



Collabora Productivity

Resurrecting Personas for LibreOffice

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Collabora Productivity

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Work

- Working on the core & UI
- Since Dec 2018
- Was @Pardus project before

Community

- LibreOffice certified developer
- Long-time GNOME contributor
- Member of The Document Foundation & the GNOME Foundation

Mozilla Themes, aka Personas

Tools > Options > Personalization > Load Firefox theme

- Allows applying Mozilla Firefox themes on LibreOffice
- Can select a pre-installed theme
- Can search online for new ones
- Changes background of main menus, and toolbars
- Relies heavily on Mozilla add-ons API & web content

Past

Some of the issues

- Performance & reliability issues
- Error-prone
- Unrelated/incomplete categories
- Getting broken & fixed every now and then
- Simply not working / is practically dead

Performance & Reliability Issues

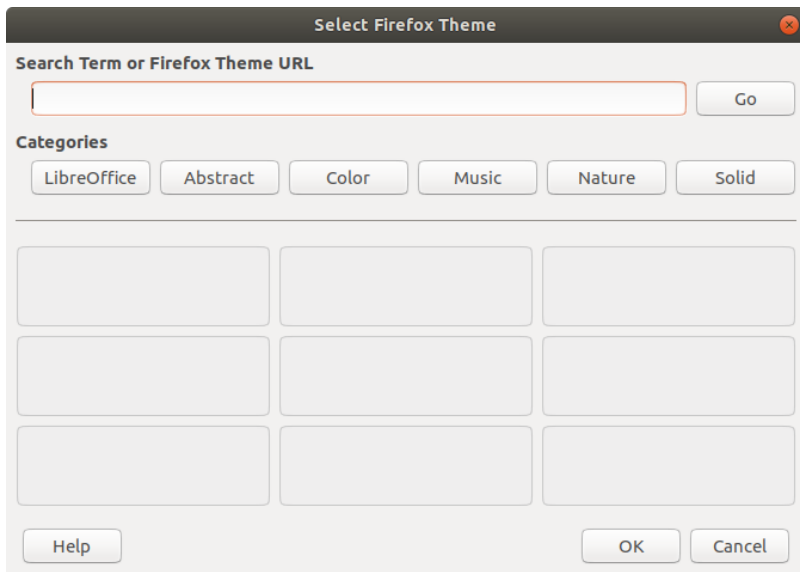
- **~40 seconds to search for a keyword**
- **Fetching whole html pages**
- **Relying on the design & content of the html (easily broken)**
- **Multiple & repetitive string searches**
- **Overwriting existing data every time**
- **Using unreliable lib for download**

Categories

Themes

Change your browser's appearance. Choose from thousands of themes to give Firefox the look you want.

Categories



- 15 on Mozilla & only 6 on LibreOffice
- There is no LibreOffice category
- Not even actual categories!

HTML Parsing with String Search

```
/// Parse the Persona web page, and find where to get the bitmaps + the color values.
static bool parsePersonaInfo( const OString &rBufferArg, OUString *pHeaderURL, OUString *pFooterURL,
                             OUString *pTextColor, OUString *pAccentColor, OUString *pPreviewURL,
                             OUString *pName )
{
    // tdf#115417: buffer retrieved from html response can contain &quot; or &#34;
    // let's replace the whole buffer with last one so we can treat it easily
    OString rBuffer = rBufferArg.replaceAll(OString("&quot;"), OString("&#34;"));
    // it is the first attribute that contains "persona="
    sal_Int32 persona = rBuffer.indexOf( "\"type\": \"persona\"" );
    if ( persona < 0 )
        return false;

    // now search inside
    *pHeaderURL = searchValue( rBuffer, persona, "\"headerURL\": \"\" );
    if ( pHeaderURL->isEmpty() )
        return false;

    *pFooterURL = searchValue( rBuffer, persona, "\"footerURL\": \"\" );
    if ( pFooterURL->isEmpty() )
        return false;

    *pTextColor = searchValue( rBuffer, persona, "\"textcolor\": \"\" );
    if ( pTextColor->isEmpty() )
        return false;

    *pAccentColor = searchValue( rBuffer, persona, "\"accentcolor\": \"\" );
    if ( pAccentColor->isEmpty() )
        return false;

    *pPreviewURL = searchValue( rBuffer, persona, "\"previewURL\": \"\" );
    if ( pPreviewURL->isEmpty() )
        return false;

    *pName = searchValue( rBuffer, persona, "\"name\": \"\" );
    return !pName->isEmpty();
}
```



What Could Go Wrong?

```
diff --git a/cui/source/options/personalization.cxx b/cui/source/options/personalization.cxx
index cf7005b10ee7..4baac93ec917 100644
--- a/cui/source/options/personalization.cxx
+++ b/cui/source/options/personalization.cxx
@@ -555,14 +555,14 @@ static OUString searchValue( const OString &rBuffer, sal_Int32 from, const OString &rIdentifier,
    where += rIdentifier.getLength();

-   sal_Int32 end = rBuffer.indexOf( "&#34;", where );
+   sal_Int32 end = rBuffer.indexOf( "\"", where );
   if ( end < 0 )
       return OUString();

   OString aOString( rBuffer.copy( where, end - where ) );
   OUString aString( aOString.getStr(), aOString.getLength(), RTL_TEXTENCODING_UTF8, OSTRING_TO_OUSTRING_CVTFLAGS );

-   return aString.replaceAll( "\\/", "/" );
+   return aString.replaceAll( "\\u002F", "/" );
}

/// Parse the Persona web page, and find where to get the bitmaps + the color values.
@@ -574,32 +574,32 @@ static bool parsePersonaInfo( const OString &rBufferArg, OUString *pHeaderURL, O
   // let's replace the whole buffer with last one so we can treat it easily
   OString rBuffer = rBufferArg.replaceAll( OString("&quot;"), OString("&#34;"));
   // it is the first attribute that contains "persona="
-   sal_Int32 persona = rBuffer.indexOf( "data-browsertheme=\"{" );
+   sal_Int32 persona = rBuffer.indexOf( "\"type\": \"persona\"" );
   if ( persona < 0 )
       return false;

   // now search inside
-   *pHeaderURL = searchValue( rBuffer, persona, "&#34;headerURL&#34;:&#34;" );
+   *pHeaderURL = searchValue( rBuffer, persona, "\"headerURL\": \"" );
   if ( pHeaderURL->isEmpty() )
       return false;

-   *pFooterURL = searchValue( rBuffer, persona, "&#34;footerURL&#34;:&#34;" );
+   *pFooterURL = searchValue( rBuffer, persona, "\"footerURL\": \"" );
   if ( pFooterURL->isEmpty() )
       return false;

-   *pTextColor = searchValue( rBuffer, persona, "&#34;textcolor&#34;:&#34;" );
+   *pTextColor = searchValue( rBuffer, persona, "\"textcolor\": \"" );
   if ( pTextColor->isEmpty() )
       return false;
```



I want it fresh!

```
// read the persona specification
// NOTE: Parsing for real is an overkill here; and worse - I tried, and
// the HTML the site provides is not 100% valid ;- )
const sal_Int32 BUF_LEN = 8000;
uno::Sequence< sal_Int8 > buffer( BUF_LEN );
OStringBuffer aBuffer( 64000 );

sal_Int32 nRead = 0;
while ( ( nRead = xStream->readBytes( buffer, BUF_LEN ) ) == BUF_LEN )
    aBuffer.append( reinterpret_cast< const char* >( buffer.getConstArray() ), nRead );

if ( nRead > 0 )
    aBuffer.append( reinterpret_cast< const char* >( buffer.getConstArray() ), nRead );

xStream->closeInput();

// get the important bits of info
OString aHeaderURL, aFooterURL, aTextColor, aAccentColor, aPreviewURL, aName;

if ( !parsePersonaInfo( aBuffer.makeStringAndClear(), &aHeaderURL, &aFooterURL, &aTextColor, &aAccentColor, &aPreviewURL, &aName ) )
    return false;

// copy the images to the user's gallery
OString gallery = "${SBRAND_BASE_DIR}/" LIBO_ETC_FOLDER "/" SAL_CONFIGFILE( "bootstrap" ) "::UserInstallation";
rtl::Bootstrap::expandMacros( gallery );
gallery += "/user/gallery/personas/" + aName + "/";
osl::Directory::createPath( gallery );

OString aPreviewFile( INetURLObject( aPreviewURL ).getName() );

try {
    xFileAccess->copy( aPreviewURL, gallery + aPreviewFile );
}
catch ( const uno::Exception & )
{
    return false;
}
*pPreviewFile = gallery + aPreviewFile;
*pPersonaSetting = aName + ";" + aHeaderURL + ";" + aFooterURL + ";" + aTextColor + ";" + aAccentColor;
return true;
}
```



What categories?

```
IMPL_LINK( SelectPersonaDialog, SearchPersonas, Button*, pButton, void )
{
    /*
     * English category names should be used for search.
     * These strings should be in sync with the strings of
     * RID_SVXSTR_PERSONA_CATEGORIES in personalization.hrc
     */
    static const OUStringLiteral vSuggestionCategories[] =
        {"LibreOffice", "Abstract", "Color", "Music", "Nature", "Solid"};

    OUString searchTerm;
    if( m_pSearchThread.is() )
        m_pSearchThread->StopExecution();

    if( pButton == m_pSearchButton )
        searchTerm = m_pEdit->GetText();
    else
    {
        for ( sal_uInt32 i = 0; i < CATEGORYCOUNT; ++i)
        {
            if( pButton == m_vSearchSuggestions[i] )
            {
                // Use the category name in English as search term
                searchTerm = vSuggestionCategories[i];
                break;
            }
        }
    }
}
```



Dilemma

Keep it

- Little, cute feature
- Adds personal touch
- “My own” feeling
- Thousands of choices
- Users & designers chasing
- We have a history!

Kill it

- Gets broken all the time
- Needs to chase Moz API & Web Design changes
- Users & designers chasing
- Headacke for QA
- No developer to maintain

We have a history!

```
commit ecc43f06a94587e8808c7edf73eae23e5243dc85
Author: Muhammet Kara <muhammet.kara@pardus.org.tr>
Date: Mon Aug 8 14:00:28 2016 +0300

Update api URL for mozilla personas

Currently, entering a search term or clicking on
the category buttons on the Firefox Theme selection
dialog of Personalization option doesn't work at all.

With this url, it returns some results of firefox personas
which are applicable to LibreOffice.

Change-Id: Ie4da58cd987a1834dee969c09367229d3b69a47a
Reviewed-on: https://gerrit.libreoffice.org/27986
Tested-by: Jenkins <ci@libreoffice.org>
Reviewed-by: jan iversen <jani@documentfoundation.org>
Tested-by: jan iversen <jani@documentfoundation.org>
```



Too cute to be killed!



We have a mission now!

- **Fix the current implementation**
- **Improve the mechanism under-the-hood**
- **Switch to the new API**
- **Make visual improvements**

Make it work again

```
commit e98ac43ec42ff398ad489d6719960d595f0327be
Author: Muhammet Kara <muhammet.kara@pardus.org.tr>
Date: Thu Sep 13 14:59:28 2018 +0300

    tdf#118881: Fix HTML parsing for personas

    This is just a band-aid to make personas feature
    work again.

    Change-Id: I80b54fe9a8ddc93d93744fcf2c7f739d81f6face
    Reviewed-on: https://gerrit.libreoffice.org/60432
    Tested-by: Jenkins
    Reviewed-by: Heiko Tietze <tietze.heiko@gmail.com>
    Tested-by: Heiko Tietze <tietze.heiko@gmail.com>
    Reviewed-by: Muhammet Kara <muhammet.kara@pardus.org.tr>
```



Progress

Improve the under-the-hood & switch

- Do not crash when there are more default personas than intended
- Use slug instead of name to store Personas
- Make use of the already defined constants for personas
- tdf#60543: Remember the URL of the currently applied persona
- Ensure settings consistency for default personas
- Separate persona download thread
- Do not re-download the already existing images
- Modernize personas under-the-hood - The search

Progress (continue...)

Improve the under-the-hood & switch (continue...)

- tdf#101629: Handle invalid urls and search strings for Personas
- tdf#99776: Preload a persona category initially
- tdf#120506: Get rid of unnecessary accentcolor parsing for personas
- Use curl while getting the actual persona
- Increase number of default personas to 6

Progress (continue...)

Visual / additional improvements

- tdf#120475: Sync persona categories with Mozilla
- tdf#120746: Show the name of the persona as tooltip in the search results
- Towards solving tdf#120747: Remember the preview file of persona
- tdf#120743: Rename the 'Select Theme' button to clarify
- ...

And now?

- **Works more fluently**
- **Caches downloaded files & doesn't overwrite**
- **A search from ~40 seconds down to ~3 seconds**
- **Easier to extend & improve**

Meta Bug

Bug 86544 (Firefox-Themes) - [META] Personalization: New browser for Firefox themes improvements [\(edit\)](#)

Status: NEW [\(edit\)](#)

Alias: Firefox-Themes [\(edit\)](#)

Product: LibreOffice

Component: UI [\(show other bugs\)](#)

Version: unspecified
(earliest affected)

Hardware: Other All

Importance: medium enhancement

Assignee: Not Assigned [\(edit\)](#) [\(take\)](#)

URL:

Whiteboard:

Keywords:

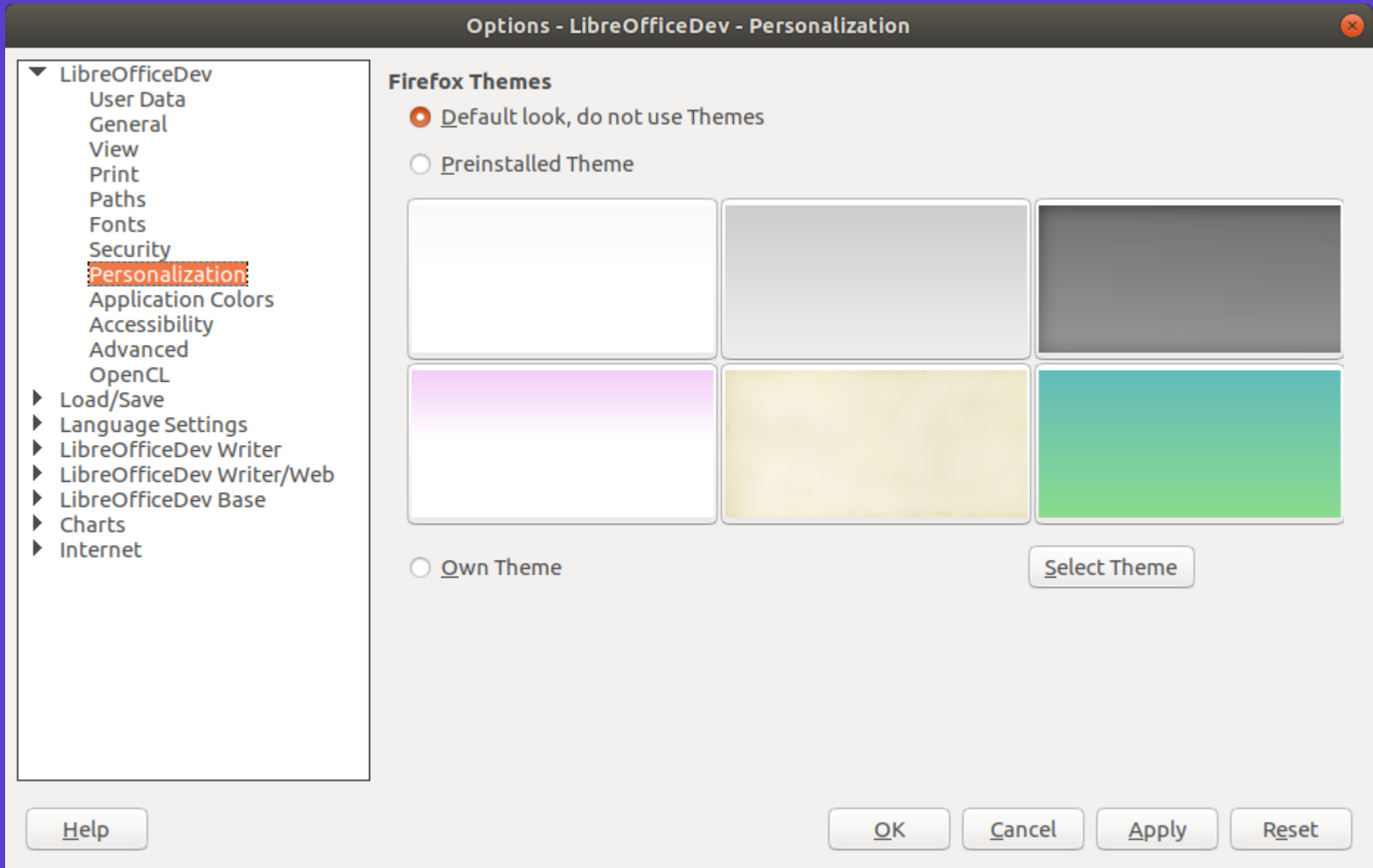
Personal Tags:

Depends on: [59210](#) [61205](#) [61311](#) [86610](#) [98467](#) [99897](#) [120406](#) [120741](#) [120747](#) [121004](#) [121174](#) [121517](#) [121937](#) [122341](#) [59611](#) [60543](#) [88502](#) [90572](#) [93195](#) [93599](#) [99776](#) [99837](#) [101629](#) [101733](#) [107266](#) [107417](#) [113385](#) [117866](#) [118881](#) [119127](#) [119868](#) [120475](#) [120506](#) [120742](#) [120743](#) [120745](#) [120746](#) [121289](#) [122242](#) [122288](#) [123050](#) [\(edit\)](#)

Blocks: [UI-Theming](#) [\(edit\)](#)

Show dependency [tree](#) / [graph](#)

Look & Feel



Look & Feel

Select Firefox Theme

Search term or address Find

Category:

Help



What's Next?



Collabora Productivity

Thank you!

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