Chapter 5
Using Graphics in Calc
Copyright

This document is Copyright © 2006–2011 by its contributors as listed below. You may distribute it and/or modify it under the terms of either the GNU General Public License (http://www.gnu.org/licenses/gpl.html), version 3 or later, or the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0/), version 3.0 or later.

All trademarks within this guide belong to their legitimate owners.

Contributors

Barbara Duprey
Hal Parker

Feedback

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

Acknowledgments

This chapter is based on Chapter 5 of the OpenOffice.org 3.3 Calc Guide. The contributors to that chapter are:

Jean Hollis Weber
Emma Kirsopp
Peter Kupfer
Alexandre Martins
Kashmira Patel
Iain Roberts

Publication date and software version

Published 15 April 2011. Based on LibreOffice 3.3.

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/Linux</th>
<th>Mac equivalent</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools → Options menu selection</td>
<td>LibreOffice → Preferences</td>
<td>Access setup options</td>
</tr>
<tr>
<td>Right-click</td>
<td>Control+click</td>
<td>Open 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+Command+F5</td>
<td>Open the Navigator</td>
</tr>
<tr>
<td>F11</td>
<td>Command+T</td>
<td>Open Styles &amp; Formatting window</td>
</tr>
</tbody>
</table>

Documentation for LibreOffice is available at www.libreoffice.org
## Contents

- Copyright .......................................................................................................................... 2
- Note for Mac users .............................................................................................................. 2
- Graphics in Calc .................................................................................................................. 4
- Adding graphics (images) .................................................................................................... 4
  - Inserting an image file ........................................................................................................... 4
    - Insert Picture dialog ............................................................................................................ 4
    - Drag and drop ...................................................................................................................... 5
  - Linking an image file .............................................................................................................. 5
    - Embedding linked images .................................................................................................... 6
  - Inserting an image from the clipboard .................................................................................. 7
  - Inserting an image from the Gallery ...................................................................................... 7
- Modifying images .................................................................................................................. 8
  - Using the Picture toolbar ..................................................................................................... 8
  - Choosing a graphics mode ................................................................................................... 10
  - Using graphic filters .......................................................................................................... 10
  - Adjusting colors ................................................................................................................. 11
  - Setting transparency .......................................................................................................... 11
  - Customizing lines, areas, and shadows ............................................................................... 11
  - Cropping pictures .............................................................................................................. 11
  - Resizing an image .............................................................................................................. 12
  - Rotating a picture .............................................................................................................. 13
- Using the picture context menu ............................................................................................ 13
  - Text .................................................................................................................................... 13
  - Position and Size ................................................................................................................ 13
  - Original Size ...................................................................................................................... 14
  - Description ........................................................................................................................ 14
  - Name .................................................................................................................................. 14
  - Flip ..................................................................................................................................... 14
  - Assign Macro ...................................................................................................................... 14
  - Group .................................................................................................................................. 15
- Using Calc’s drawing tools ................................................................................................... 15
  - Set or change properties for drawing objects ..................................................................... 17
  - Resizing a drawing object ................................................................................................... 18
  - Grouping drawing objects ................................................................................................. 18
- Positioning graphics .............................................................................................................. 18
  - Arranging graphics ............................................................................................................ 18
  - Anchoring graphics ............................................................................................................ 19
  - Aligning graphics ............................................................................................................. 20
- Creating an image map .......................................................................................................... 20

---

### Using Graphics in Calc

To insert an image into a Calc document, follow these steps:

1. **Inserting an Image**:
   - **Insert Picture Dialog**: This option allows you to select an image file from your computer.
   - **Drag and Drop**: Drag an image file onto the Calc document to insert it.

2. **Linking an Image**:
   - **Embedding Linked Images**: When you insert an image, you can choose to embed it, which means the image data is stored in the Calc document, or link to it, which means the image data is stored elsewhere and Calc only references the file.

3. **Modifying Images**:
   - **Using the Picture Toolbar**: Offers various options for editing images such as rotate, flip, and adjust color settings.
   - **Choosing a Graphics Mode**: Determines how the image is displayed (e.g., original size, resized).

4. **Customizing Images**:
   - **Customizing Lines, Areas, and Shadows**: Adjusts the appearance of lines, areas, and shadows.
   - **Cropping Pictures**: Cuts out parts of an image to fit your needs.
   - **Resizing an Image**: Changes the size of the image to fit within your document constraints.

5. **Using Calc’s Drawing Tools**:
   - **Set or Change Properties for Drawing Objects**: Enables you to set properties like line styles, colors, and sizes.
   - **Resizing a Drawing Object**: Adjusts the size of a drawing object to fit within its container.

6. **Positioning Graphics**:
   - **Arranging Graphics**: Groups, aligns, and arranges images or drawing objects.
   - **Anchoring Graphics**: Anchors objects to resist resizing or rotation.

---

### Copyright

This document contains copyrighted material. Unauthorized reproduction of this document is expressly prohibited.
Graphics in Calc

Calc is often used to present data and make forecasts and predictions. Graphics can turn an average document into a memorable one. Calc can import various vector (line drawing) and raster (bitmap) file formats. The most commonly used graphic formats are GIF, JPG, PNG, and BMP. See the Help for a full list of the formats LibreOffice can import.

Graphics in Calc are of three basic types:

- Image files, such as photos, drawings, and scanned images
- Diagrams created using LibreOffice’s drawing tools
- Charts and graphs created using LibreOffice’s Chart facility

This chapter covers images and diagrams. Charts are described in Chapter 3, Creating Charts and Graphs.

Although using graphics in Calc is very similar to using graphics in any other component of LibreOffice, this chapter explains some of the differences in their use. It also covers some of the more advanced graphics functions and how they can further enhance your spreadsheet.

Note
The term graphics refers to both pictures and drawing objects. Often the word images is used when referring to pictures and other graphics that are not drawing objects.

Adding graphics (images)

Images (also called pictures in LibreOffice), such as corporate logos and photographs of people and products, are probably the most common types of graphics added to a Calc document. They may be downloaded from the Internet, scanned, or created with a graphics program; or they may be photos taken with a digital camera.

Images can be inserted in four ways:

- Using the Insert File dialog
- By dragging and dropping a supported file
- From the gallery
- From the clipboard by copying and pasting

Inserting an image file

Perhaps the most common way to insert graphics is to use an existing file.

To insert an image from a file, use either of the following methods:

- Insert Picture dialog
- Drag and drop

Insert Picture dialog

1) Click in the location in the Calc document where you want the image to appear. Do not worry too much about the exact placement of the image at this stage; placement can be changed easily as described in “Positioning graphics” on page 18.

2) Choose Insert → Picture → From File from the menu bar, or click the Insert Picture icon on the Picture toolbar).
3) On the Insert Picture dialog, navigate to the file to be inserted, select it, and click **Open**.

**Note**
The picture is inserted into Calc floating above the cells and anchored to the cell in which the cursor was placed. See “Positioning graphics” on page 18 for more about positioning and anchoring graphics.

![Insert Picture dialog](image)

**Figure 1: Inserting a picture from a file**
At the bottom of the dialog are two options, **Preview** and **Link**. Select **Preview** to view a thumbnail of the selected image on the right, so you can verify that you have the correct file. The Link option is discussed on page 5. When the **Link** option is not selected, the picture is embedded in the Calc document.

**Note**
Your Insert Picture dialog may look quite different from the one shown here, depending on your operating system and your choice in **Tools → Options → LibreOffice → General** of whether to use the LibreOffice Open and Save dialogs.

**Drag and drop**

1) Open a file browser window and locate the image you want to insert.

2) Drag the image into the Calc document and drop it where you want it to appear. A faint vertical line marks where the image will be dropped. The picture will be anchored to the cell where it was dropped.

This method always embeds (saves a copy of) the image file in the Calc document.

**Linking an image file**

To create a link to the file containing the image instead of saving a copy of the image in the Calc document, use the Insert picture dialog and select the **Link** option. The image is then displayed in the document, but when the document is saved, it contains only a reference to the image file—not the image itself. The document and the image remain as two separate files, which are merged temporarily only when you open the document again.
Linking an image has two advantages and one disadvantage:

- **Advantage** – You can modify the image file separately without changing the document because the link to the file remains valid, and the modified image will appear when you next open the document. This can be a big advantage if you (or someone else, perhaps a graphic artist) is updating images.

- **Advantage** – Linking can reduce the size of the document when it is saved, because the image file itself is not included. The file size is usually not a problem on a modern computer with a reasonable amount of memory, unless the document includes many large graphics files. Calc can handle quite large files.

- **Disadvantage** – If you send the document to someone else, or move it to a different computer, you must also send the image files, or the receiver will not be able to see the linked images. You need to keep track of the location of the images and make sure the recipient knows where to put them on another machine, so the Calc document can find them. For example, you might keep images in a subfolder named Images (under the folder containing the Writer document); the recipient of the Calc file needs to put the images in a subfolder with the same name (under the folder containing the Writer document).

**Note**
When inserting the same image several times in the document, it might appear beneficial to create links. However, this is not necessary, as LibreOffice embeds only one copy of the image file in the document. (Deleting one or more of the copies does not affect the others.)

**Embedding linked images**
If you originally linked the images, you can easily embed (save in the Calc document) one or more of them later if you wish. To do so:

1. Open the document in Calc.
2. Choose **Edit → Links** from the menu bar.
   - The Edit Links dialog shows all the linked files. In the **Source file** list, select the files you want to change from linked to embedded.
3. Click the **Break Link** button.

![Figure 2: The Edit Links dialog](image)
Going the other way, from embedded to linked, is not so easy—you must delete and reinsert each image, one at a time, selecting the Link option when you do so.

**Inserting an image from the clipboard**

Using the clipboard, you can copy images into a Calc document from another Calc document, from another component of LibreOffice (Writer, Draw, and so on), and from other programs.

To do this:

1. Open both the source document and the Calc document into which you want to copy the image.
2. In the source document, select the image to be copied.
3. Press Control+C to copy the image to the clipboard.
4. Switch to the Calc window.
5. Click to place the cursor where the graphic is to be inserted.
6. Press Control+V to insert the image.

**Caution**

If the application from which the graphic was copied is closed before the graphic is pasted into Calc, the image stored on the clipboard could be lost from the clipboard.

**Inserting an image from the Gallery**

The Gallery provides a convenient way to group reusable objects such as graphics and sounds that you can insert into your documents.

The Gallery is available in all components of LibreOffice. It does not come with many graphics, but you can add your own pictures or find extensions containing more graphics. The Gallery is explained in more detail in Chapter 11, Graphics, the Gallery, and Fontwork, in the Getting Started guide. For more about extensions, see Chapter 14, Setting Up and Customizing Calc, in this book.

This section explains the basics of inserting a Gallery image into a Calc document.

1. To open the Gallery (Figure 3), click on the Gallery icon (located in the right side of the Standard toolbar) or choose Tools → Gallery from the menu bar.
2. Navigate through the Gallery to find the desired picture.
3. To insert the picture, either right-click on the picture and choose Insert → Copy or click and drag the picture from the Gallery into the Calc document.

By default, the Gallery is docked above the Calc workspace. To expand the Gallery, position the pointer over the line that divides it from the top of the workspace. When the pointer changes to parallel lines with arrows, click and drag downward. The workspace resizes in response.

To expand the Gallery without affecting the workspace, undock it so it floats over the workspace. To do so, hold down the Control key and double-click on the upper part of the Gallery next to the View icons. Double-click in the same area while holding down the Control key to dock it again (restore it to its position over the workspace).

When the Gallery is docked, to hide it and view the full Calc workspace, click the Hide/Show button in the middle of the thin bar separating the Gallery from the workspace (circled in Figure 3).

To close the Gallery, choose Tools → Gallery to uncheck the Gallery entry, or click on the Gallery icon again.
Modifying images

When you insert a new image, you may need to modify it to suit the document. This section describes the use of the Picture toolbar, resizing, cropping, and a workaround for rotating a picture. Changes made in Calc do not affect the original picture, whether it is embedded or linked.

Calc provides many tools for working with images. These tools are sufficient for most people’s everyday requirements. However, for professional results it is generally better to use an image manipulation program such as GIMP to modify images (for example, to crop, resize, rotate, and change color values) and then insert the result into Calc. GIMP is an open-source graphics program that can be downloaded from http://www.gimp.org/downloads/.

Using the Picture toolbar

When you insert an image or select one already present in the document, the Picture toolbar appears. You can set it to always be present (View → Toolbars → Picture). Picture control buttons from the Picture toolbar can also be added to the Standard Toolbar. See Chapter 14, Setting Up and Customizing Calc, for more information.

This toolbar can be either floating or docked. Figure 4 shows the Picture toolbar when it is floating. A brief explanation of the tools is given in Table 1. See the Draw Guide for a more detailed explanation.

Two other toolbars can be opened from this one: the Graphic Filter toolbar, which can be torn off and placed elsewhere on the window, and the Color toolbar, which opens as a separate floating toolbar.

From these three toolbars, you can apply small corrections to the graphic or obtain special effects.
Figure 4: The Picture Toolbar

Table 1: Picture toolbar functions (from left to right)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="From File" /></td>
<td>From File</td>
<td>Use of this icon is described in “Inserting an image file” on page 4.</td>
</tr>
<tr>
<td><img src="image" alt="Filter" /></td>
<td>Filter</td>
<td>Displays the Graphic Filter toolbar. See page 10.</td>
</tr>
<tr>
<td><img src="image" alt="Graphics Mode" /></td>
<td>Graphics Mode</td>
<td>Provides several color modes in the drop-down list. See page 10.</td>
</tr>
<tr>
<td><img src="image" alt="Color" /></td>
<td>Color</td>
<td>Opens the Color toolbar, described on page 11.</td>
</tr>
<tr>
<td><img src="image" alt="Transparency" /></td>
<td>Transparency</td>
<td>Sets the transparency of the selected image. See page 11.</td>
</tr>
<tr>
<td><img src="image" alt="Line" /></td>
<td>Line</td>
<td>Adjusts the border style of the selected image.</td>
</tr>
<tr>
<td><img src="image" alt="Area" /></td>
<td>Area</td>
<td>Fills an area with the selected color or pattern.</td>
</tr>
<tr>
<td><img src="image" alt="Shadow" /></td>
<td>Shadow</td>
<td>Adds a drop shadow to the edges of the picture.</td>
</tr>
<tr>
<td><img src="image" alt="Crop" /></td>
<td>Crop</td>
<td>Opens the Crop dialog, where you can remove a selected part of the picture. See page 11.</td>
</tr>
<tr>
<td><img src="image" alt="Anchor" /></td>
<td>Anchor</td>
<td>Toggles between anchoring the image to the cell or to the page. See page 19.</td>
</tr>
<tr>
<td><img src="image" alt="Bring to Front" /></td>
<td>Bring to Front</td>
<td>Brings the selected image to the front of the stack. See page 18.</td>
</tr>
<tr>
<td><img src="image" alt="Send to Back" /></td>
<td>Send to Back</td>
<td>Pushes the selected image to the rear of the stack. See page 18.</td>
</tr>
<tr>
<td><img src="image" alt="To Foreground / Background" /></td>
<td>To Foreground / Background</td>
<td>Allows image to float in the foreground or makes it part of the background (behind the cells). See page 18.</td>
</tr>
<tr>
<td><img src="image" alt="Alignment" /></td>
<td>Alignment</td>
<td>If two or more pictures are selected, adjusts the horizontal and vertical alignment of the pictures in relation to each other. See page 20.</td>
</tr>
</tbody>
</table>
Choosing a graphics mode

You can change color images to grayscale by selecting the image and then selecting **Grayscale** from the Graphics mode list.

**Table 2: Graphics modes**

<table>
<thead>
<tr>
<th>Graphics mode</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Keeps the picture the same as it was inserted.</td>
</tr>
<tr>
<td>Grayscale</td>
<td>Shows the picture in gradual shades of gray.</td>
</tr>
<tr>
<td>Black / White</td>
<td>Converts the picture into a monochromatic black and white image.</td>
</tr>
<tr>
<td>Watermark</td>
<td>Makes the picture into a watermark that blends into the background.</td>
</tr>
</tbody>
</table>

Using graphic filters

Click the Filter icon to display the Graphic Filter toolbar, which provides options for applying basic photographic and effect filters to images from within Calc. To “tear off” this toolbar and place it anywhere on the screen, click on the three parallel lines and drag it away.

**Table 3: Graphic filters and their effects**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Invert Icon]</td>
<td>Invert</td>
<td>Inverts the colors in the picture like a negative.</td>
</tr>
<tr>
<td>![Smooth Icon]</td>
<td>Smooth</td>
<td>Applies a Gaussian Blur to the image which softens edges.</td>
</tr>
<tr>
<td>![Sharpen Icon]</td>
<td>Sharpen</td>
<td>Sharpens the image.</td>
</tr>
<tr>
<td>![Remove Noise Icon]</td>
<td>Remove Noise</td>
<td>Applies crude noise reduction.</td>
</tr>
<tr>
<td>![Solarization Icon]</td>
<td>Solarization</td>
<td>Reverses a portion of the tones, then produces pronounced outlines of the highlights.</td>
</tr>
<tr>
<td>![Aging Icon]</td>
<td>Aging</td>
<td>Applies a Sepia filter.</td>
</tr>
<tr>
<td>![Posterize Icon]</td>
<td>Posterize</td>
<td>Opens a dialog to determine the number of poster colors. This effect is based on the reduction of the number of colors. It makes photos look like paintings.</td>
</tr>
<tr>
<td>![Pop Art Icon]</td>
<td>Pop Art</td>
<td>Applies a Pop Art style to the image.</td>
</tr>
<tr>
<td>![Charcoal Sketch Icon]</td>
<td>Charcoal Sketch</td>
<td>Applies a Charcoal Sketch look to the image.</td>
</tr>
<tr>
<td>![Relief Icon]</td>
<td>Relief</td>
<td>Displays a dialog for creating reliefs. The position of the imaginary light source that determines the type of shadow can be chosen.</td>
</tr>
<tr>
<td>![Mosaic Icon]</td>
<td>Mosaic</td>
<td>Joins small groups of pixels into rectangular areas of the same color. The larger the individual rectangles are, the fewer details the graphic image has.</td>
</tr>
</tbody>
</table>
Applying LibreOffice picture filters to any image consecutively will progressively degrade the quality of the image. The picture filters used in Calc utilize what is known as a Destructive Editing algorithm, whereby each filter is applied to the image immediately, changing the original data of the image. Successive transformations result in less and less original data remaining, thus compromising the quality of the inserted picture. While this might be acceptable for use in simple documents, it is still recommended that dedicated photo or image editing software be used to perform anything but the simplest of manipulations.

Adjusting colors

Use the Color toolbar to adjust an image’s red, green, and blue channels independently, as well as its brightness, contrast and gamma.

Setting transparency

Modify the percentage value in the Transparency box on the Picture toolbar to make the image more transparent. This is particularly useful when creating a watermark or when wrapping an image in the background.

Customizing lines, areas, and shadows

The Line, Area, and Shadow icons open dialogs where you can customize these elements. Details are in the Draw Guide.

Cropping pictures

When you are only interested in a section of the image for the purpose of your document, you may wish to crop (cut off) parts of it. The user interface in Calc for cropping an image is not very friendly, so it may be a better choice to use a graphics package.

Click the Crop icon to open a dialog where you can select which portion of the image you want to remove.

It is not possible to use the mouse to select the area to be cropped, as you can in Draw. Instead, in the Crop dialog, specify how far from the top, bottom, left and right borders of the image the crop should be, as illustrated in Figure 5. On the thumbnail in the figure, notice that the cropped selection is highlighted with an inner rectangle.

On the Crop dialog, you can control the following parameters:

Keep scale / Keep image size

When Keep scale is selected (default), cropping the image does not change the scale of the picture.

When Keep image size is selected, cropping enlarges (for positive cropping values), shrinks (for negative cropping values), or distorts of the image so that the image size remains constant.

Left, Right, Top, and Bottom

The image is cropped by the amount entered in these boxes. For example, a value of 3cm in the Left box cuts 3 cm from the left side of the picture.

• When Keep scale is selected, the size of the image also changes, so in this example the width will be reduced by 3 cm.
When **Keep image size** is selected, the remaining part of the image is enlarged (when you enter positive values for cropping) or shrunk (when you enter negative values for cropping) so that the width and height of the image is not changed.

![Crop dialog](image)

**Figure 5: The Crop dialog**

**Width and Height**

The **Width** and **Height** fields under either **Scale** or **Image size** change as you enter values in the **Left**, **Right**, **Top**, and **Bottom** fields. Use the thumbnail next to these fields to determine the correct amount by which to crop.

The cropped shape is always a rectangle; more complex cropped shapes are not possible in Calc. Instead, use a dedicated photo or image editing software for the job, then import the image into Calc.

**Note**

If you crop an image in Calc, the picture itself is not changed. If you export the document to HTML, the original image is exported, not the cropped image.

**Resizing an image**

To resize an image.

1) Click the picture, if necessary, to show the green resizing handles.

2) Position the pointer over one of the green resizing handles. The pointer changes shape giving a graphical representation of the direction of the resizing.

3) Click and drag to resize the picture.

4) Release the mouse button when satisfied with the new size.

The corner handles resize both the width and the height of the graphic object simultaneously, while the other four handles only resize one dimension at a time.
Resizing a bit-mapped (raster) image such as a photograph adversely affects the resolution, causing some degree of blurring. It is better to use a graphics package to size your picture correctly before inserting it into your document, if possible.

For more accurate resizing, use the Position and Size dialog, described on page 13.

Rotating a picture

Calc does not provide a tool for rotating a picture, but you can use this workaround:

1) Open a new Draw or Impress document.
2) Insert the image you want to rotate.
3) Select the image, then in the Drawing toolbar (shown by default at the bottom of the window in Impress and Draw), select the Rotate icon.
4) Rotate the image as desired. Use the red handles at the corners of the picture and move the mouse in the direction you wish to rotate. By default the picture rotates around its center (indicated by a black crosshair), but you can change the pivot point by moving the black crosshair to the desired rotation center.

Tip

To restrict the rotation angle to multiples of 15 degrees keep the Shift key pressed while rotating the image.

5) Select the rotated picture by pressing Ctrl+A, then copy the image to the clipboard with Ctrl+C.
6) Finish by going back to the Calc document, place the cursor where the image is to be inserted, and press Ctrl+V.

Using the picture context menu

Many of the options accessible from the Picture toolbar can also be reached by right-clicking on an image to pop up a context menu. Some additional options are only available from the context menu; these are described in this section.

Text

Opens a dialog where you can set the options for text that goes over a picture. To write text over a graphic, click on the graphic to select it, and then press Enter. There should be a cursor inside the graphic. Any text entered is part of the graphic, so if the graphic is moved the text will move with it.

Position and Size

Opens the dialog shown below where you can change the size, location, rotation, slant and corner radius of the image.
**Original Size**

Resets the dimensions of the image to the values when it was originally inserted into the document.

**Description**

You can add metadata in the form of a title and description to the image. This information is used by accessibility tools (such as screen reader software) and as ALT (alternative) attributes if you export the document to HTML.

**Name**

You can add a custom name to be assigned to the image, to make it easier to find in the Navigator.

---

**Tip**

When collaborating with a team on a large, multi-page publication, it may be beneficial to give graphics, figures, and other objects meaningful names and descriptions to aid in clear communication.

**Flip**

Flips the image either horizontally or vertically.

**Assign Macro**

Adds programmable functionality to the image. Calc provides rich macro functionality. Macros are introduced in Chapter 12, Calc Macros.
Group

To group images:

1) Select one image, then hold down the Shift key and click in turn on each of the others that you want to include in the group. The invisible “bounding box” (with the 8 green handles) expands to include all the selected images.

2) With the images selected, choose Format → Group → Group from the menu bar.

Or hover the mouse pointer over one of the images. When the pointer changes shape from an arrow to a hand, right-click and choose Group → Group from the context menu.

Note: You cannot include drawing objects in a group with pictures.

After images are grouped, the context menu provides other choices (Ungroup and Edit Group) and the Format → Group menu includes Ungroup and Enter Group. For more information about grouping, see the Draw Guide.

Using Calc’s drawing tools

Calc, like the other components of LibreOffice, has a range of tools to create custom drawings. This chapter covers the default options in Calc. For a more detailed explanation of the drawing tools and their uses, see the Draw Guide.

In general, if you need to create complex drawings, it is recommended to use LibreOffice Draw or another drawing program.

To begin using the drawing tools, choose View → Toolbars → Drawing. The Drawing toolbar appears at the bottom of the screen. You can tear off this toolbar and move it to a convenient place on the window.

![Figure 7: The Drawing toolbar showing default icons](image)

Table 4: Drawing toolbar functions (from left to right)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Select]</td>
<td>Select</td>
<td>Selects objects.</td>
</tr>
<tr>
<td>![Line]</td>
<td>Line</td>
<td>Draws a line.</td>
</tr>
<tr>
<td>![Rectangle]</td>
<td>Rectangle</td>
<td>Draws a rectangle. To draw a square, hold down Shift while you drag.</td>
</tr>
<tr>
<td>![Ellipse]</td>
<td>Ellipse</td>
<td>Draws an ellipse. To draw a circle, hold down Shift while you drag.</td>
</tr>
<tr>
<td>![Freeform Line]</td>
<td>Freeform Line</td>
<td>Draws a freeform line.</td>
</tr>
<tr>
<td>![Text]</td>
<td>Text</td>
<td>Draws a text box with no border.</td>
</tr>
</tbody>
</table>

Using Calc’s drawing tools
<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Callouts" /></td>
<td>Callouts</td>
<td>Draws a line that ends in a rectangular callout.</td>
</tr>
<tr>
<td><img src="image" alt="Basic Shapes" /></td>
<td>Basic Shapes</td>
<td>Opens the Basic Shapes toolbar.</td>
</tr>
<tr>
<td><img src="image" alt="Symbol Shapes" /></td>
<td>Symbol Shapes</td>
<td>Opens the Symbol Shapes toolbar.</td>
</tr>
<tr>
<td><img src="image" alt="Block Arrows" /></td>
<td>Block Arrows</td>
<td>Opens the Block Arrows toolbar of shapes.</td>
</tr>
<tr>
<td><img src="image" alt="Flowcharts" /></td>
<td>Flowcharts</td>
<td>Opens the Flowchart toolbar of shapes.</td>
</tr>
<tr>
<td><img src="image" alt="Callouts" /></td>
<td>Callouts</td>
<td>Opens the Callouts toolbar of shapes.</td>
</tr>
<tr>
<td><img src="image" alt="Stars" /></td>
<td>Stars</td>
<td>Opens the Stars toolbar of shapes.</td>
</tr>
<tr>
<td><img src="image" alt="Points" /></td>
<td>Points</td>
<td>Allows editing of the points of a selected polygon.</td>
</tr>
<tr>
<td><img src="image" alt="Fontwork Gallery" /></td>
<td>Fontwork Gallery</td>
<td>Opens the Fontwork Gallery.</td>
</tr>
<tr>
<td><img src="image" alt="From File" /></td>
<td>From File</td>
<td>Inserts a picture using the Insert Picture dialog.</td>
</tr>
<tr>
<td><img src="image" alt="Extrusion On/Off" /></td>
<td>Extrusion On/Off</td>
<td>Opens the 3-D Setting toolbar and converts the selected shape (if any) to 3-D.</td>
</tr>
</tbody>
</table>

To display other icons, click the down-arrow at the right-hand end of the toolbar, select **Visible Buttons**, and then choose the tools you want to appear on the toolbar.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Polygon" /></td>
<td>Polygon</td>
<td>Draws a line composed of a series of straight line segments. Hold down the <em>Shift</em> key to position new points at 45 degree angles.</td>
</tr>
<tr>
<td><img src="image" alt="Curve" /></td>
<td>Curve</td>
<td>Draws a smooth Bézier curve.</td>
</tr>
<tr>
<td><img src="image" alt="Arc" /></td>
<td>Arc</td>
<td>Draws an arc.</td>
</tr>
<tr>
<td><img src="image" alt="Ellipse Pie" /></td>
<td>Ellipse Pie</td>
<td>Draws a filled shape that is defined by the arc of an oval and two radius lines in the current document. To draw a circle pie, hold down <em>Shift</em> while you drag.</td>
</tr>
<tr>
<td><img src="image" alt="Circle Segment" /></td>
<td>Circle Segment</td>
<td>Draws a filled shape that is defined by the arc of a circle and a diameter line in the current document. To draw an ellipse segment, hold down <em>Shift</em> while you drag.</td>
</tr>
<tr>
<td><img src="image" alt="Text Animation" /></td>
<td>Text Animation</td>
<td>Inserts animated text.</td>
</tr>
</tbody>
</table>
If support for Asian languages has been enabled (in **Tools → Options → Language Settings → Languages**), two more tools can be added to the Drawing toolbar: Vertical Text and Vertical Callouts.

To use a drawing tool:

1) Click in the document where you want the drawing to be anchored. You can change the anchor later, if necessary.
2) Select the tool from the Drawing toolbar (Figure 7). The mouse pointer changes to a cross-hair pointer.
3) Move the cross-hair pointer to the place in the document where you want the graphic to appear and then click-and-drag to create the drawing object. Release the mouse button. (Some tools have other requirements; see the Help or the **Draw Guide** for details.) The selected drawing function remains active, so you can draw another object of the same type.
4) To cancel the selected drawing function, press the **Esc** key or click on the **Select** icon (the arrow) on the Drawing toolbar.
5) You can now change the properties (fill color, line type and weight, anchoring, and others) of the drawing object using either the Drawing Object Properties toolbar (Figure 8) or the choices and dialog boxes reached by right-clicking on the drawing object.

**Set or change properties for drawing objects**

To set the properties for a drawing object before you draw it:

1) On the Drawing toolbar (Figure 7), click the **Select** tool.
2) On the Drawing Object Properties toolbar (Figure 8), click on the icon for each property and select the value you want for that property.
3) For more control, or to define new attributes, you can click on the **Area** or **Line** icons on the toolbar to display detailed dialogs.

These default properties are applied only to the current document and session. They are is not retained when you close the document, and they do not apply to any other document. The defaults apply to all the drawing objects except text objects.

To change the properties for an existing drawing object, select the object and continue as described above.

Other tools and methods for modifying and positioning graphics are described in “Positioning graphics” below.

---

![Drawing Object Properties toolbar](image)

**Figure 8. Drawing Object Properties toolbar**
Resizing a drawing object

Select the object, click on one of the eight handles around it and drag it to its new size. For a scaled resizing, select one of the corner handles and keep the *Shift* key pressed while dragging the handle.

For more control of the size of the object, use the Position and Size dialog (see “Position and Size” on page 13) to set the width and height independently. If the *Keep ratio* option is selected, then the two dimensions change so that the proportion is maintained, allowing for a scaled resizing.

Grouping drawing objects

To group drawing objects:

1) Select one object, then hold down the *Shift* key and select the others you want to include in the group. The bounding box expands to include all the selected objects.

2) With the objects selected, hover the mouse pointer over one of the objects and choose *Format → Group → Group* from the menu bar or right-click and choose *Group → Group* from the context menu.

| Note | You cannot include an embedded or linked graphic in a group with drawing objects. |

Positioning graphics

Graphics can be positioned in LibreOffice Calc to work together and build more complex features.

Arranging graphics

Graphics in a Calc document are maintained in a similar manner to a deck of cards. As you add more images to the document, each image occupies a new layer at the top of the stack. To arrange graphics, you tell Calc to change the order of layers in the stack.

*Figure 9: Layering effect*
Calc provides four basic options to re-arrange the order of images. These options can be accessed from both the Picture toolbar and the picture context menu:

**Bring to Front**
Places the image on top of any other graphics or text.

**Bring Forward**
Brings the image one level up in the stack (z-axis). Depending on the number of overlapping objects, you may need to apply this option several times to obtain the desired result.

**Send Backward**
The opposite of Bring Forward; sends the selected image one level down in the object stack.

**Send to Back**
Sends the selected graphic to the bottom of the stack, so that other graphics and text cover it.

**To Background and To Foreground**
An image or a drawing object can be sent to the background as well. This is not the same as Bring Forward and Send Backward, which set the order of a number of overlapping graphics. This feature pushes a graphic behind the cells, allowing cells to be edited without affecting the graphic.

A graphic in the background will have To Foreground as a menu item, instead of To Background.

**Anchoring graphics**
 Anchors tell a graphic where to stay in relation to other items.

**Anchor to page**
ANCHORING A GRAPHIC TO THE PAGE ALLOWS IT TO BE POSITIONED IN A SPECIFIC PLACE ON THE PAGE. THE GRAPHIC DOES NOT MOVE WHEN CELLS ARE ADDED OR DELETED. THIS IS EQUIVALENT TO AN ABSOLUTE REFERENCE. THE GRAPHIC WILL ALWAYS STAY BY CELL B10 IF THAT IS WHERE IT IS PLACED.

**Anchor to cell**
ANCHORING A GRAPHIC TO A CELL ENSURES THAT THE GRAPHIC ALWAYS STAYS WITH THE CONTENT IT IS ORIGINALLY ANCHORED TO. IF A GRAPHIC IS ANCHORED TO CELL B10, AND A NEW ROW IS INSERTED, THE GRAPHIC WILL THEN BE ANCHORED TO CELL B11. THIS IS EQUIVALENT TO A RELATIVE REFERENCE.

For example, in Figure 10 the picture on the left is anchored To Cell B2 (XXX shows where the picture is anchored). The picture on the right is anchored to the page.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>XXX</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 10: Anchoring 1*
If two rows are inserted above the pictures, the picture anchored to a cell will shift down two rows and the anchor will change. The picture anchored to the page will not move. This is illustrated in Figure 11. Note that the anchor symbol and the XXX have moved down to cell B4.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>[XXX]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 11: Anchoring*

### Aligning graphics

You can align several graphics relative to each other. To do this:

1. Select all of the graphics to be aligned (*Shift+click* on each in turn). The graphics will be surrounded by an invisible bounding box with 8 green handles.
2. On the Picture toolbar, click on the Alignment icon and select one of the six options. Or, position the mouse pointer over any of the graphics. When the pointer changes shape from an arrow to a hand, right-click and choose Alignment, then select from the six options.

The six options include three for aligning the graphics horizontally (left, center, right) and three for aligning the graphics vertically (top, center, bottom).

### Creating an image map

An image map defines areas of an image (called *hotspots*) with hyperlinks to web addresses, other files on the computer, or parts of the same document. Hotspots are the graphic equivalent of text hyperlinks. Clicking on a hotspot causes Calc to open the linked page in the appropriate program (for example, the default browser for an HTML page; LibreOffice Calc for a .ODS file; a PDF viewer for a PDF file). You can create hotspots of various shapes, and include several hotspots in the same image.

To use the image map editor:

1. In your spreadsheet, select the picture where you want to define the hotspots.
2. Choose **Edit -- ImageMap** from the menu bar. The ImageMap Editor (Figure 12) opens.
3. Use the tools and fields in the dialog (described below) to define the hotspots and links necessary.
4. Click the **Apply** icon to apply the settings.
5. When done, click the **Save** icon to save the imagemap to a file, then click the **X** in the upper right corner to close the dialog.
The main part of the dialog shows the image on which the hotspots are defined. A hotspot is identified by a line indicating its shape.

The toolbar at the top of the dialog contains the following tools:

- **Apply** button: click this button to apply the changes.
- **Load, Save, and Select** icons.
- Tools for drawing a hotspot shape: these tools work in exactly the same way as the corresponding tools in the Drawing toolbar.
- **Edit, Move, Insert, Delete Points**: advanced editing tools to manipulate the shape of a polygon hotspot. Select the Edit Points tool to activate the other tools.
- **Active** icon: toggles the status of a selected hotspot between active and inactive.
- **Macro**: associates a macro with the hotspot instead of just associating an hyperlink.
- **Properties**: sets the hyperlink properties and adds the Name attribute to the hyperlink.

Below the toolbar, specify for the selected hotspot:

- **Address**: the address pointed by the hyperlink. You can also point to an anchor in a document; to do this, write the address in this format: `file://<path>/document_name#anchor_name`
- **Text**: type the text that you want to be displayed when the mouse pointer is moved over the hotspot.
- **Frame**: where the target of the hyperlink will open: pick among _blank (opens in a new browser window), _self (opens in the active browser window), _top or _parent.

**Tip**
The value _self for the target frame will work just fine in the vast majority of occasions. It is therefore not recommended to use the other choices unless absolutely necessary.

Creating an image map