

LibreOfficeKit – bridge between your application and LibreOffice

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LibreOfficeKit

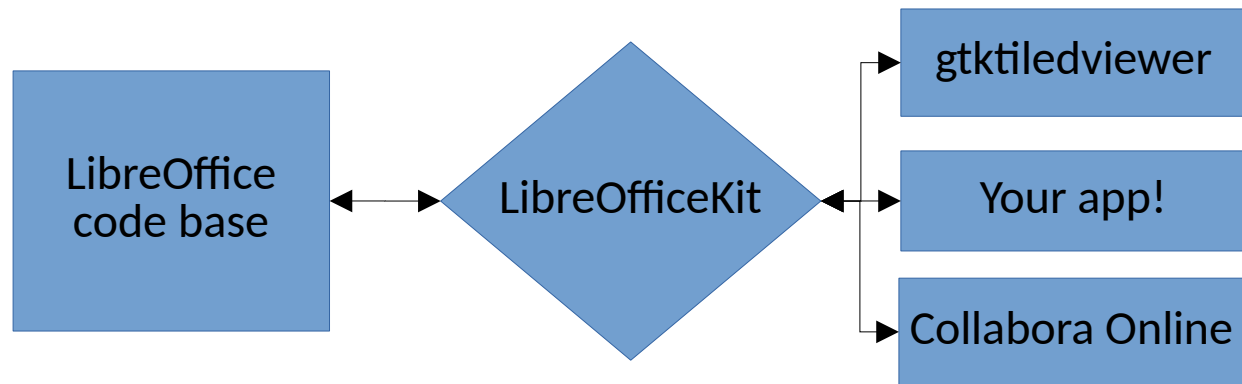
Agenda

- What is LibreOfficeKit?
- Recent improvements



What is LibreOfficeKit?

- Bridge between LibreOffice goodness and external world
- API providing tiled rendering, document manipulation, access to the UI components

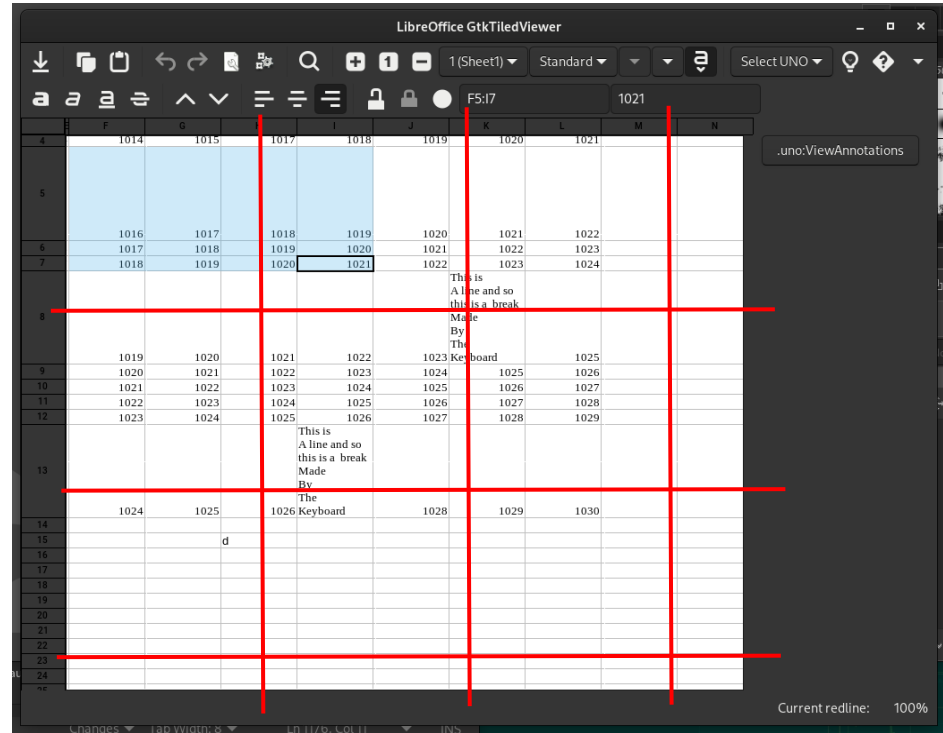




GTK tiled viewer

Example app

- Renders tiled preview of the document
- Allows basic manipulation
- Calls UNO commands



```
bin/run gtktilviewer ---path=.../instdir/program .../spreadsheet.ods
```



LibreOfficeKit APIs

- Interfaces defined in **include/LibreOfficeKit/**
- Implementation in **desktop/source/lib/init.cxx**
- README in **libreofficekit/README.md**
- External code can invoke actions, render tiles using **LibreOfficeKitDocument** object.
- Some actions may trigger callbacks (tiles invalidation, selection changed), see possible callbacks in **include/LibreOfficeKit/LibreOfficeKitEnums.h**
- Callbacks usually return simple strings or JSON



LibreOfficeKit APIs

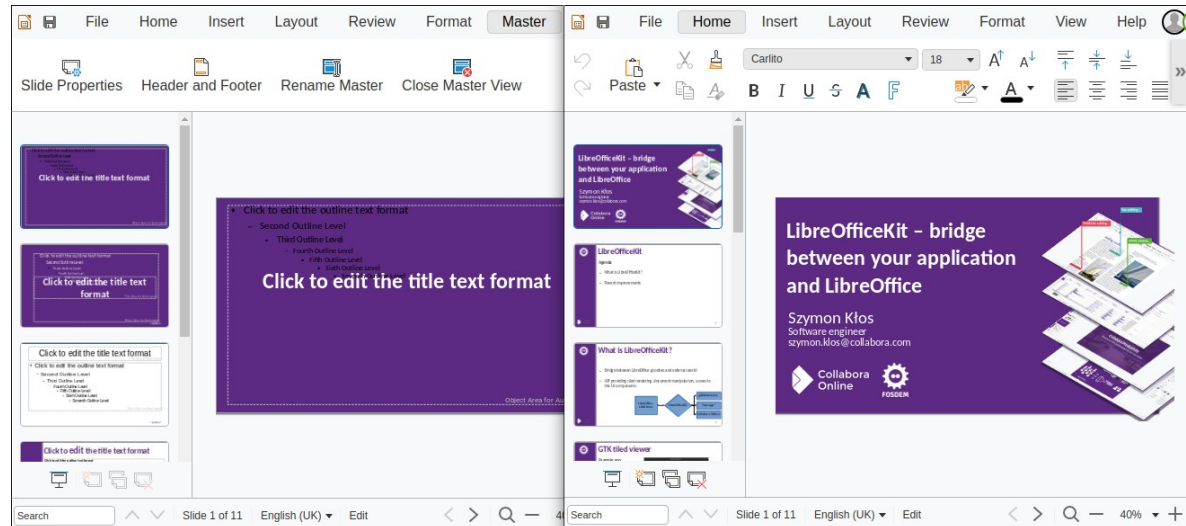
- We try to keep LibreOfficeCode the same for tiled rendering mode, but sometimes it's impossible
- In such cases code is conditional, guarded by **`comphelper::LibreOfficeKit::isActive()`**
- Example: tiled rendering only draws the document's content – without selections. Selections are sent via `LOK_CALLBACK_TEXT_SELECTION`

Recent improvements



Master Page mode - rendering

- Problem: tile with the same number, with the same coordinates, but in different “editing mode”
- Two users can see the same slide in different mode and edit them as it would be independent piece of presentation





Master Page mode - rendering

- API for rendering a tile was changed (added mode parameter)
- Algorithm which selects view used for rendering selected tile was adjusted
- If there is available view in selected mode – use it!
- This allows to avoid unwanted side effects when switching edit mode

```
lok: masterpage: Introduce mode property to tile rendering
commit 931e3d204e59ccb2e9c479477e6e66b2c098924f
```

```
@@ -3770,6 +3790,7 @@ static void doc_paintTileToCGContext(LibreOfficeKitDocument* pThis,
    static void doc_paintPartTile(LibreOfficeKitDocument* pThis,
                                unsigned char* pBuffer,
                                const int nPart,
+                               const int nMode,
                                const int nCanvasWidth, const int nCanvasHeight,
```



Editing in-place cells with overflow

- Problem: when editing cell with overflow it was visible only in the editor's view. Any interaction from other users could render alternative version without edited field, what caused flickering.

The image shows two side-by-side screenshots of a spreadsheet editor. The left screenshot shows a cell in edit mode with a red box highlighting the text 'THIS IS OVERFLOW'. The right screenshot shows the same cell in view mode with a red box highlighting the text 'THIS IS OVERFLOW'. The text is truncated in the view mode, demonstrating the overflow issue.

| H | I | J | K | L | M |
|------|------|------|---|------|---|
| 1019 | 1020 | 1021 | 1022 | 1023 | |
| 1020 | 1021 | 1022 | 1023 | 1024 | |
| | | | This is A line and so this is a break Made | | |
| | | | By The | | |
| 1021 | 1022 | 1023 | Keyboard | 1025 | |
| 1022 | 1023 | 1024 | | 1026 | |
| 1023 | 1024 | 1025 | THIS IS | 1027 | |
| 1024 | 1025 | 1026 | OVERFLOW | 1028 | |
| 1025 | 1026 | 1027 | | 1029 | |

| I | J | K | L |
|------|------|---|------------|
| 1020 | 1021 | 1022 | 1 |
| 1021 | 1022 | 1023 | 1 |
| | | This is A line and so this is a break Made | |
| | | By The | |
| 1022 | 1023 | Keyboard | |
| 1023 | 1024 | | |
| 1024 | 1025 | THIS IS | LocalUser2 |
| 1025 | 1026 | OVERFLOW | |
| 1026 | 1027 | | |



Editing in-place cells with overflow

- We have to render in-place editing for all the views so tiles are always identical
- Edits are rendered always in the same order
- We also send cursor positions in the extended area what was missing before

| 1020 | 1021 | 1022 | 1023 | 1024 | 1024 | 1024 | 1025 | 1 |
|------|---|------|---|------|------|------|----------|---|
| | | | This is A line and so this is a break Made | | | | | This is A line and so this is a break Made |
| | | | By The Keyboard | | | | | By The Keyboard |
| 1021 | 1022 | 1023 | | 1025 | 1022 | 1023 | | |
| 1022 | 1023 | 1024 | | 1026 | 1023 | 1024 | | |
| 1023 | 1024 | 1025 | THIS IS | 1027 | 1024 | 1025 | THIS IS | LocalUser2 |
| 1024 | 1025 | 1026 | OVERFLOW | 1028 | 1025 | 1026 | OVERFLOW | |
| 1025 | 1026 | 1027 | | 1029 | 1026 | 1027 | | |
| | This is A line and so this is a break | | | | | | | is ne and so is a break |

lok: sc: render expanded EditEngine when editing in-place
commit 61d716901def607f01ab272996bf40b55642d650



Improved rendering of slide previews

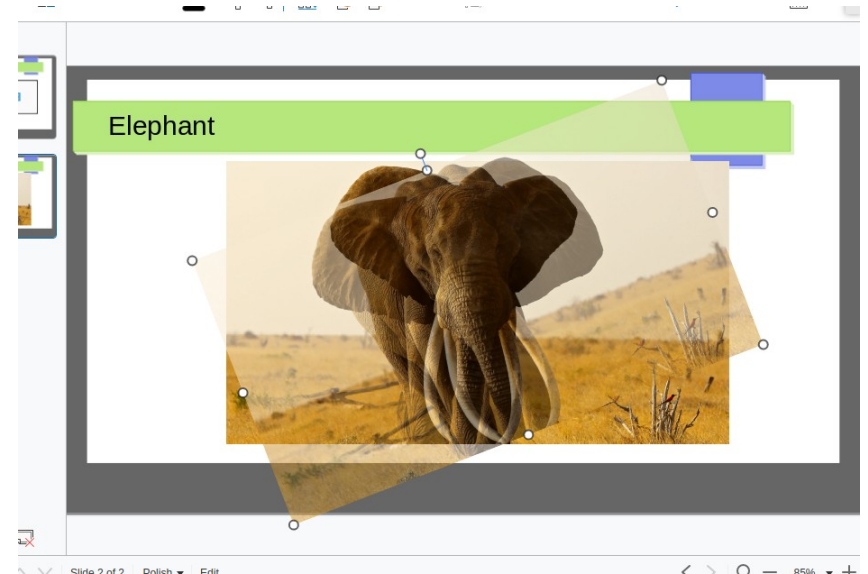
- When we render slide previews – we need to select some view
- Old implementation was using always first one
- Problem was that when first user was editing any text field
 - it was rendered for all users in the slide preview
- Algorithm for view selection was improved:
we use any view which is non-editor with preferred view which already is watching the requested slide

```
lok: don't render active textbox on all slides  
commit 81df11b1e5af610133874d925899995a07364bc
```



Optimized iamge previews rendering

- Changed `doc_renderShapeSelection` implementation
- Previews are now rendered with maximum resolution: 1280x720
- This increased performance and UX when requesting the preview of large image embodied in the document
- Can be used while rotating an image





Exposed formulabar's content

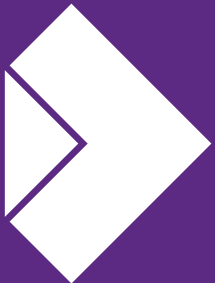
- In the past formulabar was send as bitmap
- Now uses JSDialog – can be presented as native text field
- Events are sent as JSON with text content and selections

The screenshot shows a spreadsheet application interface. At the top, there is a toolbar with various icons. Below the toolbar, a formula bar is visible, containing the text `= SIN(RADIANS($B6))`. The spreadsheet grid below has columns labeled A through F and rows labeled 1 through 7. Cell B6 is selected, and its value '16' is displayed in the formula bar. A tooltip for cell E6 shows the value '1.5000'. The spreadsheet data is as follows:

| | A | B | C | D | E | F |
|---|---|----------------|--------|--------|--------|---|
| 1 | | | | | | |
| 2 | | Point interval | 16 | | | |
| 3 | | | | | | |
| 4 | | X | Y (1) | Y (2) | | |
| 5 | | 0 | 0.0000 | 0.0000 | | |
| 6 | | 16 | 0.275 | 0.3445 | 1.5000 | |
| 7 | | 32 | 0.5299 | 0.6624 | | |



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Thank you!

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