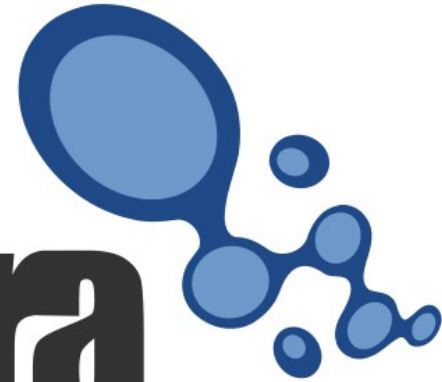


Collabora



**InteropGrabBag in
LibreOffice Writer**

Miklos Vajna

2014-02-01



Filter problems

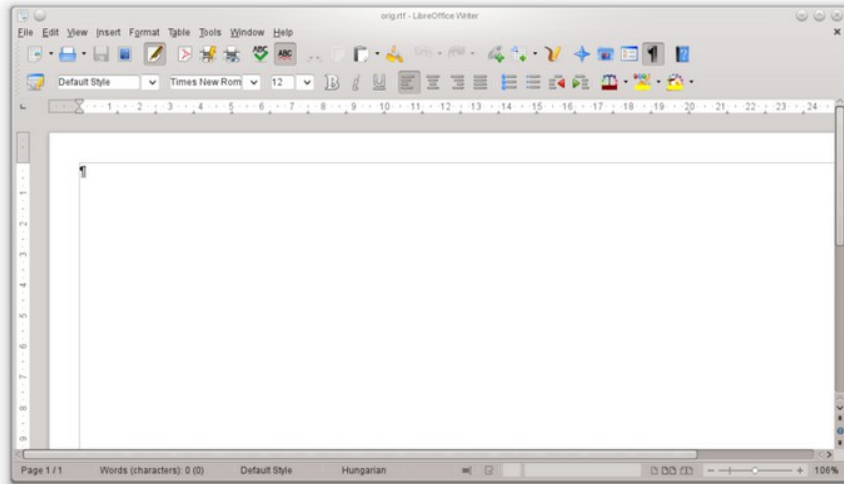


What is a filter problem?

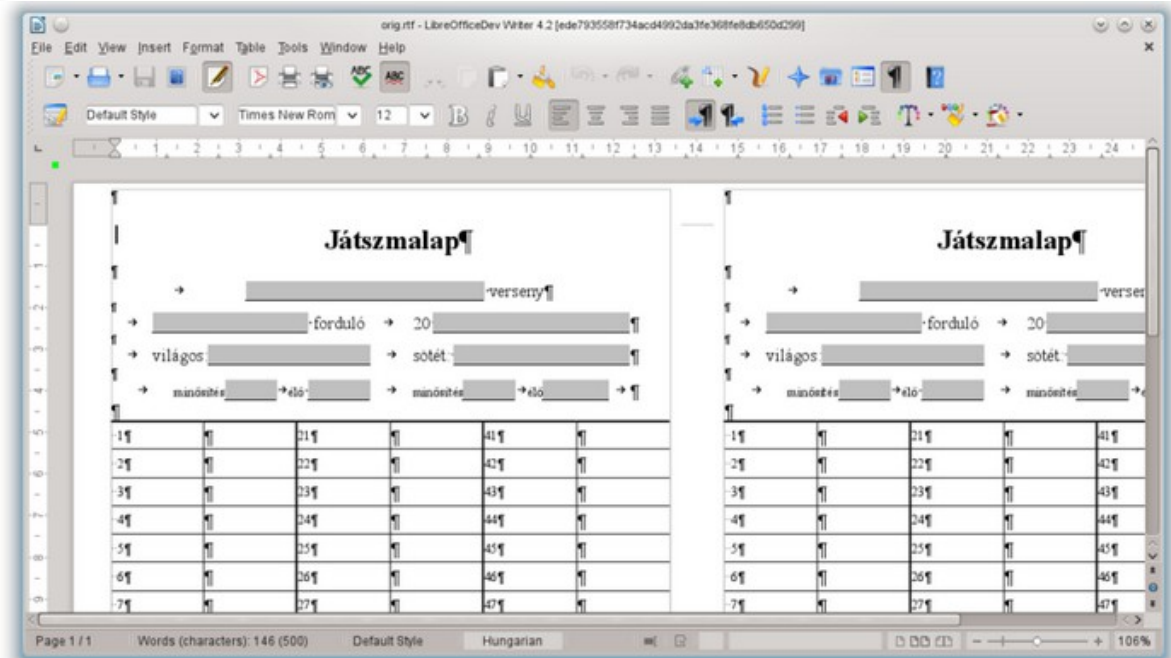
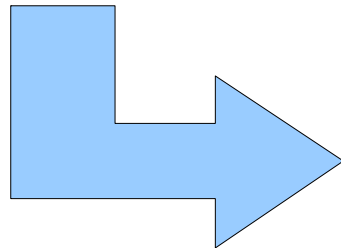
- Filters map between an input/output stream and the document model
- A given filter: given file format
- If a feature in a file format is not roundtripped perfectly through the document model



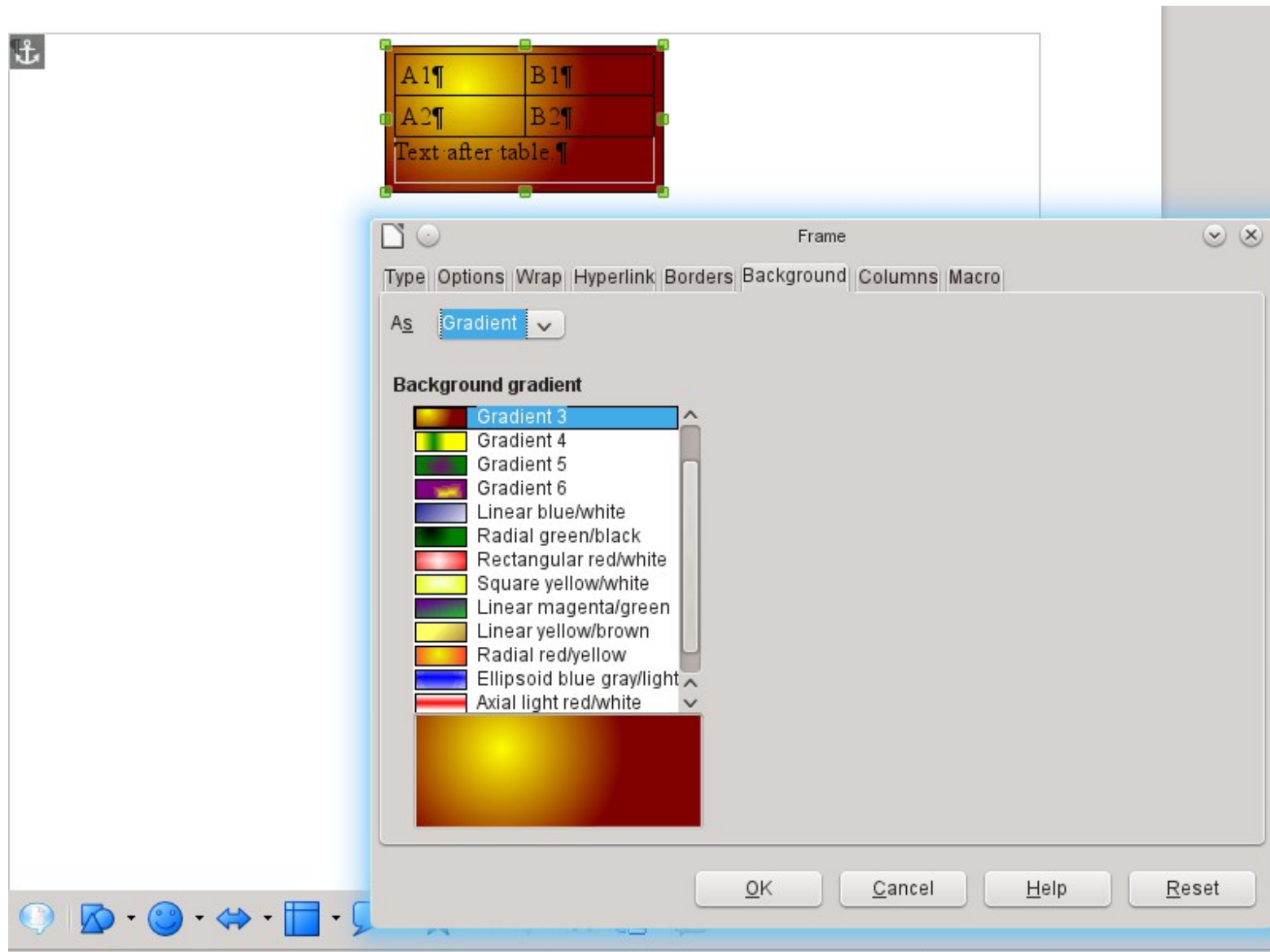
Case #0: feature is already in core



- RTF import,
groupshape support



Case #1: Implement the feature in core



Case #2: Import the result of the feature in the filter

- E.g. Table styles, document themes
- SmartArt import
- On import, apply the result of that as direct formatting
- Better, than nothing, but no real editing can be performed



InteropGrabBag



Case #3: Just preserve it

- If a feature is completely unsupported by core, it makes sense to first just preserve it
- Use case:
 - Long document
 - Full of complicated features
 - Just want to correct a typo



We do it for ODF already

- `css::xml::ParaUserDefinedAttributesSupplier`
- `css::xml::TextUserDefinedAttributesSupplier`
- `css::xml::UserDefinedAttributesSupplier`
- “The idea behind this property is that a parser can throw away all attributes that it cannot handle by itself (...) can be written back without loss.”
- WW8 as well:
`SwTOXBase::maMSTOCExpression`



Why a new API?

- Need separate storage
 - ODF → foreign format
 - Would need manual mapping anyway
- Need a more flexibly data structure
 - UserDefinedAttributes is just a string-string map
 - We want to store nested structures as well



The InteropGrabBag API

- New SfxPoolItem: SfxGrabBagItem
- Writer: RES_{CHR,PAR}ATR_GRABBAG, etc.
- UNO: InteropGrabBag property
 - Type: css::beans::PropertyValues
 - Effectively a string-any map



A set of bags

- Each UNO object may implement it, currently supported:
 - `css::document::OfficeDocument`
 - `css::drawing::Shape`
 - `css::style::CharacterProperties`
 - `css::style::ParagraphProperties`
 - `css::style::Style`
 - `css::text::BaseFrameProperties`



The danger of hidden properties

- Problem: e.g. paragraph border is not supported, hidden “big black border” property
- User copy&pastes it elsewhere
- Result: pasted paragraph still has that property, probably not wanted
- Solution: clear InteropGrabBag on copying / when object is altered



Just for Writer?

- The API is generic to be used in Calc, Impress, etc.
- Currently mostly implemented for Writer only
- Just for OOXML?
 - It's the only user ATM
 - Different properties can happy co-exist
 - Most of current keys are prefixed with OOX anyway



Conclusions

- The end result: much improved OOXML roundtrip
- Now perfect roundtrip examples (incomplete list):
 - Document themes
 - SmartArt
 - Table styles

