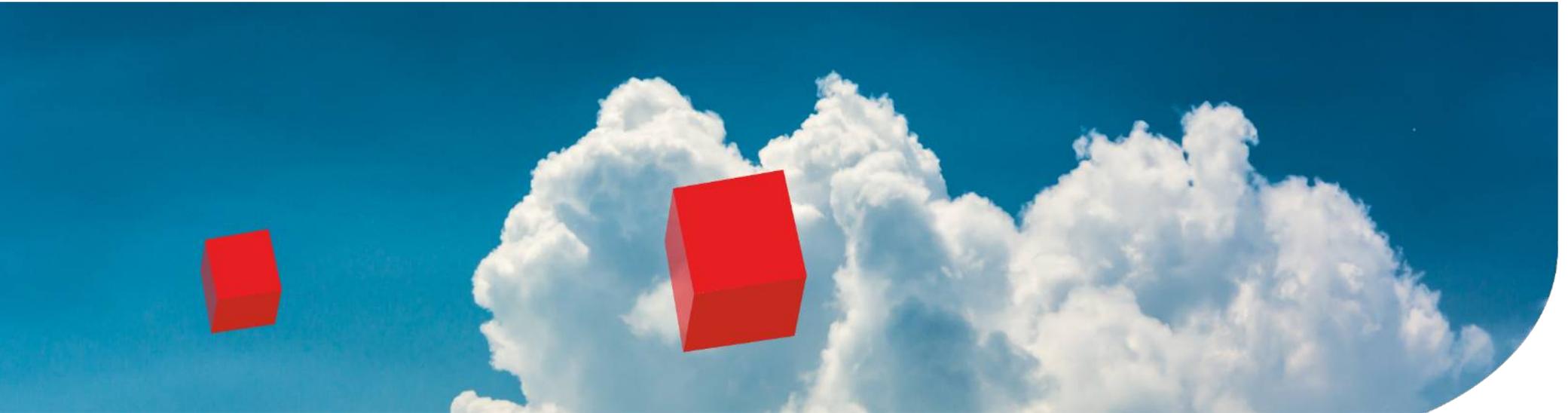# LIBREOFFICE EXTENSIONS WITH JAVA MODULE SUPPORT

CIB software GmbH

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# What's new?

- Java 9 introduced a new module system „Jigsaw"

- `module-info.java`:

```
module org.codefx.foo {
    requires org.codefx.bar;
    exports org.codefx.foo.api;
}
```

# Java Modules in LibreOffice

- Problem (tdf#117331)

# Java Modules in LibreOffice – Solution Part #1

- Fix the „split package issue" by merging `jurt.jar` and `unoil.jar` into `ridl.jar`

```
commit     ae855bf48163ff64d94cfc34aff8e37abdb5518d          [log]
author     Samuel Mehrbrodt <Samuel.Mehrbrodt@cib.de>        Wed Dec 11 13:23:43 2019 +0100
committer  Stephan Bergmann <sbergman@redhat.com>            Tue Feb 04 22:03:54 2020 +0100
    tree   cdfc726f47cc69c265288936157295c94d9ec949
  parent   494092dc0c2f6fd04dbd973d6f76f1df720dbcf7 [diff]
```

```
tdf#117331 Merge jurt and unoil into ridl

jurt.jar and unoil.jar are kept as effectively empty jars, each with a

   Class-Path: ridl.jar

in their meta-inf/manifest.mf, so that 3rd-party code loading them (with or
without also loading ridl.jar) will still have access to their content.
```

# Java Modules in LibreOffice – Solution Part #2

- Create `libreoffice.jar` as single source of truth

```
commit   35518c92365cc183ba6cce2a4d284a130c0ca13f          [log]
author   Samuel Mehrbrodt <Samuel.Mehrbrodt@cib.de>        Thu Mar 26 15:04:47 2020 +0100
committer Stephan Bergmann <sbergman@redhat.com>           Wed May 06 14:48:21 2020 +0200
tree     f3de8bdec6331ce933126336cf701dcaffe9b662
parent   6bf3517d60272bdec878bb6dde92a47b45a3f866  [diff]
```

```
Move all public Java classes to libreoffice.jar

This moves the classes from juh.jar and ridl.jar to libreoffice.jar

The goal is to have one single jar (and Java module, will be added later)
which developers can include to work with LO.

juh.jar and ridl.jar are kept as basically empty jars with libreoffice.jar
on its classpath to keep backwards compatibility.

This is a continuation of ae855bf48163ff64d94cfc34aff8e37abdb5518d
and a preparation to have Java 9 module support.
```

# Java Modules in LibreOffice – Solution Part #4

- Create module info for libreoffice.jar and unoloader.jar

```
module org.libreoffice.uno
{
    requires org.libreoffice.unoloader;

    exports com.sun.star.accessibility;
    exports com.sun.star.animations;
    exports com.sun.star.auth;
    exports com.sun.star.awt;
    exports com.sun.star.awt.grid;
    exports com.sun.star.awt.tab;
    exports com.sun.star.awt.tree;
    exports com.sun.star.beans;
    exports com.sun.star.bridge;
    exports com.sun.star.bridge.oleautomation;
    exports com.sun.star.chart;
    exports com.sun.star.chart2;
    exports com.sun.star.chart2.data;
    exports com.sun.star.comp.bridgefactory;
    exports com.sun.star.comp.connections;
```

# Java Modules in LibreOffice

- Available since LibreOffice 7.0
  - https://wiki.documentfoundation.org/ReleaseNotes/7.0#API_changes

## Java support

- The four Java jars `juh.jar`, `jurt.jar`, `ridl.jar`, and `unoil.jar` are now combined into a single `libreoffice.jar`. The four jars provided classes in overlapping packages, so could not be used with the Java module system. For backwards compatibility, `juh.jar`, `jurt.jar`, `ridl.jar`, and `unoil.jar` are still present as empty stubs referencing the combined `libreoffice.jar`. tdf#117331 (Stephan Bergmann; Samuel Mehrbrodt, CIB)
- Java Modules are now supported (using JRE >= 9). The following modules are available:
  - libreoffice.jar: `org.libreoffice.uno`
  - unoloader.jar: `org.libreoffice.unoloader`

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**https://libreoffice.cib.de**