

## 2. LibreOffice Draw Cheatsheet

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The purpose of this chapter is to **build awareness** of **LibreDraw tools** that can help in creating diagrams more efficiently. Such diagrams would also be easy to update or modify in future.

### 2.1. Paper Size

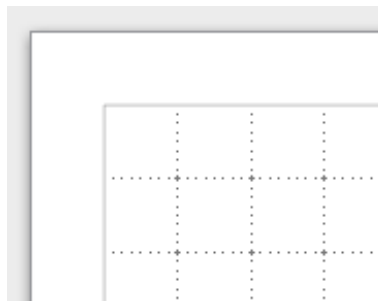
As the TRM page size is usually **A4 portrait**, use this format in LibreOffice Draw and **prepare diagrams in the scale of 100%**. In this case, you will be able to see if the diagram is readable when you publish it in the TRM.

**If a diagram does not fit on a page at 100%**, do one of the following:

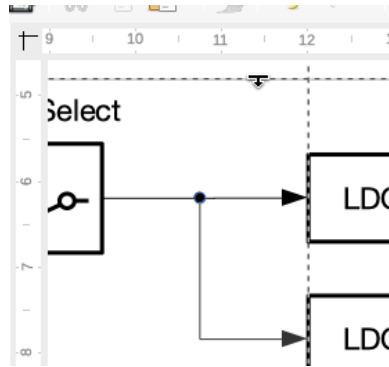
- Try **reducing** the **overall diagram scale**, BUT make sure that its components and text are readable.
- If there is still not enough space, **try splitting the diagram** into several parts.
- If it cannot be split up, **use bigger page size** in LibreOffice Draw (A4 landscape or A3) and create a page with respective size in Latex for placement. You can also consider placing the bigger page in an appendix and refer to it from your chapter.

### 2.2. Grid and Snapping

The **grid** helps to determine the exact position of your objects. **Snap to grid** allows you to move objects only between grid points. You can **bypass snapping** to grid while dragging shapes by holding *Alt*.



**Snap lines** can be used if you need to align multiple objects horizontally or vertically. You can use this option on its own or together with Snap to grid.



To **create a horizontal or vertical snap line**

- Hover your mouse pointer over the horizontal or vertical ruler
- Left-click a ruler and drag into the workspace (dashed line will follow your pointer)
- Position the snap line where required

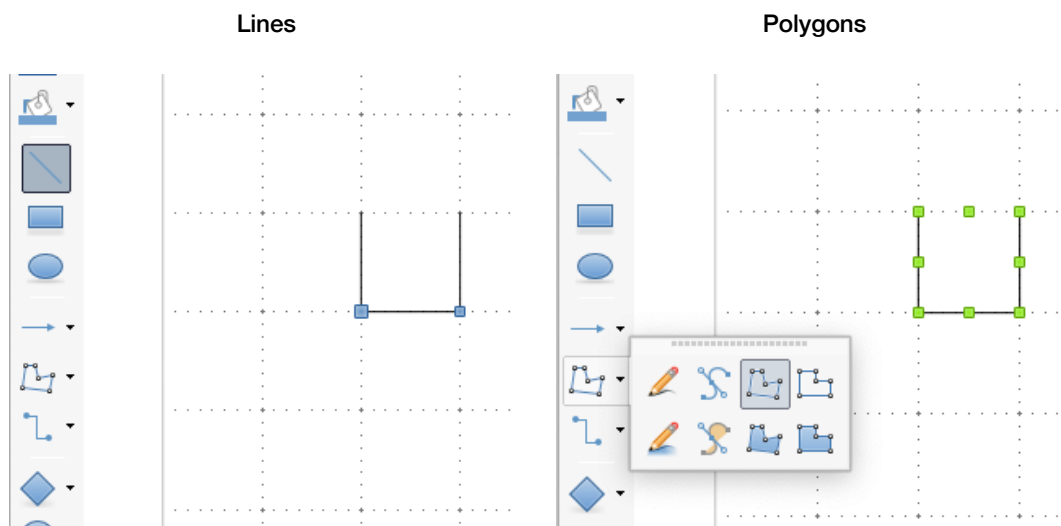
To **delete a snap line**, right-click it and choose Delete.

For more information on snapping, see:

<https://www.youtube.com/watch?v=mRx0GBF7OyU>

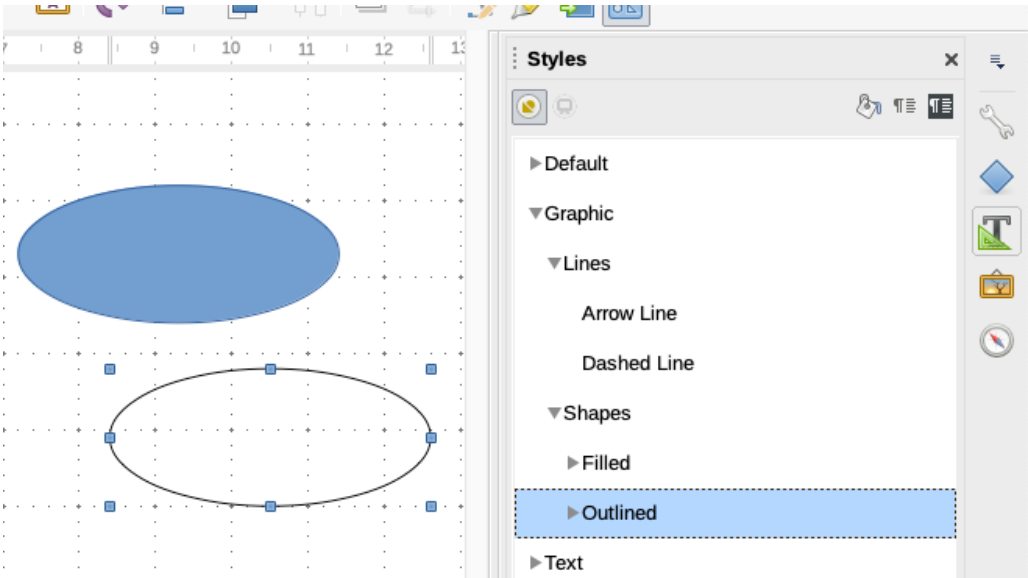
## 2.3. Lines vs. Polygons

In most cases, objects consisting of many lines connected together are drawn using individual lines. However, it is much easier to use polygons for this purpose.



## 2.4. Text and Shape Styles

Similar to MS Word, LibreOffice Draw has styles. When properly configured, styles save a lot of time when creating a diagram.



When you pick a standard shape or connector from the **Drawing** bar and draw it, the object will appear having a default formatting (for example, filled with blue for a rectangle) which is different from the styles defined in the templates. You can easily apply the template formatting by doing the following:



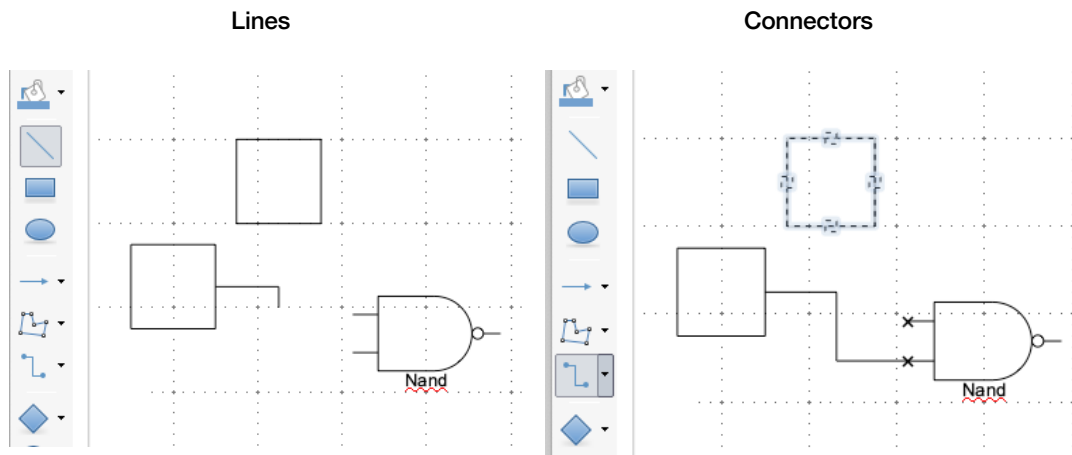
- 1. On the **Menu bar**, click **View** and make sure that **Sidebar** is checked
- 2. On the **Sidebar**, click  and then choose the style in accordance with Table 2-1.

Table 2-1. Dedicated Styles

Shape	Style	Notes
Text box	<b>Default</b> > double-click <b>Object with no fill and no line</b>	
Standard geometric shape	<b>Graphic &gt; Shapes</b> > double-click <b>Outlined</b>	
Connector	<b>Graphic &gt; Lines</b> > double-click <b>Arrow Line</b>	Now you should see arrows on both sides of your connector. To adjust arrows, on the <b>Sidebar</b> , click  , you will find arrow settings in Section <b>Lines</b> . If the settings there are greyed out, unselect your connector and select it again.
Shape from the Shape library	<b>Default</b>	If you <b>copy</b> the shape directly <b>from the Shape library</b> , usually you do not need to update the style.

## 2.5. Lines vs. Connectors

To connect two shapes, such as components of your diagram, you can use either lines or connectors. The big advantage of using connectors is that they remain attached to the "glue points" on your shapes if you move the shapes around. Please use straight (not curved) connectors in Espressif documentation.

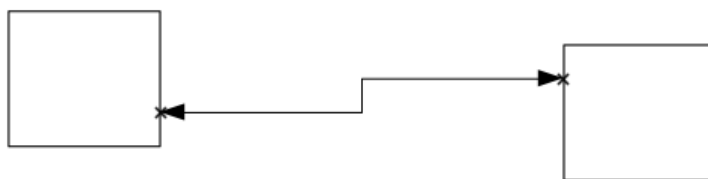


For more information, see:

[https://www.youtube.com/watch?v=CVRS\\_16RddY](https://www.youtube.com/watch?v=CVRS_16RddY)

## 2.6. Glue Points

As you might already know, connectors attach to glue points. All standard shapes have their default glue points. However, you can modify and add custom glue points to any shape.



To add or modify a glue point:

1. On the **Standard** toolbar, click , then on the appeared **Glue points** toolbar

() click *Insert Glue point*.

2. Select the shape on which you want to add/modify a glue point.
3. Add/move a glue point. To delete an existing glue point, click on it and press *Delete* on your keyboard.

For more information, see:

<https://www.youtube.com/watch?v=LUICmXeN10A>

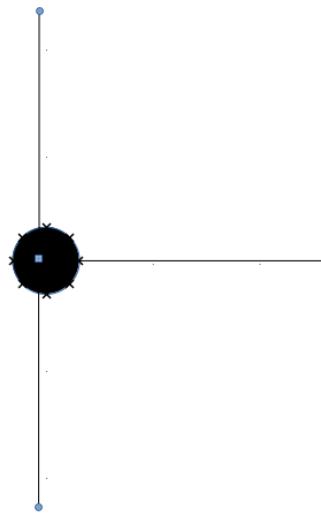
<https://wiki.documentfoundation.org/images/e/eb/DG3400-DrawGuideLO34.pdf#page=160>

## 2.7. Using Connection Dots

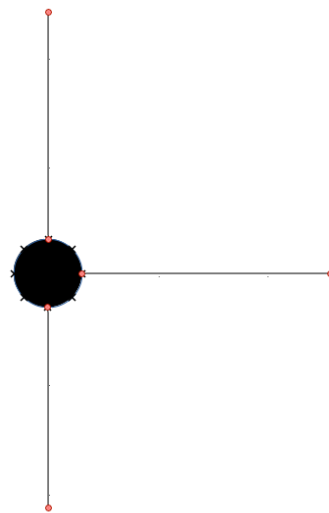
When signal lines have an actual connection in a diagram, you need to add a connection dot over connector lines.

To do it in a way friendly for subsequent edits, you are recommended not to put the dot over existing connector lines but to attach all connectors to the dot. It will help to avoid misalignments if you move the geometric shapes around.

**Dot Over Existing Connector**



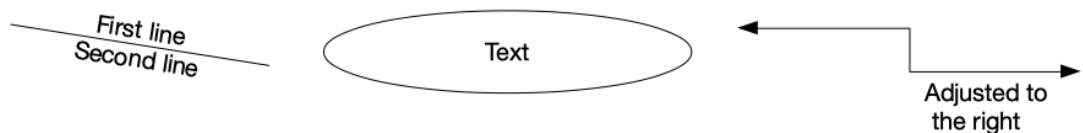
**Connectors attached to the Dot**



## 2.8. Adding Text to Shapes

It is very often that users add text over shapes in text boxes. It makes work with these shapes more complicated in many ways.

Fortunately, you can add text as a part of any shape, line, or connector by double clicking it and typing your text. If you need to adjust the position of text, you can add line breaks and spaces before or after it.



For more details, see:

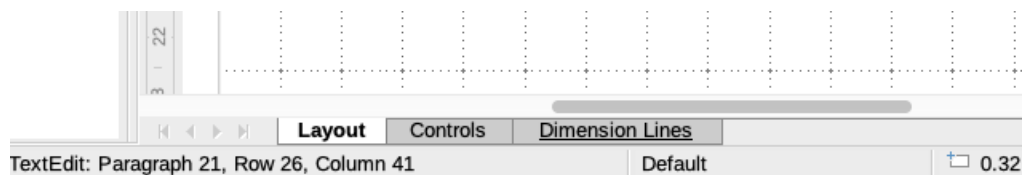
<https://www.youtube.com/watch?v=3Gm8NIm17U0&list=PL47827064C2B32CCA&index=24>

## 2.9. Layers

At the bottom of the workspace, you can see three tabs: Layout, Controls, and Dimension Lines. These tabs represent different layers that can store objects independently. In addition to the three default layers, new ones can be added.

Layers add more freedom as you can place one type of objects on one layer and manipulate them independently from other objects.

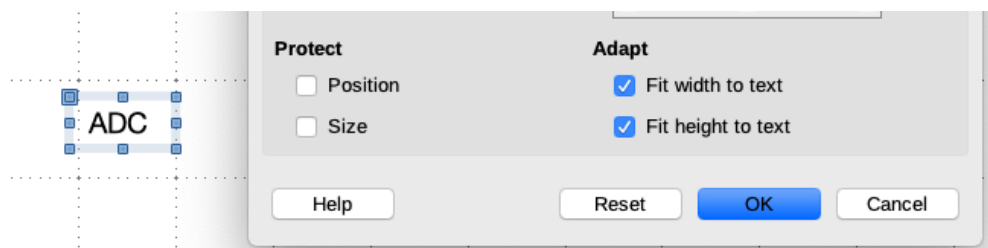
You can lock a layer to protect it from accidental editing or you can hide its objects. For this, right-click the desired layer's tab > **Modify Layer...**, select/uncheck appropriate checkboxes.



## 2.10. Protecting Shapes from Modification

Any shape can be locked in place or have its size protected. If you have many shapes close to each other, it can help you prevent accidental editing while working on these objects.

To protect a shape, right-click it > **Position and Size...**, and choose appropriate options.



## 2.11. Groups

Several individual shapes can be **united into a group**. It allows you to select the grouped shapes in one click and copy or move them around easily.

To create a group:

1. Select the shapes for grouping
2. Right-click one of them and choose **Group**

To edit a group:

1. Double-click a group to enter it (Or right-click it and choose **Enter Group**)
2. Modify shapes
3. Double-click anywhere outside of a group to exit it (Or right-click it and choose **Exit Group**)

## 2.12. Useful Keyboard Shortcuts

Navigation:

- It is strongly recommended to use a mouse instead of a laptop's trackpad
- Use scroll wheel to move vertically
- Hold *Shift* + scroll wheel to move horizontally (also works with other actions in progress)
- Hold *Command* on Mac or *Control* on Windows + scroll wheel to zoom in or out

Manipulations with shapes:

- To **select several objects**, hold *Shift* and click the desired objects one by one
- While dragging a shape, hold *Shift* to **allow only horizontal and vertical movement**
- While dragging a shape, hold *Alt* to **bypass snapping** to grid
- You can position a selected shape using arrow keys, for greater precision hold *Alt* to bypass grid snapping
- While resizing a shape, hold *Shift* to **resize proportionally**
- When rotating a shape, hold *Shift* to snap at **every 15 degrees**
- To select all shapes, hold *Command* on Mac or *Control* on Windows + *A*
- To **create a copy** of a shape (if you need another annotation line and/or text field nearby)
  - Select your shapes and start dragging them in the direction where you need them
  - Hold *Command* on Mac or *Control* on Windows to enter a copy mode
  - Release shapes where you need them
  - Release the *Command/Control* button

## 2.13. Other Guidelines

For text, use the font Helvetica Neue regular, black in color. If Helvetica Neue is not available, use Liberation Sans.

## 2.14. Known Issues

- Logic gates from Shape Library might appear distorted in proportions on some computers  
**Solution:** To export your image, turn for help to a colleague who does not have this issue
- Custom glue points might not show up even when you are trying to add a connector  
**Solution:** Update LibreOffice to the latest version

- Diagrams with width:height ratios exceeding 8:1 (9:1, 10:1 etc.) appear vertically stretched out of proportion when exported

**Solution:** Increase page height, export the image, and crop the blank area in an image editor

- Diagrams updated in both LibreOffice and OpenOffice throughout their lifecycle can exhibit strange issues due to incomplete compatibility between these Office suites. For example, a diagram exported as image file might not appear correctly.

**Solution:** Try exporting in both office suites; if no luck, it might be due to incompatibility of some shapes. Try deleting parts of a diagram and see if anything changes.