OpenOffice.org 3

Getting Started Guide

Chapter 7
Getting Started with Draw

Vector Drawing in OpenOffice.org

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Contributors

Agnes Belzunce
Daniel Carrera
Michel Pinquier
Gary Schnabl
Jim Taylor
Jean Hollis Weber
Michele Zarri
Chris Bonde
Regina Henschel
Iain Roberts
Joe Sellman
Alex Thurgood
Linda Worthington

Feedback

Please direct any comments or suggestions about this document to:
authors@documentation.openoffice.org

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Note for Mac users

Some keystrokes and menu items are different on a Mac from those used in Windows and Linux. The table below gives some common substitutions for the instructions in this chapter. For a more detailed list, see the application Help.

Windows/Linux	***Mac equivalent***	***Effect***
Tools > Options menu selection	**OpenOffice.org > Preferences**	Access setup options
Right-click	*Control+click*	Open context menu
Ctrl (Control)	*⌘ (Command)*	Used with other keys
F5	*Shift+⌘+F5*	Open the Navigator
F11	*⌘+T*	Open Styles & Formatting window

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What is Draw?

Draw is a vector graphics drawing program, although it can also perform some operations on raster graphics (pixels). Using Draw, you can quickly create a wide variety of graphical images.

Vector graphics store and display an image as simple geometric elements such as lines, circles, and polygons rather than a collections of pixels (points on the screen). Vector graphics allow for easier storage and scaling of the image.

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

Draw's functionality is extensive; even though it was not designed to rival high-end graphics applications, it possesses more functions than the drawing tools that are integrated with office productivity suites.

A few examples of drawing functions are:

- Layer management
- Magnetic grid point system
- Dimensions and measurement display
- Connectors for making organization charts
- 3D functions that enable small three-dimensional drawings to be created (with texture and lighting effects)
- Drawing and page style integration
- Bézier curves

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 workspace

The main components of the Draw workspace 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 in hand and user preferences. Therefore, your setup may look different. For example, many users 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**).

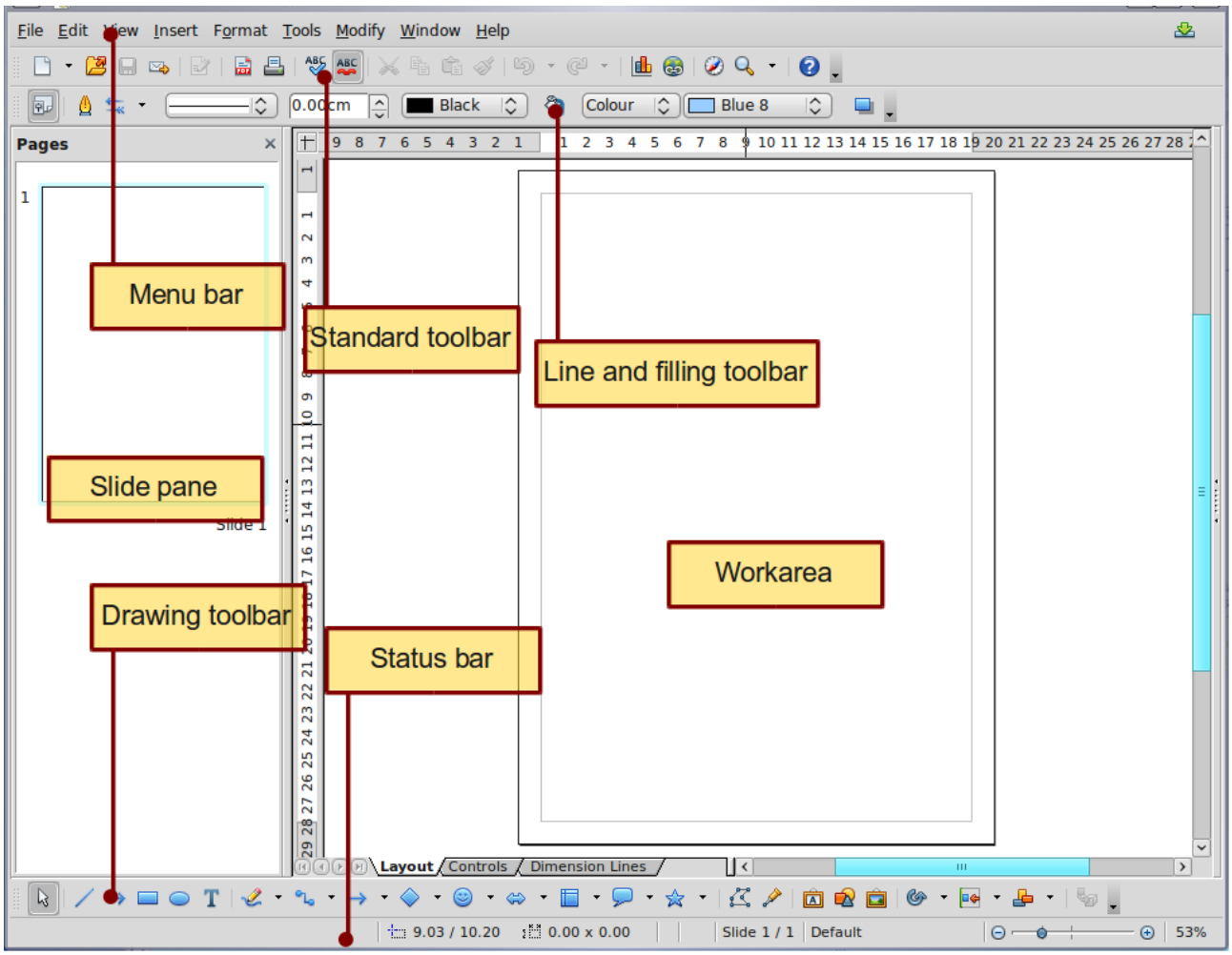


Figure 1. Initial Draw window

Rulers

You should see rulers (bars with numbers) on the upper and left-hand side of the workspace. The rulers show the size of a selected object on the page (see the gray double lines, highlighted in Figure 2). When no object is selected, they show the location of the mouse pointer, which helps to accurately position drawing objects more accurately.

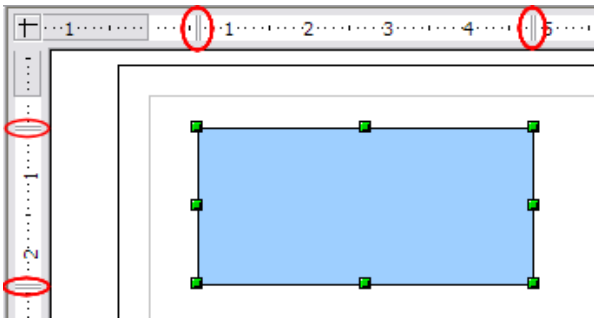


Figure 2: Rulers show the size of the selected object

You can also use the rulers to manage object handles and guide lines, making it easier to position objects. The age 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.

To modify the unit of measurement of a ruler, right-click on the ruler and select one of the measurement units. The two rulers can have different units.

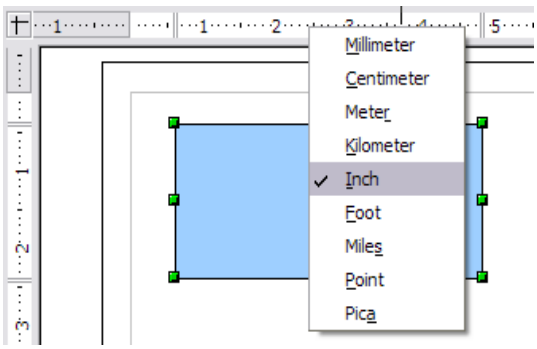


Figure 3. Ruler units

Status bar

The Status bar is located at the bottom of the screen (in all OOo components); it includes several Draw-specific fields.

For details on the contents and use of these fields, see Chapter 1 (Introducing OpenOffice.org) in this book and Chapter 1 (Introducing Draw) in 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.

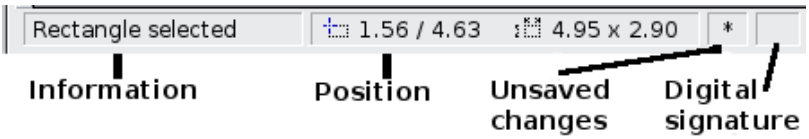


Figure 4: Left end of the Draw status bar

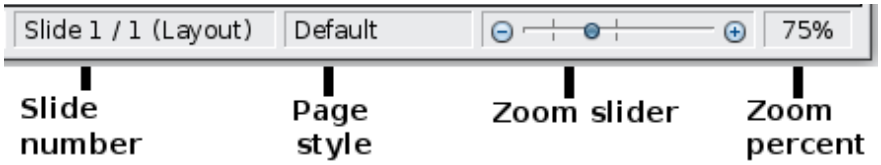


Figure 5: Right end of Draw status bar

Toolbars

To display or hide the various Draw toolbars. choose **View > Toolbars**. On the menu that appears, select which toolbars you want to display. For more about working with toolbars, see Chapter 1 (Introducing OpenOffice.org) in this book.

The tools available in the Draw toolbars are explained in the following sections. The appearance of the toolbar icons may vary depending on your operating system and the selection of icon size and style in **Tools > Options > OpenOffice.org > View**.

Standard toolbar

The Standard toolbar is the same for all OpenOffice.org components and is not described in detail in this chapter.

Line and Filling toolbar

The Line and Filling toolbar lets you modify the main properties of a drawing object. See page 23 for details.

Text Formatting toolbar

If the selected object is text, the toolbar changes to the Text Formatting toolbar, which is similar to the Formatting toolbar in Writer. For more information, see Chapter 4 (Getting Started with Writer) in this book.

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 for organizing them on the page.

Options toolbar

Use the Options toolbar to activate or deactivate various drawing aids. To display the Options toolbar, select **View > Toolbars > Options**.

Figure 6: Options toolbar

Choosing and defining colors

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. To do this, choose **Format > Area** or the *pouring can* icon on the Line and Filling toolbar. This opens the Area dialog. Choose the **Colors** tab.

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 `*.soc`). For example, `web.soc` is a color palette that is particularly 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), and RGB (Red, Green, Blue).

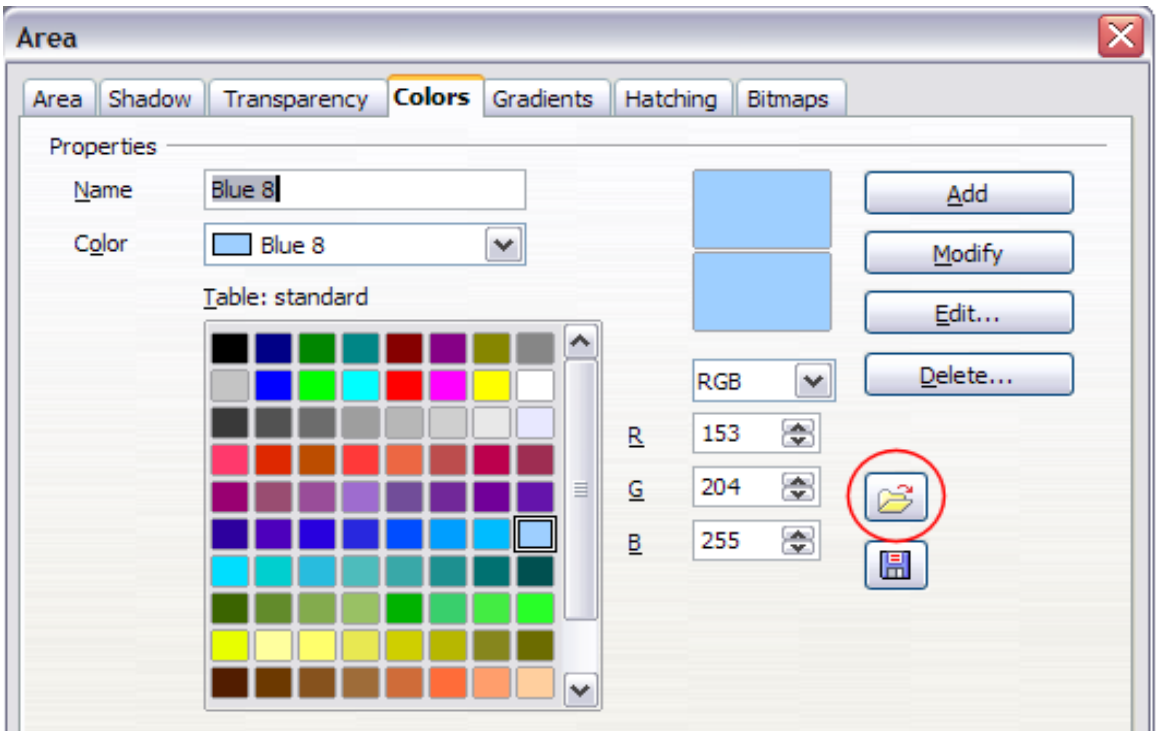


Figure 1. Changing the color palette

Click on the **Edit** button to open the Color dialog, where you can set individual colors. See “Color options” in Chapter 2 (Setting Up OpenOffice.org) of this book. Many more input possibilities are available in this dialog.

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

Positioning objects with snap functions

In Draw, objects can be accurately and consistently positioned using grid points, special snap points and lines, object frames, individual points on objects, or page edges. This function is known as *Snap*.

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

This section summaries the snap-to-grid function. For more detailed information about the 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 Figure 16). This function can be switched on and off with **View > Grid > Snap to Grid** and on the Options toolbar with the icon .

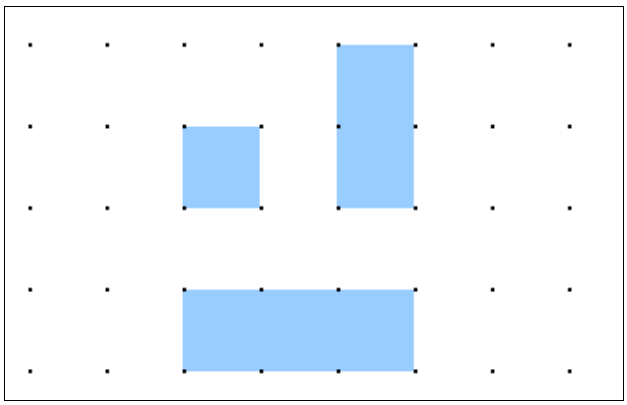


Figure 16: Exact positioning with snap to grid

Showing the grid

To make the grid visible, choose **View > Grid > Display Grid**. Alternatively, turn the grid on (or 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 (**Tools > Options > OpenOffice.org Draw > Grid**).

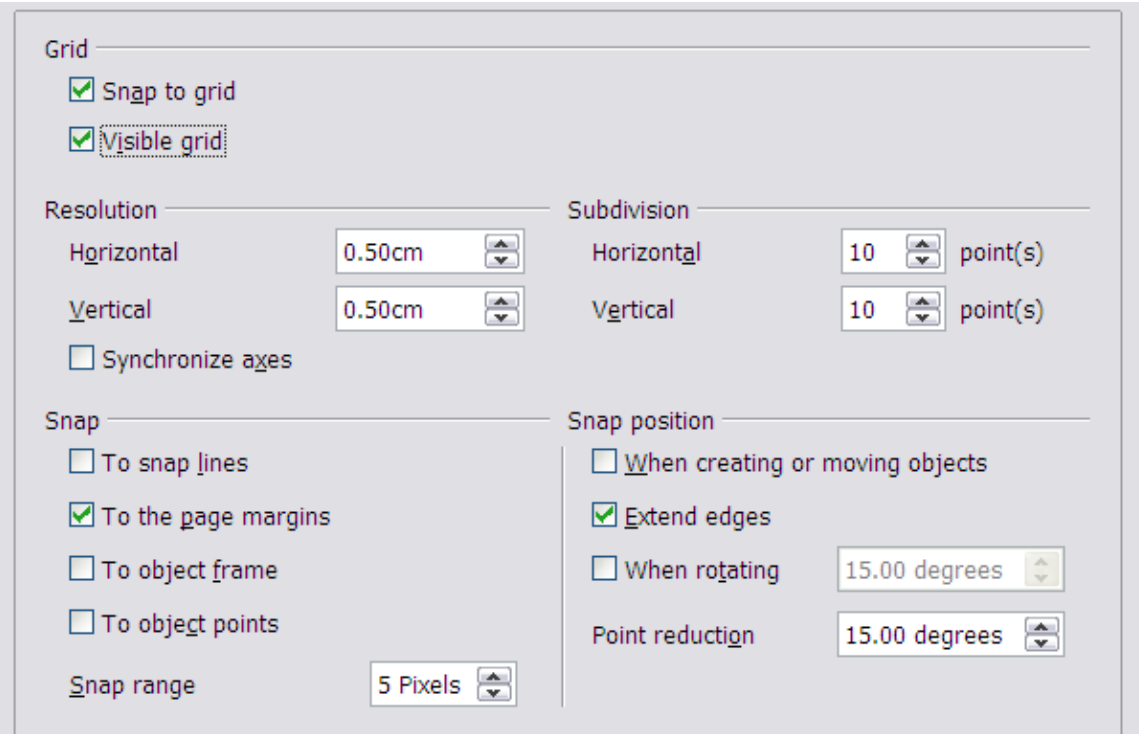


Figure 17: Setting grid options

In the dialog shown in Figure 17, 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 > General**).

- The resolution is the size of the squares or rectangles in the grid. If the resolution is Horizontal 1 cm, Vertical 2 cm, the grid consists of rectangles 2 cm high and 1 cm 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.

Changing the color of the grid points

The default grid dots are light gray, which can be hard to see. To change the color of the grid points, choose **Tools > Options > OpenOffice.org > Appearance**.

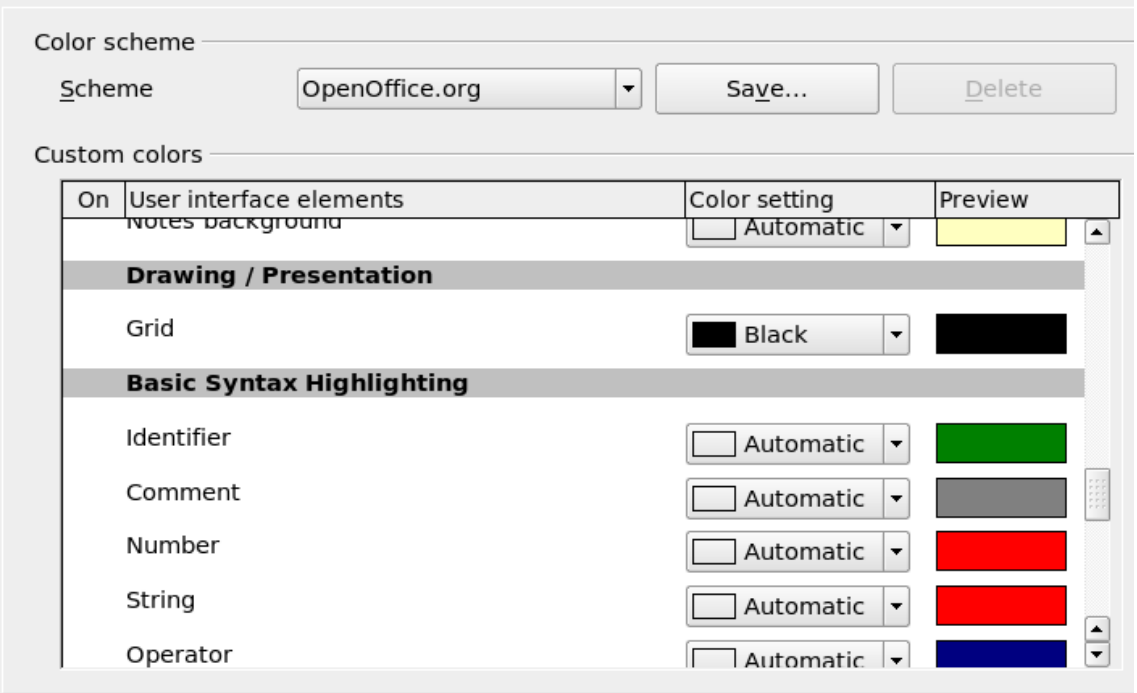


Figure 18: Changing the grid color

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 guiding 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 activated or deactivated 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 section describes only a few of the basic shapes. These shapes include; rectangles and squares, circles, ellipses, and arcs, 3D objects, curves, lines and arrows, text, and connectors. All shapes in Draw are called *objects*. See the *Draw Guide* for a complete description of the shapes available.

Note	When you draw a basic shape or select one for editing, the *Info* field at the left side in the status bar changes to reflect the present action: *Line created*, *Text frame xxyy selected*, and so on.

Figure 19 shows part of the Drawing toolbar with the icons needed in the following sections. The *Text* icon is also included.

Figure 19: Part of the Drawing toolbar

Drawing a straight line

Click on the **Line** icon on the Drawing toolbar and position the mouse pointer where you want to start the line. Drag the mouse while keeping the button pressed. Release the mouse button at the point where you want to end the line.

A selection handle appears at each end of the line, showing that this is the currently selected object.

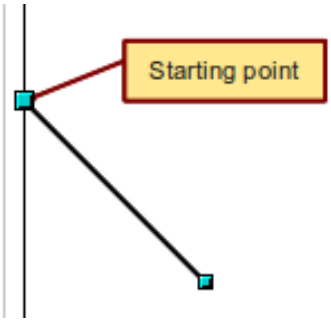


Figure 20: Drawing a straight line

To restrict the angle of the line to a multiple of 45 degrees (0, 45, 90, 135, and so on), hold down the *Shift* key while you draw the line.

To snap the end of the line to the nearest grid point, hold down the *Control* (*Ctrl*) key pressed while drawing the line.

Note	The effect of the *Ctrl* key depends on the settings of the **Snap to Grid** option on the **View > Grid** menu: **Snap to Grid on**: *Ctrl* deactivates the snap option for this activity. **Snap to Grid off**: *Ctrl* activates the snap option for this activity.

To extend the line symmetrically in both directions from the starting point, hold down the *Alt* key while drawing the line.

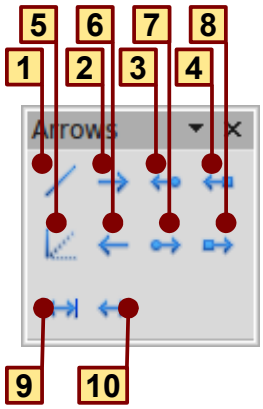
To change line attributes (for example, the color or line type), select the line by clicking on it, then use the tools in the Line and Filling toolbar; or for more control, right-click on the line and choose **Line** to open the Line dialog.

Drawing an arrow

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

Choosing line endings

Several types of line endings (arrows, circles, squares, and others) are available in Draw. Choose **View** > **Toolbars** > **Arrows**, or click on the small black triangle on the **Lines and Arrows** icon on the Drawing toolbar, to open a toolbar with ten tools for drawing lines and arrows. The last-used command is stored on the toolbar to make it quicker to call it up again.



1 Line
2 Line Ends with Arrow
3 Line with arrow/circle
4 Line with arrow/square
5 Line (45°)
6 Line starts with arrow
7 Line with circle/arrow
8 Line with square/arrow
9 Dimension line
10 Line with arrows

Figure 21: Arrows toolbar

Drawing a rectangle or square

Drawing a rectangle is similar to drawing a straight line, except that you click on the **Rectangle** icon from the Drawing toolbar, and the (imaginary) line drawn by the mouse corresponds to a diagonal of the rectangle. The rectangle changes shape as you drag the mouse around.

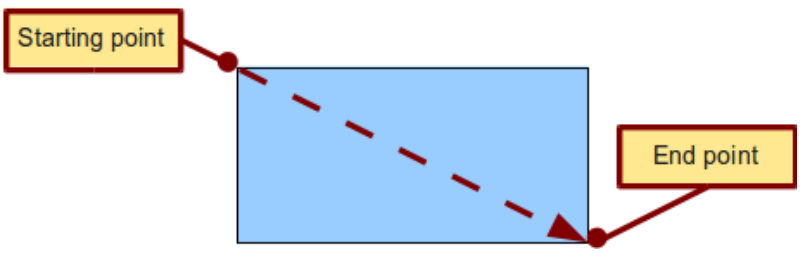


Figure 22: Drawing a rectangle

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 a circle, use the Ellipse icon from the Drawing toolbar. (A circle is simply an ellipse with both axes the same length.) The ellipse drawn is the largest ellipse that fits inside the (imaginary) rectangle drawn with the mouse.

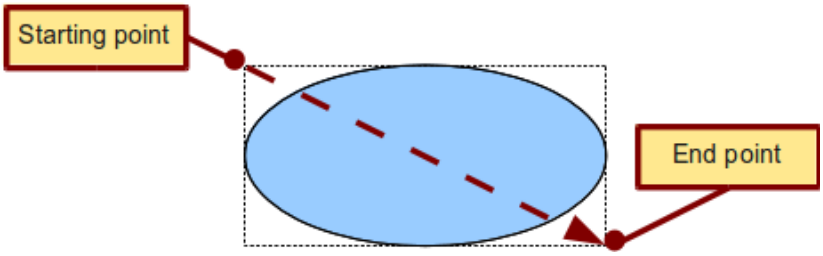


Figure 23: Drawing an ellipse

Here are some other ways to draw an ellipse or circle:

- To draw a circle, hold down the *Shift* key while dragging the mouse.
- To draw an ellipse with the starting point at the center (instead of the corner), hold down the *Alt* key while dragging the mouse.
- To draw a circle with the starting point at the center, hold down both the *Alt* and *Shift* keys while dragging the mouse.
- To draw an ellipse or circle that snaps to the nearest grid points, hold down the *Ctrl* key while dragging the mouse.

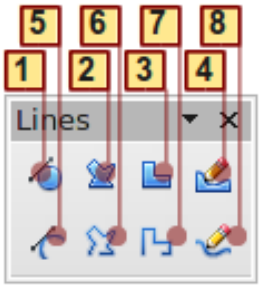
Note	If you first press and hold down the *Ctrl* key and then click on one of the icons for Line, Rectangle, Ellipse, or Text, a standard sized object is drawn automatically in the work area; the size, shape, and color are all standard values. These attributes can be changed later, if desired.

Drawing curves

The tools for drawing curves or polygons are on the toolbar that appears when you click arrow next to the **Curve** icon on the Drawing toolbar. This toolbar contains eight tools (Figure 24).

If you move the mouse cursor over one of the icons, a tooltip pops up with a description of the function.

Note	Hovering the mouse pointer over this icon gives a tooltip of *Curve*. If you convert the icon to a floating toolbar, however, the title is *Lines*, as shown in Figure 24.



1 Curve, filled
2 Polygon, filled
3 Polygon (45°), filled
4 Freeform line, Filled
5 Curve
6 Polygon
7 Polygon (45°)
8 Freeform line

Figure 24: Curves toolbar (incorrectly titled "Lines")

Polygons

Draw the first line from the start point with the left mouse button held down. As soon as you release the mouse button, a first corner point is drawn; move the mouse to see how the second line will look. Every mouse click sets another corner point. A double-click ends the drawing. A filled polygon automatically joins the last point to the first point to close off the figure and fills it with the current standard fill color. A polygon without filling will not be closed at the end of the drawing.

Polygon 45°

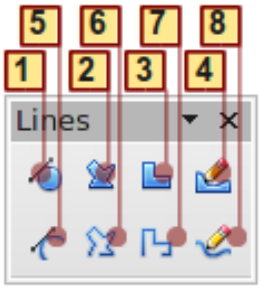
Like ordinary polygons, these are formed from lines but with angles of 45 or 90 degrees between them.

Freeform line

With this tool you can draw just like with a pencil. Press and hold the left mouse button and drag the mouse. It is not necessary to end the drawing with a double-click. Just release the mouse button and the drawing is completed. If you have selected *Freeform Line, Filled*, the end point is joined automatically to the start point and the object is filled with the appropriate color.

Curves and filled curves

For a description of the handling of curves and filled curves, see Chapter 10 (Advanced Draw Techniques) in the *Draw Guide*.



1 Curve, filled
2 Polygon, filled
3 Polygon (45°), filled
4 Freeform line, Filled
5 Curve
6 Polygon
7 Polygon (45°)
8 Freeform line

Figure 25: Curves toolbar (incorrectly titled "Lines")

Writing text

Use the Text tool to write text and select the font, color, size, and other attributes. Click at the location where you want to position the text or click and drag to create a larger text frame. Press *Enter* to move the cursor 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 use the Text tool, the Text formatting toolbar is visible; it includes the usual paragraph attributes: indents, first line, and tab stops.

You can create Graphics styles that you can reuse for other text frames. Select **Format > Styles and Formatting** or press *F11* to open the Styles and Formatting window. 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*.

Gluepoints and connectors

All Draw objects have associated invisible *gluepoints*, which become visible when you choose any of the connectors under the **Connector** icon on the Drawing toolbar and then move the mouse pointer over the object.

Most objects have four gluepoints, as shown in Figure 26. You can add more gluepoints, and customize gluepoints, using the toolbar under the Gluepoint icon on the Drawing toolbar.

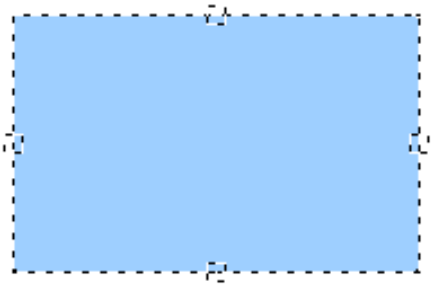


Figure 26: Four gluepoints

Gluepoints are different from handles (the small blue or green squares around an object). The handles are for moving or resizing an object. The gluepoints attach connectors to an object.

Connectors are lines or arrows whose ends automatically dock to gluepoints on an object. When you move the other object, the connector moves with it. Connectors are particularly useful for making organizational charts. You can reorganize the blocks of your chart and all the connected objects stay connected.

Figure 27 shows two Draw objects and a connector.

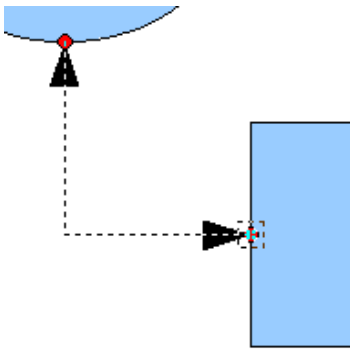


Figure 27: A connector between two objects

Draw offers a range of different connectors and connector functions. Open the floating Connector toolbar by clicking on the arrow next to the **Connector** icon . For more about connectors and gluepoints, see Chapter 9 (Organization Charts, Flow Diagrams, and More) in the *Draw Guide*.

Drawing geometric shapes

Geometric shapes include basic shapes, symbol shapes, block arrows, flowcharts, callouts, and stars.

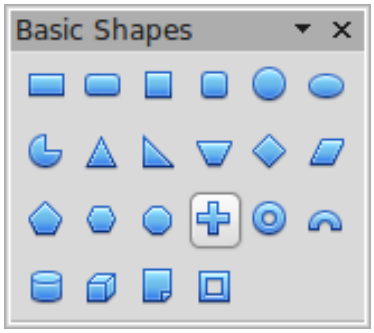
Figure 27 shows part of the Drawing toolbar with the icons referred to in the following sections. Clicking on the arrow next to the icon opens a floating toolbar with the relevant work tools.

Tip	The use of all these tools is similar to that of the Rectangle tool, even though they produce different geometric shapes.

Figure 27: Part of the main Drawing toolbar

Basic shapes

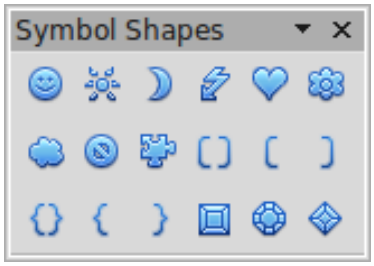
The **Basic Shapes** icon makes available the range of tools for drawing basic shapes, including a rectangular tool identical to the one on the main toolbar.



The only differences you will see are in the information field in the status bar (in this case, “shape selected” rather than “Rectangle selected”).

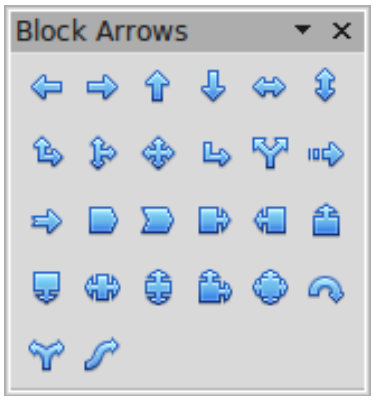
Symbol shapes

The **Symbol Shapes** icon provides an array of tools for drawing the various symbols.



Block arrows

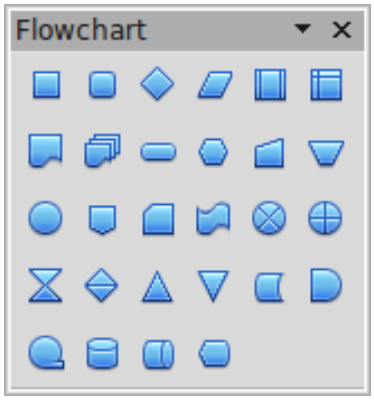
The **Block Arrows** icon opens the Block Arrows toolbar.



Flowcharts

The tools for drawing flowcharts are accessed by clicking on the **Flowcharts** icon.

The creation of flowcharts, organization charts, and similar planning tools are described in Chapter 9 (Organization Charts, Flow Diagrams, and More) in the Draw Guide.

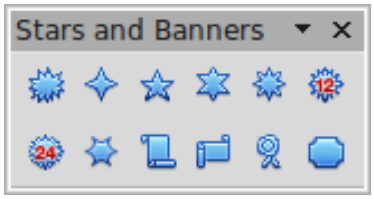


Callouts

Use the **Callouts** icon to open the Callouts toolbar.

Stars and banners

These tools are associated with the Stars icon.



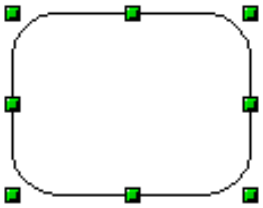
You can add text to all these shapes. See Chapter 2 (Drawing Basic Shapes) and Chapter 10 (Advanced Draw Techniques) in the *Draw Guide* for details.

Selection modes

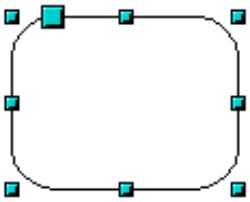
There are three selection modes: moving and changing size, editing, and rotating points.

To set the default mode (either *moving and changing sizes* or *editing*) for selecting objects, click on the **Points** button from the Drawing toolbar.

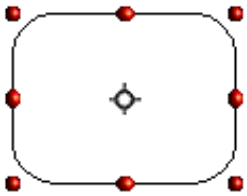
In standard mode (when you begin a new drawing), the Points button is not active, and the default mode is for selections to be moved or changed in size; these selections are indicated by small green squares.



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 Chapter 3 of 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:

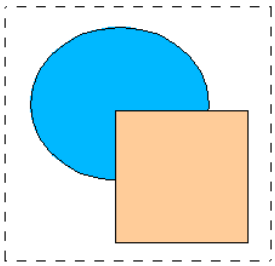
- Choose the **Points** button from the Drawing toolbar to switch from the simple selection mode to Points mode. You can also use the keyboard shortcut *F8* (Points).
- Choose the **Effects** drop-down button from the Drawing toolbar to activate the Rotation mode for a selected object.
- If you often 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 repeatedly clicking on the object, then clicking the **Rotate** button from the Drawing Toolbar.
- To stop working in Rotation mode, click the **Rotation Mode after Clicking Object** button again.

Selecting objects

Direct selection

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

Selection by framing



You can select several objects at once 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

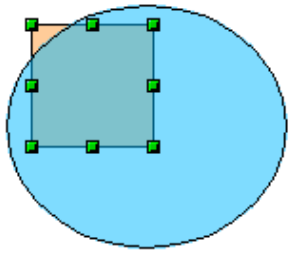
Even if objects are located behind others and not visible, they can still be selected. Hold down the *Alt* key and click where the object is located. If there are several overlapping objects, hold down the *Alt* key and click until you reach the object you want. To cycle through the objects in reverse order, hold down the *Alt+Shift* keys. The number and type of selected objects is shown at the left of the status bar to help you select the correct object.

Note	This method generally works in Windows, 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 the *Tab* key 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 the selected object, its outline will appear briefly through the objects covering it.

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, several objects may be stacked on top of one another. To rearrange the stacking order (move an object to the front or to the back of the stack), select the object, choose **Modify > Arrange** and choose **Bring Forward** or **Send Backward.** Or right-click the object, choose **Arrange** from the context menu, then choose **Bring Forward** or **Send Backward**.

These options are also available from the Arrange tear-off toolbar from the button on the Drawing toolbar. A keyboard shortcut is *Shift+Ctrl+plus sign* to bring an object to the top, and *Shift+Ctrl+minus* 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 on the same object deselects it.

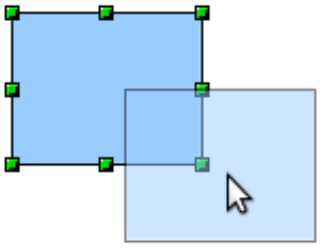
Moving and dynamically adjusting an object's size

There are several ways of moving or changing the size of an object. The *dynamic* method described here uses the mouse.

When you dynamically change an object, remember to check the left-hand area of the status bar at the bottom of the Draw window. This area shows detailed information about the ongoing manipulation. 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 dragging the mouse.

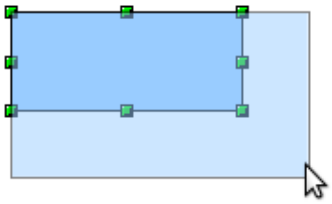


During movement, the shape of the object appears a faded version of the shape to help with repositioning.

To drop the object at its new location, release the mouse button. The new position appears immediately in the Status Bar.

Dynamic size modification of objects

To change the size of a selected object (or group of selected objects) with the mouse, move one of the handles located around the selection. As shown in the following illustration, a faded version of the new object shape is shown.



The results depend on which handle you use. To resize an object along one axis, use the appropriate side handle. To resize both axes, use a corner handle. The new size appears immediately in the status bar.

Note	If you press the *Shift* key while resizing an object, the change in size will be carried out symmetrically with respect to the two axes, so that the aspect (height/length) ratio of the object remains the same.

Rotation

Rotating an object lets you move the object around an axis. To do this dynamically (with the mouse), 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 point 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 faded version of the object being rotated appears and the current angle of rotation is dynamically shown in the status bar.

Rotations are made around an axis which is displayed as a small symbol, as shown in Figure Error: Reference source not found. You can move the axis of rotation with the mouse.

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

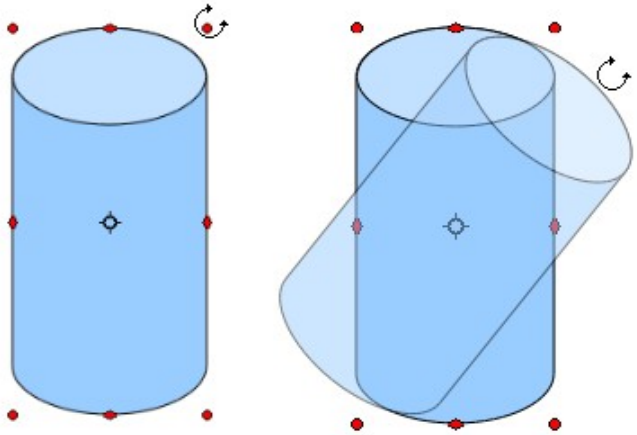
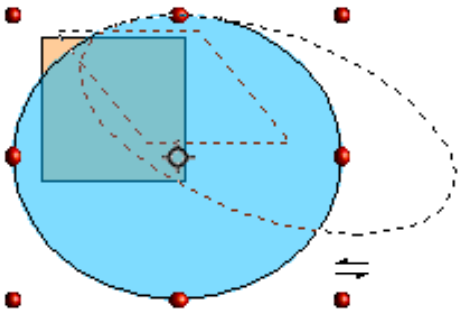


Figure 1: Rotating an object

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).

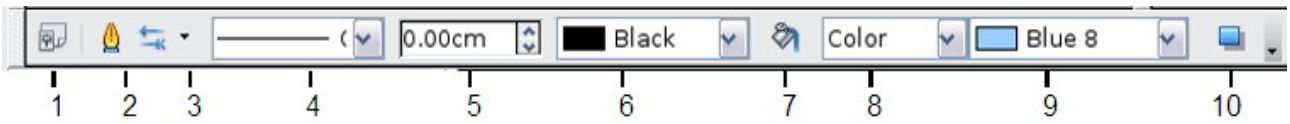


As with rotation, you can set the inclination (slanting) to occur in steps of 15° by pressing the *Shift* key while moving the handle.

Editing objects

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

If the Line and Filling toolbar (Figure 29) 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 Line icon and the Area dialog by clicking on the Area icon to see more options.



1 Styles and Formatting
2 Line
3 Arrow Style
4 Line Style
5 Line Width
6 Line Color
7 Area
8–9 Area Style / Filling
10 Shadow

Figure 29: Line and Filling toolbar

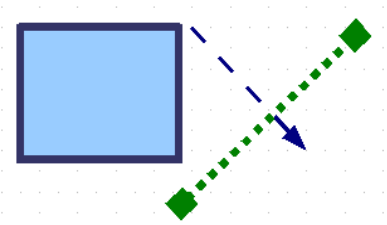
When you select text, this toolbar changes to show text formatting options.

The context menu

When an object is selected, you can right-click on the object to bring up a context menu, which provides additional access to the options shown above and another way to change an object's attributes. The entries with a small arrow on the right-hand side contain a submenu.

Editing lines and borders

Lines, arrows, and the borders of an object are managed through the Line dialog. An object's border is just another type of line.



You can change some properties from the Line and Filling toolbar. To see more options, select the object and click on the Line icon or right-click on the object and choose **Line** from the context menu. This opens the Line dialog.

Common line properties

In most cases the property you want to change is the line's style (solid, dashed, invisible, and so on), its color, or its width. These options are all available from the Line and Filling toolbar (Figure 29).

You can also edit these properties from the Line dialog, where you can also change the line's transparency. Figure 30 illustrates different degrees of transparency.

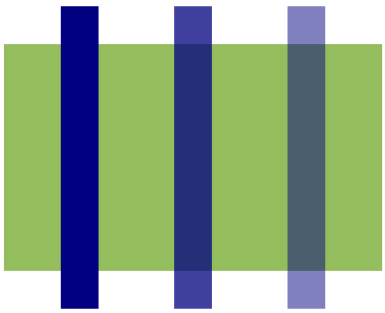
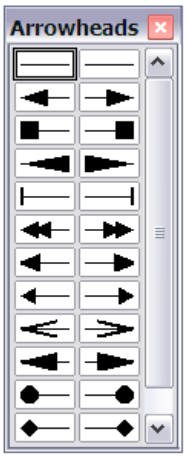


Figure 30: The vertical lines have different levels of transparency (0%, 25%, and 50%).

Drawing arrows



Arrowheads (and other line endings—usually referred to collectively as arrows) are a line property. Select a line and click on the **Arrow Style** icon from the Line and Filling toolbar. This opens the Arrowheads menu.

Several types of arrowheads are available. Each end of the line can have a different arrowhead (or no arrowhead).

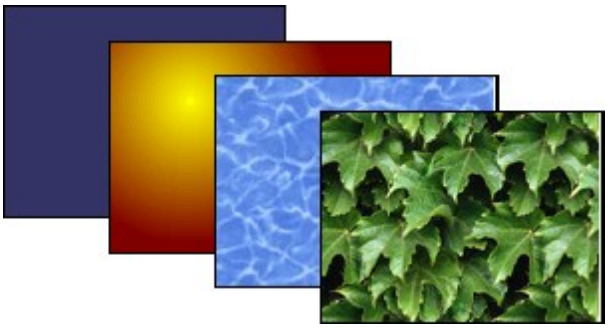
Arrowheads are only applicable to lines. They have no effect on an object's border.

Customizing line and arrow styles

You can modify the line and arrow styles and create your own. See Chapter 4 (Changing Object Attributes) in the *Draw Guide* for details.

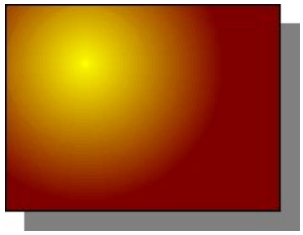
Editing the inside (fill) of an object

The OpenOffice.org term for the inside of an object is **Area fill**. The area fill of an object can be a uniform color, a gradient, a hatching, or an image. It can be made partly or fully transparent and can throw a shadow.



In most cases, you will choose one of the standard fill options, which are all available from the Line and Filling toolbar. You can also define your own area fills; see Chapter 4 of the *Draw Guide* for details.

Adding a shadow



In Draw, shadows are considered as an area property. Click on the Shadow icon on the Line and Filling toolbar.

You can customize the position, distance, color, and transparency of shadows by using **Format > Area > Shadow** or by right-clicking on the selected object and choosing **Area > Shadow**.

Adding transparency

You can make objects partly or fully transparent, or even with a varying degree of transparency (as a gradient).

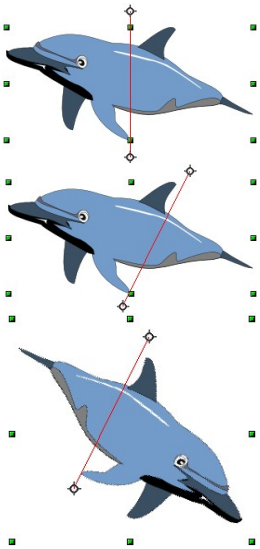
Using styles

Suppose that you want to apply the same area fill, line thickness, and border to a set of objects. This repetitive process can be greatly simplified by the use of styles. Styles allow you to define a formatting template (a style) and then to apply that style to multiple objects. For more information about styles, see Chapter 3 (Using Styles and Templates) in this book.

Special effects

With Draw, you can apply many special effects to objects and groups of objects. This section describes a few of these effects. More effects include distorting, shadows, and transparency can be found in Chapter 4 (Changing object Attributes) of the *Draw Guide.*

Flip an object



Select an object and click on the Flip icon . You will see a dashed line through the middle of the object.

This dashed line is the axis of symmetry. The object will be flipped around this line. Move one or both ends of the line with your mouse to set the orientation of the axis.

Then, grab any one of the eight green handles and move it across to the other side of the dashed line. The new position of the figure is shown dashed until the mouse is released.

Note	If you hold down the *Shift* key while moving the line, the line will rotate in 45-degree increments.

Mirror copies

Move the axis of symmetry to the desired location of the mirror axis. Copy the object to the clipboard. Flip the object, then click on an empty area of the Draw screen in order to deselect the object. Paste from the clipboard to put a copy of the object in its original location and now you have a mirror copy.

Distorting an image

There are three tools on the **Effects** menu that let you drag the corners and edges of an object to distort the image.

The **Distort** tool distorts an object in perspective, the **Set to Circle (slant)** and **Set in Circle (perspective)** tools both create a pseudo three-dimensional effect. See Chapter 4 of the *Draw Guide* for details.

Dynamic gradients

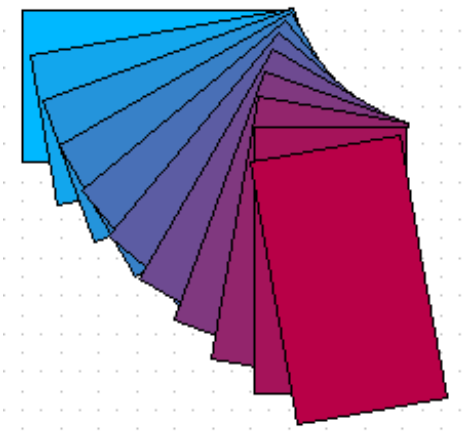
You can control transparency gradients in the same manner as color gradients. Both types of gradient can be used together. With a transparency gradient, the direction and degree of an object's fill color changes from opaque to transparent (in a regular gradient, the fill changes from one color to another, but the degree of transparency remains the same). See Chapter 4 of the *Draw Guide* for details.

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 of objects.

To start duplication, click on an object or group and choose **Edit > Duplicate**. The dialog shown in Figure 31 appears.

The options chosen in Figure 31 applied to a blue rectangle produce the following result.



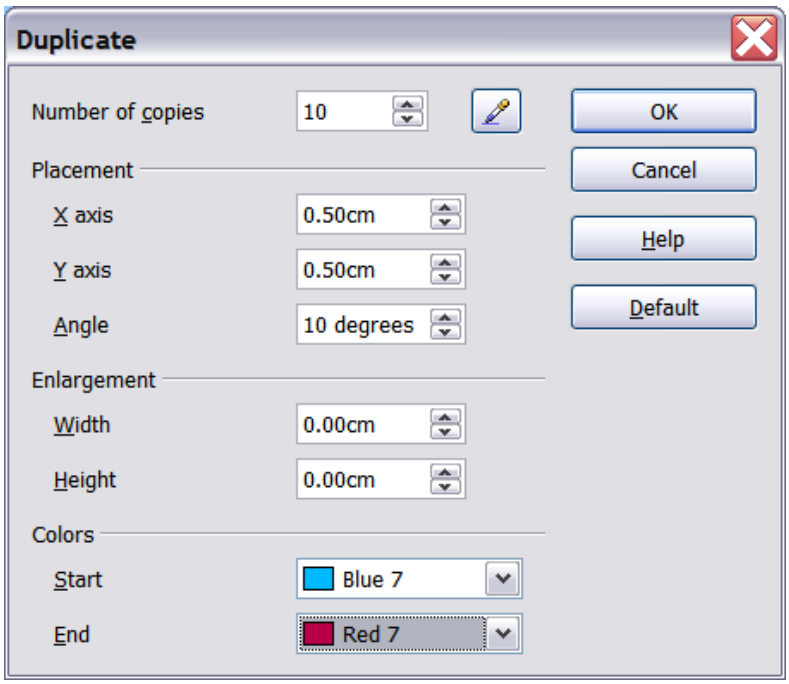


Figure 31: Duplicating an object

Cross-fading

Cross-fading transforms a shape from one form to another. The result is a new group of objects including the start and end points and the intermediate steps.

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

On the Cross-fading 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 33.

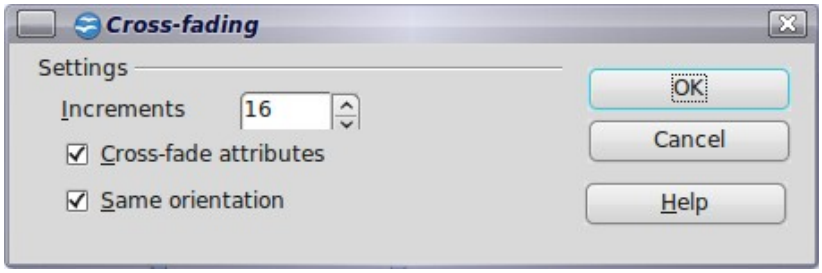


Figure 32: Choosing cross-fading settings

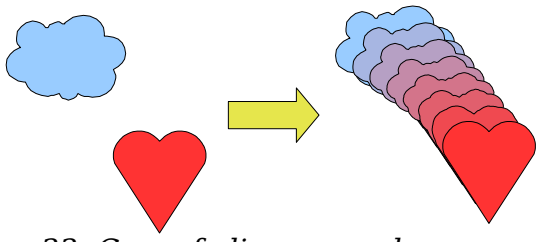


Figure 33: Cross-fading example

Combining multiple objects

Using Draw, you can combine drawing objects together in two distinct ways: *grouping* and *combining*. These two methods allow you to treat multiple objects as one unit, or to merge objects to form a new shape.

Grouping is like putting objects in a container. You can move them as a group and apply global changes to them. A group can always be undone and the objects that make up the group can always be manipulated separately.

A *combination* is a permanent fusion of objects leading to a new object. The original objects are no longer available as individual entities and the operation is not reversible.

Grouping by common selection

When several objects are selected, any operations you carry out are applied to all of the objects. For example, you can rotate a group of objects in its entirety. Groups obtained through common selection of several objects are undone as soon as you click outside the group. However, you can group objects and keep those selected objects grouped together.

Maintaining groups and undoing groups

To group objects, first select the objects, then right-click and choose **Group** from the pop-up menu. You can also use the keyboard shortcut *Control+Shift+G* or choose **Modify > Group** from the menu bar.

When objects are grouped, any editing operations carried out on that group are applied to all members of the group. If you click on one member of the group, the whole group is selected.

The objects of a group retain their own individual properties. To undo a group, right-click and choose **Ungroup** from the pop-up menu, use the keyboard shortcut *Control+Alt+Shift+G* or choose **Modify > Ungroup** from the menu bar.

You can edit a member of a group individually without breaking the group. To do this, right-click and choose **Enter group** or double-click on the group.

Combining objects

In contrast to grouping functions, *combinations* create a new object; subsequent “un-combining” in the same manner as ungrouping is not possible. Select a collection of objects, then right-click and choose **Combine** from the pop-up menu.

After you have selected more than one object, the Merge, Subtract, and Intersect functions can be reached in the **Modify > Shapes** menu or though the group’s right-click menu under the heading **Shapes**.

Aids for positioning objects

Draw has various tools to help you arrange the objects with respect to each other:

- Moving an object to the front or to the back
- Aligning objects with respect to each other
- Distributing the distance and space between objects

See Chapter 5 (Combining Multiple Objects) in the *Draw Guide* for more information.

Inserting and editing pictures

Draw contains a number of functions for editing raster graphics (bitmaps)—for example, photos and scanned images—including import and and export as well as conversion from one format to another. Draw can read in all the usual range of graphic file formats.

You can add pictures from several sources:

- The Gallery—see Chapter 11 (Graphics, the Gallery, and Fontwork)
- Directly from a scanner (**Insert > Picture > Scan**)
- Images created by another program, including photographs from a digitial camera (**Insert > Picture > From File**)

Draw provides tools for working with bitmap images: the Picture toolbar and the bitmap image management palette. However, it does not have the same capabilities as the specialized raster graphics programs like Adobe Photoshop or The Gimp. See Chapter 6 (Editing Pictures) in the *Draw Guide* for details and examples.

Working with 3D objects

Although Draw does not match the functionality of the leading drawing or picture editing programs, it is capable of producing and editing very good 3D drawings.

Draw offers two types of 3D objects: *3D bodies*, and *3D shapes*. Depending on which type you choose, there are different possibilities for further editing of the object (rotation, illumination, perspective). 3D shapes are simpler to set up and edit than 3D bodies, but 3D bodies currently allow for more customization.

See Chapter 7 (Working with 3D Objects) in the *Draw Guide* for details.

Exporting graphics

To save a Draw image in a format other than *.odg, use **File > Export**. Draw can save to many graphic file formats, as listed in Appendix B (Background Information) of this book. You can export the entire file or selected objects.

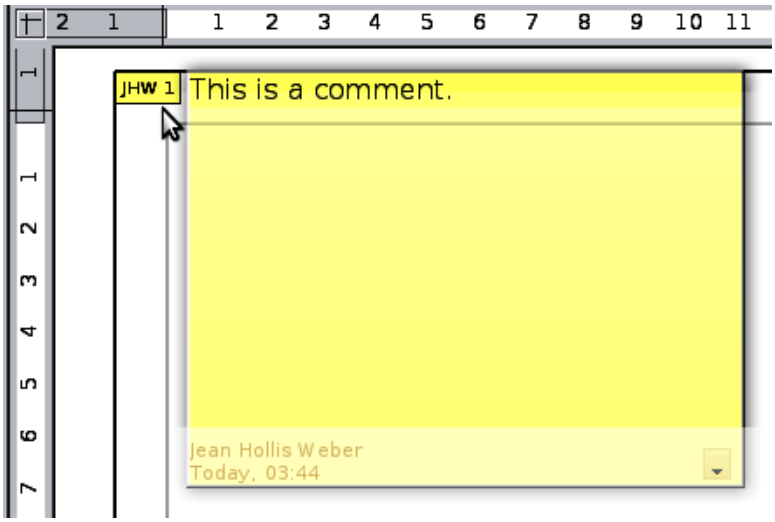
You can also export Draw files to HTML, PDF, or Flash. PDF export is the same as for any part of OpenOffice.org, as described in Chapter 10 (Printing, Exporting, and E-mailing) of this book. Flash export creates a .swf file.

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 12 (Creating Web Pages: Saving Documents as HTML Files) of this book.

Adding comments to a drawing

Starting with OOo 3.2, Draw supports comments (formerly called notes) similar to those in Writer and Calc.

Choose **Insert > Comment** from the menu bar. A small box containing your initials appears in the upper left-hand corner of the Draw page, with a larger text box beside it. Draw has automatically added your name and the date at the bottom of this text box.



Type or paste your comment into the text box. You can optionally apply some basic formatting to parts of the text by selecting it, right-clicking, and choosing from the pop-up menu. From this menu, you can also delete the current comment, all the comments from the same author, or all the comments in the document.

You can move the small comment markers to anywhere you wish on the page. Typically you might place it on or near an object you refer to in the comment.

To show or hide the comment markers, choose **View > Comments**.

Choose **Tools > Options > User Data** to enter the name you want to appear in the Author field of the comment.

If more than one person edits the document, each author is automatically allocated a different background color.