (the small blue or green squares around an object). Use the handles to move or resize an object; use the glue points to attach connectors to an object.

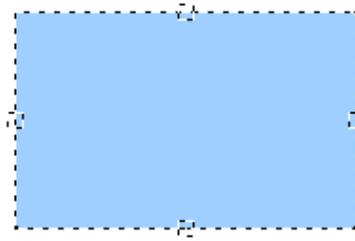


Figure 16: Four gluepoints

Gluepoints are different from handles (the small blue or green squares around an object). Use the handles to move or resize an object; use the gluepoints to attach connectors to an object.

You can add more gluepoints, and customize gluepoints, using the toolbar of the same name.

Gluepoints become visible when you click the **Gluepoints** icon  on the Drawing toolbar and then move the end of a connector over the object.

Figure 17 shows two Draw objects and a connector.

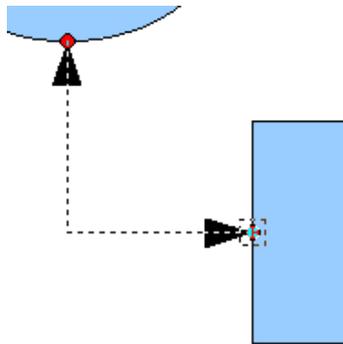


Figure 17: A connector between two objects

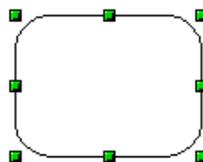
For more about connectors and gluepoints, see Chapter 9 (Organization Charts, Flow Diagrams, and More) in the *Draw Guide*.

Selection modes

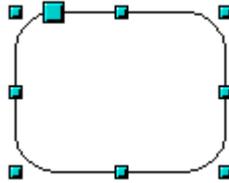
There are three selection modes: moving and changing size, rotating, and editing points.

The default mode for selecting objects depends on whether the **Points** button on the Drawing toolbar is active (appears lit)  or not inactive (appears dark or dimmed) .

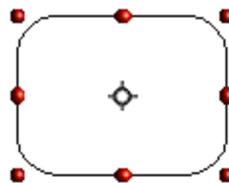
In standard mode (when you begin a new drawing), the **Points** button is not active, and the default mode is for selections to be moved or changed in size; these selections are indicated by small green squares.



When the **Points** button is active, the default mode is for selections to be edited; these selections are indicated by blue squares. Some objects will have one or more extra handles, which are larger or colored differently. This is explained in more detail in the *Draw Guide*.



Selections for rotating objects are indicated by small red circles and a symbol representing the center of rotation. To choose these selections, click on the **Effects** drop-down button  from the Drawing toolbar.



Changing the selection mode

To go from one mode to another, you can do one of the following:

- Toggle the **Points** button on the Drawing toolbar to switch from the simple selection mode to the Points mode . You can also use the keyboard shortcut *F8* (Points).
- Choose the **Effects** drop-down button from the Drawing toolbar  to activate the Rotation mode for a selected object.
- If you often work in Rotation mode, you can choose the **Rotation Mode after Clicking Object** button  from the Options bar, you can cycle through normal and rotation modes just by clicking on the object. This can be more convenient than clicking the object, then clicking the **Rotate** button from the Drawing Toolbar.

Selecting objects

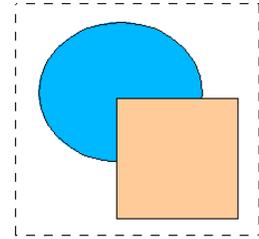
Direct selection

To select an object, the easiest way is to click directly on it. For objects that are not filled, you have to click directly on the object's outline to select it.

Selection by framing

You can select several objects by using the mouse to drag a large rectangle around the objects, as shown. For this to work, the **Select**  icon on the Drawing toolbar must be active.

Only objects that lie entirely within the rectangle are selected.



Selecting hidden objects

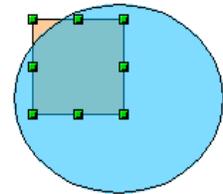
Even if objects are located behind others and not visible, they can still be selected. To select an object that is covered by another object, hold down the *Alt* key and click the object. To select an object that is covered by several objects, hold down the *Alt* key and click through the objects until you reach the required underlying object. To cycle through the objects in reverse order, hold down the *Alt+Shift* keys when you click. To help in making accurate selections, you can check the number and type of the selected objects, shown at the left of the status bar.

Note There may be some variation in the use of the *Alt* key on different operating systems. In general the *Alt* key on a Windows computer functions as described above, but on a Linux system it usually does not. If the *Alt* key on your system does not operate as described above, use the *Tab* key method described below.

To select an object that is covered by another object using the keyboard, press *Tab* to cycle through the objects, stopping at the object you wish to select. To cycle through the objects in reverse order, press *Shift+Tab*. This may not be practical if you have a large number of objects in your drawing.

When you click on your selected object, its outline will appear briefly through the objects on top of the selected object.

In the illustration to the right, the square located beneath the circle was selected in this way (the circle was made transparent in order to see the square).



Arranging objects

In a complex drawing, you may have objects stacked up, one on top of the other, with the result that a particular object is hidden by one or more other objects above it. You can rearrange the stacking order of objects (move an object to the front or to the back of the stack) by selecting the object, clicking **Modify > Arrange** and selecting the appropriate **Bring Forward** or **Send Backward** option, or by right-clicking the object and selecting **Arrange** from the context menu, then selecting from the list of **Bring Forward** or **Send Backward** options.

On the Drawing toolbar, the Arrange tear-off menu on the  button contains the above options. A keyboard shortcut is *Shift+Ctrl++* to bring an object to the top, and *Shift+Ctrl+-* to send an object to the bottom.

Draw also provides tools for aligning multiple objects; details are given in the *Draw Guide*.

Selecting several objects

To select or deselect several objects one by one, press the *Shift* key and click on the various objects to be selected or deselected. One click on an object selects it; a second click deselects it.

Moving and dynamically adjusting an object's size

There are several ways of moving or changing the size of an object. The method described here will be called *dynamic* in the sense that it is carried out using the mouse.

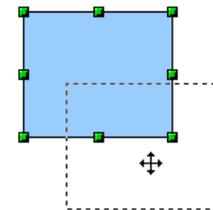
When you dynamically change an object, remember to check the central area of the status bar at the bottom of your screen. This area shows detailed information about the ongoing manipulation. For example, during a resizing manipulation, you will see the following information displayed. This information changes when the mouse is moved.



Dynamic movement of objects

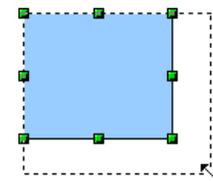
To move an object, select it and then click within the object's border and hold down the left mouse button while moving the mouse. During movement, the shape of the object appears as dotted lines to help with repositioning.

To drop the object at its new location, let go of the mouse button. During movement, the shape of the object appears as dotted lines to help with repositioning.



Dynamic size modification of objects

To change the size of an object (or group of selected objects) with the mouse, you need to move one of the handles located around the selection. As shown in the following illustration, the outline of the resulting new object appears as a dotted line.



The results differ depending on which handle you use. If you choose a corner handle, you will resize the object along two axes at the same time. If you use a side handle, the objects will only be resized along one axis.

Note If you press the *Shift* key at the same time as you carry out the resizing operation, the size change will be carried out symmetrically with respect to the two axes; this enables you to keep the aspect (height/length) ratio of the object.

Special effects

With Draw, you can apply many special effects to objects and groups of objects. This section describes a few of these effects. Others include distorting, shadows, and transparency. See the *Draw Guide* for examples of the many effects available.

Rotation

Rotating an object lets you move the object around an axis. To do this dynamically, use the red handles, as you do when changing the size of the object.

Note Rotation works in a slightly different way for 3D objects because the rotation occurs in 3D space and not in one plane. See Chapter 7 (Working with 3D Objects) in the *Draw Guide* regarding rotation when Edit Points mode is active.

To rotate an object (or a group of objects), drag the red corner handle points of the selection with the mouse. The mouse cursor takes the shape of an arc of a circle with an arrow at each end. A dotted outline of the object being rotated appears and the current angle of rotation is dynamically shown in the status bar.

Rotations are made about an axis which is displayed as a small symbol. You can move the axis of rotation with the mouse, as shown below.

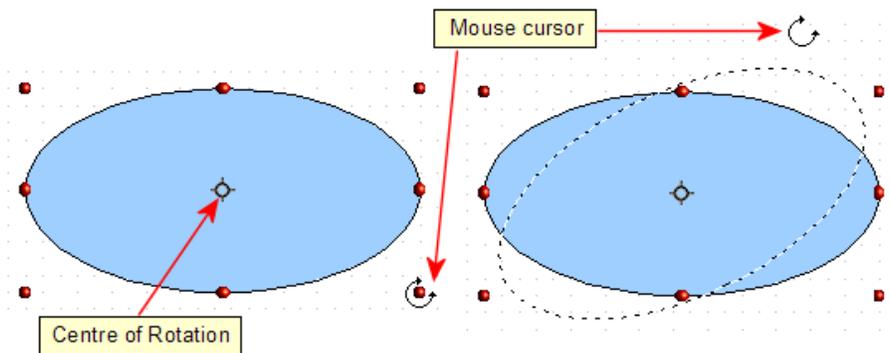


Figure 18: Rotating an object

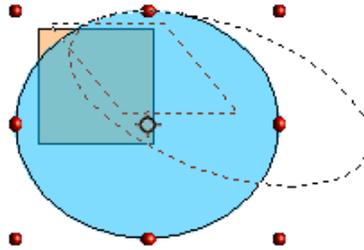
If you hold down the *Shift* key during the rotation, the operation will be carried out in increments of 15°.

Inclination and perspective

To slant or shear objects, use the red handles located at the midpoint of an edge of the selected objects. The mouse pointer changes to a  when the pointer hovers over one of these midpoint handles. Not every object can be slanted—basic shapes can be rotated but not slanted.

The slant axis is the point directly opposite the midpoint handle to be used for shearing the object. This point stays fixed in location; the other sides and edges move in relation to it as the mouse is dragged (make sure that the  handle icon is showing before dragging).

As with rotation, you can set the inclination to occur as steps of 15° by pressing the *Shift* key while moving the handle.



Duplication

Duplication makes copies of an object while applying a set of changes (such as color or rotation) to the duplicates. The result of a duplication is a new group.

To start duplication, click on an object or group and choose **Edit > Duplicate**. The dialog shown in Figure 19 appears.

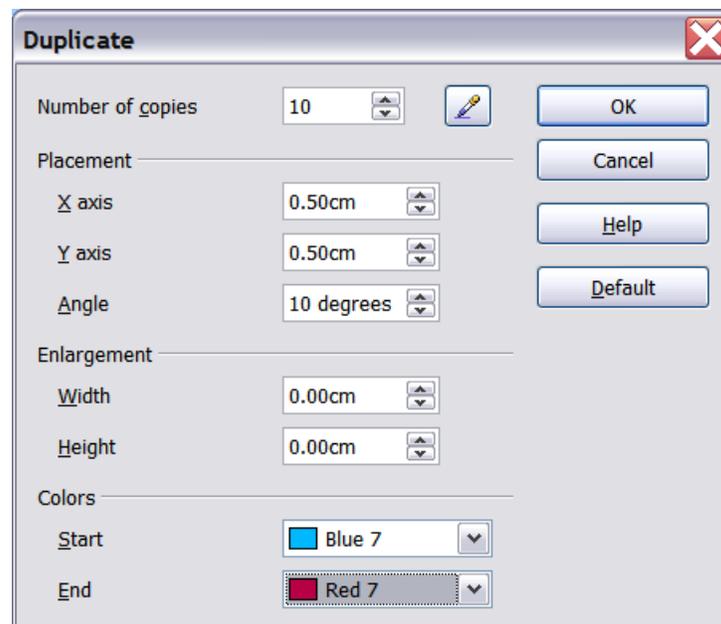
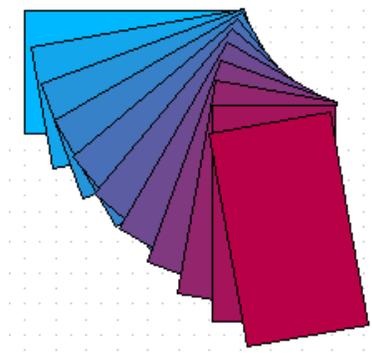


Figure 19: Duplicating an object

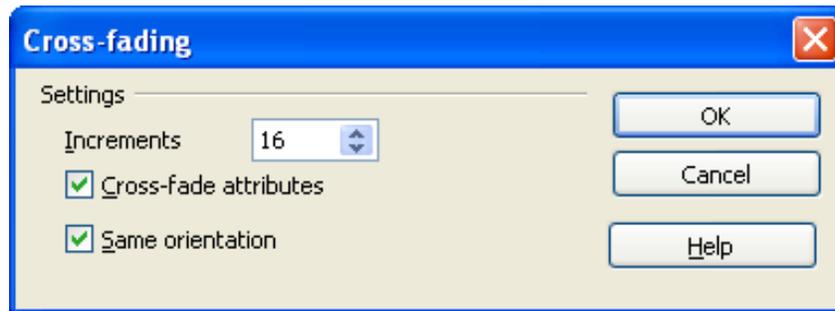
The options above applied to a blue rectangle produce the following result.



Cross-fading

Cross-fading transforms a shape from one form to another, with OpenOffice.org handling all of the intermediate transitions. The result is a new group of objects including the two end points and the intermediate steps.

To carry out a cross-fade, select both objects (hold the *Shift* key while selecting each object in turn) and then choose **Edit > Cross-fading**. The following dialog appears.



On the dialog choose the number of increments (transition steps). You probably want to have *Cross-fade attributes* and *Same orientation* both checked. The end result is shown in Figure 20.

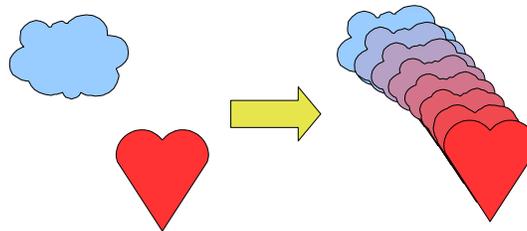
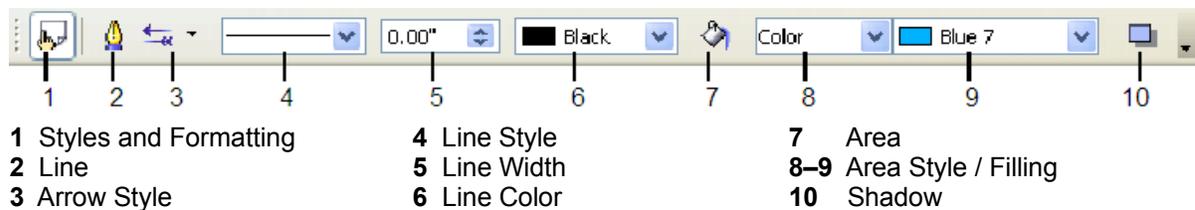


Figure 20: Cross-fading example

Editing objects

To change an object's attributes (such as color and border width), you can use the Line and Filling toolbar or the right-click menu.

If the Line and Filling toolbar is not visible, you can display it using **View > Toolbars > Line and Filling**. From here you can edit the most common object attributes. You can also open the Line dialog by clicking on the  icon and the Area dialog by clicking on the  icon to see more options.



When an object is selected, you can right-click on the object to bring up a context menu (Figure 21). The entries with an arrow contain a submenu.

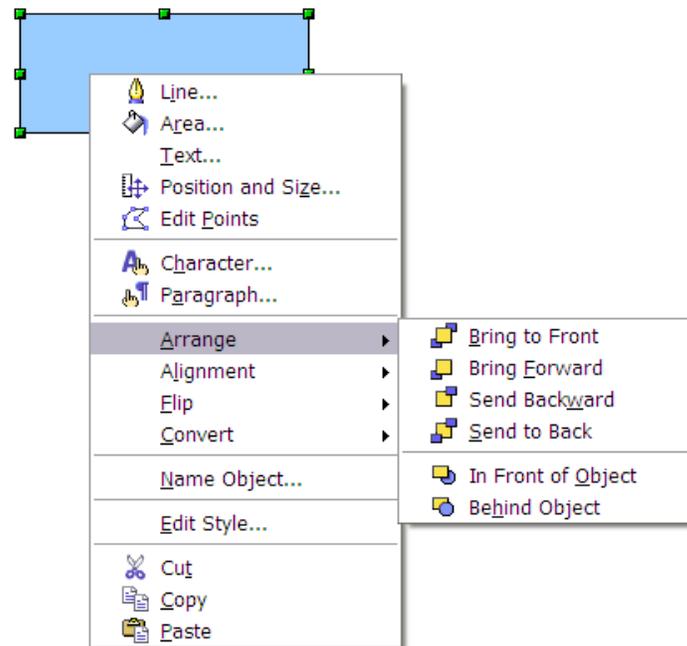


Figure 21: Right-click on a selected object to see the context menu.

Most often the property you want to change is the line's style (solid, dashed, invisible), its color or width. These options are all available from the Line and Filling toolbar. You can also edit these properties from the Line dialog. You can also define new line and arrow styles (see the *Draw Guide* for details).

The OOO term for the inside of an object is **Area fill**. The area fill of an object can be a uniform color, a gradient, or an image. Most often you will want to use one of the standard fill options, whether it is a color, a gradient, or an image. These options are all available from the Line and Filling toolbar. You can also define new area fills (see the *Draw Guide*).

Inserting pictures from other sources

You can add pictures from several sources:

- The Gallery—see Chapter 14 (Working with the Gallery)
- Directly from a scanner (**Insert > Picture > Scan**)
- Images created by another program, including photographs from a digital camera (**Insert > Picture > From File**)

Draw provides tools for working with bitmap images such as photographs: the Picture toolbar and the bitmap image management palette. See the *Draw Guide* for details and examples.

Exchanging objects with other programs

To save a Draw image in a foreign format, use **File > Export**. Draw can save to many graphic file formats, as listed in Chapter 3 (File Management).

You can also export Draw files to HTML, PDF, or Flash. PDF export is the same as for any part of OpenOffice.org, as described in Chapter 3 (File Management). Flash export creates a .swf file.

HTML export uses a conversion wizard that creates as many web pages as there are pages in your Draw document. You can optionally choose to display the pages in frames with a navigator and can set an index page. For more information, see Chapter 16 (Creating Web Pages: Saving Documents as HTML Files).