Chapter 2
Drawing Basic Shapes
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Acknowledgments

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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.

<table>
<thead>
<tr>
<th>Windows or Linux</th>
<th>Mac equivalent</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools &gt; Options</td>
<td>LibreOffice &gt; Preferences</td>
<td>Access setup options</td>
</tr>
<tr>
<td>Right-click</td>
<td>Control+click and/or right click depending on computer setup</td>
<td>Opens a context menu</td>
</tr>
<tr>
<td>Ctrl (Control)</td>
<td>⌘ (Command)</td>
<td>Used with other keys</td>
</tr>
<tr>
<td>F5</td>
<td>Shift+⌘+F5</td>
<td>Opens the Navigator</td>
</tr>
<tr>
<td>F11</td>
<td>⌘+T</td>
<td>Opens the Styles and Formatting window</td>
</tr>
</tbody>
</table>

Documentation for LibreOffice is available at http://www.libreoffice.org/get-help/documentation
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Creating simple drawings

You can create 2D and 3D objects in Draw. This chapter shows how to draw simple 2D objects. The following chapters describe how to work with and edit such objects. For more information on 3D objects, see Chapter 7 Working with 3D Objects in this guide.

All shapes, whether they are lines, rectangles, or more complicated shapes, are called objects. This is common notation in vector drawing software.

The drawing tools are found on the Drawing toolbar (Figure 1).

As described in Chapter 1 Introducing Draw, the Drawing toolbar is normally located at the bottom of the window. If you do not see it, you can activate it from the View > Toolbars menu. As with all the components of LibreOffice, you can undock the Drawing toolbar and place it wherever you want to on the Draw window as a floating toolbar. You can also configure toolbars by adding, moving, hiding, or deleting toolbar icons.

Figure 1: Drawing toolbar

When you draw a shape, select one for editing or add text, the Information field in the status bar (Figure 2) changes to reflect the action taken or in progress. See Chapter 1 Introducing Draw for more information on the status bar.

Figure 2: Draw status bar

Custom shapes

Draw also offers the ability to create custom shapes, which are the equivalent of Autoshares in Microsoft Office. Custom shapes differ in their properties and are dealt with separately in the relevant chapters of this guide. The main differences relate to the behavior of 3D objects and text handling. Text frames in Draw have their own geometric format.

Drawing basic shapes

Basic shapes, including text, are treated as objects in Draw. The various tools available for drawing basic shapes, from left to right on the Drawing toolbar, are given in Table 1.

Please note that some of the icons on the Drawing toolbar will change according to the shape that has been selected from the choice available. Available tools are indicated by a small triangle or arrow to the right of the icon. See “Drawing geometric shapes” on page 13 for information on the available shapes.
Table 1: Basic drawing tools

<table>
<thead>
<tr>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select</td>
<td></td>
<td>Line</td>
<td></td>
<td>Line ends</td>
<td></td>
<td>Rectangle</td>
</tr>
<tr>
<td></td>
<td>Ellipse</td>
<td></td>
<td>Text</td>
<td></td>
<td>Vertical text</td>
<td></td>
<td>Curve</td>
</tr>
<tr>
<td></td>
<td>Connector</td>
<td></td>
<td>Lines and arrows</td>
<td></td>
<td>Basic shapes</td>
<td></td>
<td>Symbol shapes</td>
</tr>
<tr>
<td></td>
<td>Block arrows</td>
<td></td>
<td>Flowcharts</td>
<td></td>
<td>Callouts</td>
<td></td>
<td>Stars</td>
</tr>
</tbody>
</table>

**Drawing straight lines**

We begin with the drawing of the simplest element—a straight line.

Click on the **Line** icon  and place the mouse pointer at the point where you want to start the line (Figure 3). Drag the mouse while keeping the mouse 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 object is the currently selected object. The selection handle at the starting point of the line is slightly larger than the other selection handle.

![Figure 3: Drawing a straight line](image)

Keeping the **Shift** key pressed while you draw a line restricts the drawing angle of the line to a multiple of 45 degrees (0, 45, 90, 135, and so on).

| Caution | This is the default behavior of the **Shift** key. However, if the option When creating or moving objects in the Snap position section of **Tools > Options > LibreOffice Draw > Grid** has been selected, the action of the **Shift** key is the opposite. Lines will automatically be drawn at a multiple of 45 degrees unless the **Shift** key is pressed. |

Keeping the **Ctrl** key pressed while drawing a line enables the end of the line to snap to the nearest grid point.

| Caution | This is the default behavior of the **Ctrl** key. However, if the **Snap to Grid** option on the **View->Grid** menu has been selected, the **Ctrl** deactivates the snap to grid activity. |
The spacing (resolution) of the grid points can be adjusted under Tools > Options > LibreOffice Draw > Grid. See Chapter 3 Working with Objects and Object Points for more information.

Holding down the Alt key while drawing a line results in the line extending outwards symmetrically in both directions from the start point. This lets you draw lines by starting from the middle of the line.

When a line is drawn, it uses default attributes. To change any of these attributes, select the line by clicking on it, then right-click and select Line to open the Line dialog (Figure 4). Line style, line width and line color can also be changed using the controls in the Line and Filling toolbar at the top of the workspace.
While you are working with a line (or any other element), you can use the information field on the Status bar to monitor the activity. A description of the current activity or selection is shown when you are working with elements. Figure 5 shows two examples.

**Drawing arrows**

Arrows are drawn like lines. In fact 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. The arrow head is drawn at the end point of the arrow when you release the mouse button.

**Drawing different types of lines and arrows**

Click on the small triangle or arrow to the right of the Lines and Arrows icon on the Drawing toolbar to open a pop-up toolbar with ten tools for drawing lines and arrows. Alternatively, go to View > Toolbars > Arrows to open the Arrows toolbar as a floating toolbar (Figure 6 and Table 2). The icon for the tool used most recently will be shown on the Drawing toolbar to make it easier to use the same tool again.

After drawing the line, you can change the arrow style by clicking on the Arrowheads icon in the Line and Filling toolbar and select the arrow start and end options.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Line" /></td>
<td>Line</td>
<td><img src="image" alt="Line ends with arrow" /></td>
<td>Line ends with arrow</td>
<td><img src="image" alt="Line with arrow/circle" /></td>
<td>Line with arrow/circle</td>
</tr>
<tr>
<td><img src="image" alt="Line (45°)" /></td>
<td>Line (45°)</td>
<td><img src="image" alt="Line starts with arrow" /></td>
<td>Line starts with arrow</td>
<td><img src="image" alt="Line with circle/arrow" /></td>
<td>Line with circle/arrow</td>
</tr>
<tr>
<td><img src="image" alt="Dimension line" /></td>
<td>Dimension line</td>
<td><img src="image" alt="Line with arrows" /></td>
<td>Line with arrows</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Tools of the Arrows toolbar**

**Drawing rectangles or squares**

Drawing a rectangle is similar to drawing a straight line. Click on the Rectangle icon in the Drawing toolbar. As you draw the rectangle with the mouse cursor, the rectangle appears with the bottom right corner of the rectangle attached to the cursor.

Squares are rectangles with all sides of equal length. To draw a square, click on the Rectangle icon and hold down the Shift key whilst you draw a square.

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the option When creating or moving objects has been selected in Tools &gt; Options &gt; LibreOffice Draw &gt; General, the action of the Shift key is reversed. When the Rectangle tool is selected, a square is drawn. To draw a rectangle you have to press the Shift key when drawing. This Shift key reversal also applies when drawing ellipses and circles in “Drawing ellipses and circles” on page 8.</td>
</tr>
</tbody>
</table>
To draw a rectangle or square from its center rather than the bottom right corner, position your cursor on the drawing, press the mouse button and then hold down the Alt key while dragging with the cursor. The rectangle or square uses the start point (where you first clicked the mouse button) as the center.

With the rectangle or square selected, you can quickly change border style, line width, or color, and the type of fill color or fill pattern using the tools on the Line and Filling toolbar. For more information on changing the attributes of a rectangle or square, see Chapter 4 Changing Object Attributes.

**Drawing ellipses and circles**

To draw an ellipse (also called an oval), click on the Ellipse icon on the Drawing toolbar. A circle is an ellipse with both axes the same length. To draw a circle, click on the Ellipse icon and hold down the Shift key whilst you draw a circle.

To draw an ellipse or circle from its center, position your cursor on the drawing, press the mouse button and then hold down the Alt key while dragging with the cursor. The ellipse or circle uses the start point (where you first clicked the mouse button) as the center.

With the ellipse or circle selected, you can quickly change border style, line width, or color, and the type of fill color or fill pattern using the tools on the Line and Filling toolbar. For more information on changing the attributes of an ellipse or circle, see Chapter 4 Changing Object Attributes.

**Note**

If you first press and hold the Ctrl key down and then click on one of the icons for Line, Rectangle, Ellipse or Text, an object is drawn automatically in the center of the workspace area using default values. The object attributes can then be changed using the Line Fill toolbar or the information in Chapter 4 Changing Object Attributes. This only works if the icon has no associated toolbar; that is no triangle or arrow on the right side of the icon.

**Adding arc and segment tools to the Drawing toolbar**

If you have to draw arcs or segments (partial circles or ellipses), then you can add the Circles and Ovals toolbar (Figure 7) to the Drawing toolbar. The Circles and Ovals toolbar is an optional toolbar that requires you to customize the Drawing toolbar.

1) Go to View > Toolbars > Customize to open the Customize dialog (Figure 8). Alternatively, right click on an icon in the Drawing toolbar and select Customize Toolbar.

2) Make sure the Toolbars page of the Customize dialog is open, then select Drawing in the Toolbar field and click on Add.

3) In the Add Commands dialog (Figure 9), select Drawing in the Category list.

4) Select the first Ellipse command in the Commands list. The Description section at the bottom of the dialog will indicate that you have selected the command for the Circles and Ovals toolbar.

5) Click on Add and then click Close.

6) In the Customize dialog, make sure that the checkbox by the new Ellipse command is checked.
7) Select the new Ellipse command and use the up and down arrow buttons to move it to the desired position on the Drawing toolbar.

8) Click **OK** to save the customized Drawing toolbar.

The new **Ellipse** icon appears on the Drawing toolbar with a small triangle or arrow to the right of it. Click on this triangle or arrow to open the Circles and Ovals toolbar (Figure 7). To make this toolbar into a floating toolbar, drag the toolbar onto the workspace area.
To remove the standard Ellipse icon from the Drawing toolbar, open the Customize dialog and deselect it in the Commands list. Alternatively, select the Ellipse command, click the Modify button and select Delete from the drop-down menu.

To return the Drawing toolbar to its default settings, open the Customize dialog. Click on the Toolbars button, select Restore Default Settings from the drop-down list and click on the Yes button to reset the toolbar.

**Drawing arcs or segments**

1) To draw an arc or segment, select the appropriate icon in the Circles and Ovals toolbar (Figure 7).
2) Click and drag with the mouse cursor to create a guide circle or ellipse, then release the mouse button.
3) Move the cursor to the position where you want the arc or segment to start. The status bar indicates the angle in degrees.
4) Single-click on this point to start drawing the arc or segment.
5) Move the cursor to create the arc or segment. The status bar indicates the angle in degrees.
6) When you have drawn the arc or segment you require, single click once more to complete the arc or segment.

**Drawing curves or polygons**

To draw a curve or polygon click the Curve icon on the Drawing toolbar. Click on the triangle or arrow to the right of the icon to open the tools that are available (Figure 10 and Table 3).

<table>
<thead>
<tr>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curve</td>
<td>Polygon filled</td>
<td>Polygon</td>
<td>Polygon filled</td>
<td>Polygon 45° filled</td>
<td>Freeform line filled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curve</td>
<td>Polygon</td>
<td>Polygon</td>
<td>Polygon 45°</td>
<td>Freeform line</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hovering the mouse pointer over this icon gives a tooltip of Curve. If you open the floating toolbar, the title is Lines as shown in Figure 10.

If you move the mouse cursor over one of the icons, a tooltip pops up with a description of the function. For a more detailed description for handling Bézier curves, see Chapter 10 Advanced Draw Techniques.

**Curves**

Click and hold the left mouse button to create the starting point of your curve, then, while holding down the left mouse button, drag from the starting point to draw a line. Release the left mouse
button and continue to drag the cursor to bend the line into a curve. Click to set the end point of the curve and fix the line on the page. To continue with your line, drag the mouse cursor to draw a straight line. Each mouse click sets a corner point and allows you to continue drawing another straight line from the corner point. A double click ends the drawing of your line.

A filled curve automatically joins the last point to the first point to close off the figure and fills it with the current standard fill color. A curve without filling will not be closed at the end of the drawing.

**Polygons**

Click and draw the first line from the start point with the left mouse button held down. As soon as you release the mouse button, a line between the first and second points is drawn. Move the cursor to draw the next line. Each mouse click sets a corner point and allows you to draw another line. 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.

**Polygons 45°**

Like ordinary polygons, these are formed from lines, but the angles between lines are restricted to 45 or 90 degrees.

**Note**

Holding down the *Shift* key when drawing lines with the Curve or Polygon tools will also restrict the angles between the lines to 45 or 90 degrees.

**Freeform lines**

Using the Freeform Line tools is similar to drawing with a pencil on paper. Press and hold the left mouse button and drag the cursor to the line shape you require. It is not necessary to end the drawing with a double-click, just release the mouse button and the drawing is completed.

If Freeform Line Filled is selected, the end point is joined automatically to the start point and the object is filled with the appropriate color.

![Figure 11: Gluepoints](image)

**Figure 11: Gluepoints**

![Figure 12: Gluepoints toolbar](image)

**Figure 12: Gluepoints toolbar**
Glue points and connectors

Glue points

All Draw objects have glue points, which normally are not displayed. Glue points become visible when the Connectors icon on the Drawing toolbar is selected.

Most objects have four gluepoints (Figure 11). You can add more glue points and customize glue points, using the Gluepoints toolbar (Figure 12). Go to View > Toolbars > Gluepoints to open the toolbar.

Glue points are not the same as the selection handles of an object. The handles are for moving or changing the shape of an object, as described in Chapter 3 Working with Objects and Object Points. Glue points are used to fix or glue a connector to an object so that when the object moves, the connector stays fixed to the object. For a more detailed description on the use of glue points, see Chapter 8 Connections, Flowcharts and Organization Charts.

Connectors

Connectors are lines or arrows whose ends automatically snap to a glue point of an object. Connectors are especially useful in drawing organization charts, flow diagrams, and mind-maps. When objects are moved or reordered, the connectors remain attached to a glue point. Figure 13 shows an example of two objects and a connector.

![Figure 13: A connector between two objects](image)

Draw offers a range of different connectors and connector functions. Click on the arrow next to the Connector icon to open the Connectors toolbar (Figure 14 and Table 4).

For a more detailed description of the use of connectors, see Chapter 8 Connections, Flowcharts and Organization Charts.

![Figure 14: Connectors toolbar](image)

**Table 4: Connector tools**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
<th>Icon</th>
<th>Tool name</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Connector icon]</td>
<td>Connector</td>
<td>![Connector ends with arrow icon]</td>
<td>Connector ends with arrow</td>
<td>![Connector with arrows icon]</td>
<td>Connector with arrows</td>
<td>![Line connector icon]</td>
<td>Line connector</td>
</tr>
</tbody>
</table>
### Drawing geometric shapes

The icons for drawing geometric shapes are located on the Drawing toolbar and each geometric shape is explained in the following sections. Clicking on the triangle or arrow to the right of the icon opens a floating toolbar giving access to the tools for that geometric shape.

#### Tip

The use of these tools for geometric shapes is similar to the tool used for drawing rectangles and squares. For more information, see “Drawing rectangles or squares” on page 7.

#### Note

The icons for geometric shapes displayed on the Drawing toolbar will change shape according to the last tool selected and used to draw an object.

#### Basic shapes

Click on the triangle or arrow to the right of the **Basic Shapes** icon to open the Basic Shapes toolbar (Figure 15) for drawing basic shapes. This toolbar also includes a rectangle tool identical to the one already displayed on the Drawing toolbar.

![Basic Shapes toolbar](image)

*Figure 15: Basic Shapes toolbar*

#### Symbol shapes

Click on the triangle or arrow to the right of the **Symbol Shapes** icon to open the Symbol Shapes toolbar (Figure 16) for drawing symbols.

![Symbol Shapes toolbar](image)

*Figure 16: Symbol Shapes toolbar*
Block arrows
Click on the triangle or arrow to the right of the **Block Arrows** icon 🔄 to open the Block Arrows toolbar (Figure 17) for drawing block arrows.

![Block Arrows toolbar](image)

*Figure 17: Block Arrows toolbar*

Flowcharts
Click on the triangle or arrow to the right of the **Flowcharts** icon 🔄 to open the Flowchart toolbar (Figure 18) for symbols used in drawing flowcharts. The creation of flowcharts, organization charts, and similar planning tools are further described in *Chapter 9 Organization Charts, Flow Diagrams, and More*.

![Flowcharts toolbar](image)

*Figure 18: Flowcharts toolbar*

Callouts
Click on the triangle or arrow to the right of the **Callouts** icon 📢 to open the Callouts toolbar (Figure 19) for drawing callouts.

![Callouts toolbar](image)

*Figure 19: Callouts toolbar*

Stars and banners
Click on the triangle or arrow to the right of the **Stars** icon ⭐️ to open the Stars and Banners toolbar (Figure 20) for drawing stars and banners.

![Stars and Banners toolbar](image)

*Figure 20: Stars and Banners toolbar*

Adding text to drawings and objects
In Draw you can add, insert and format text to a drawing, objects and shapes as follows:
• As a dynamic text frame, which is an independent Draw object and expands as you add more text within the frame.

• Text within a previously drawn object. This integrates text within the object and is placed within the boundary rectangle that surrounds an object. This boundary rectangle is not dynamic and care must be taken so that your text does not go outside of the object boundaries.

• For more information on how to add, insert and format text in a drawing or drawing objects, see Chapter 9 Adding and Formatting Text.