

# Developer Guide

## ModifRoundtrip

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## 1 ModifRoundtrip-project contents

The ModifRoundtrip-project is compounded of the following folders:

1. eclipseMR: eclipse application
2. ModifRoundtrip: source code and plug-ins

## 2 eclipseMR folder contents

It is the eclipse application dedicated to handle ModifRoundtrip projects. It integrates some eclipse Modeling Components (OCL and Xtext), some ModifRoundtrip plug-ins (ModifPlugin and xtext.modif) and a JRE (jre7).

The content of eclipseMR is the following:

- configurations
  - .settings
  - org.eclipse.equinox.simpleconfigurator
  - org.eclipse.equinox.source
  - org.eclipse.update
  - config.ini
- dropins
- features
  - all eclipse features
- **jre7**
- p2
  - org.eclipse.equinox.p2.core
  - org.eclipse.equinox.p2.engine
- plugins
  - all eclipse plug-ins
  - **ModifPlugin\_1.0.0.1.jar**
  - **ModifPlugin.edit\_1.0.0.1.jar**
  - **ModifPlugin.editor\_1.0.0.1.jar**
  - **ModifPlugin.tests\_1.0.0.1.jar**
  - **xtext.modif\_1.0.0.1.jar**
  - **xtext.modif.sdk\_1.0.0.1.jar**

- **xtext.modif.tests\_1.0.0.1.jar**
- **xtext.modif.ui\_1.0.0.1.jar**
- readme
  - readme\_eclipse.html
- about.html: eclipse license
- artifacts.xml
- eclipse.exe
- eclipse.ini
- eclipssec.exe
- epl-v10.html: Eclipse Public License
- notice.html: Eclipse Foundation Software User Agreement

### 3 ModifRoundtrip folder contents

ModifRoundtrip is the workspace containing the metamodels, the source code and the code to generate the ModifRoundtrip plug-ins. The developer version is composed of the following folders:

- ModifPlugin
- ModifPlugin.edit
- ModifPlugin.editor
- ModifPlugin.test
- ModifRoundtrip
- xtext.modif
- xtext.modif.sdk
- xtext.modif.tests
- xtext.modif.ui

### 4 eclipseMR preparation for distribution

We present now, the way the original eclipse distribution was updated and specified to handle ModifRoundtrip projects.

#### 4.1 Downloading

Eclipse Modeling Tools 32 bits was downloaded and unzipped into the ModifRoundtrip-project folder. The unzipped folder is named eclipseMR.

Download link:

[http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/luna/SR2/eclipse-modeling-luna-SR2-win32.zip&mirror\\_id=580](http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/luna/SR2/eclipse-modeling-luna-SR2-win32.zip&mirror_id=580)

Eclipse especification:

Eclipse Modeling Tools

Version: Luna Service Release 2 (4.4.2)

Build id: 20150219-0600

## 4.2 Adding a Java Runtime Environment (JRE)

The jre7 folder was added to eclipseMR. It is a software package that contains what is required to run a Java program. It includes also a Java Virtual Machine implementation.

The eclipse.ini file of eclipseMR was modified, it includes now the lines **-vm** and **jre7/bin/javaw.exe**. It allows to specify that eclipseMR will be executed by using the provided jre.

## 4.3 Optimizing eclipseMR

In the preferences of eclipseMR (Window/Preferences menu), the following options were modified:

- General
  - Appearance
    - Label Decorations: keep only *Xtext Nature*
  - Editors
    - File Associations: delete *\*,\*, \*.dtable, \*.expressions, \*.jpage, \*.shtml, \*.xbase*
    - Text Editors
      - Spelling: disable *spell checking*
  - Startup and Shutdown: keep only *Marketplace Client*
- Install/Update
  - Available Software Sites: *None*

Bytecode verifications were also disabled, by adding the line **-Xverify:none** to the eclipse.ini file

The eclipse.ini file looks like follows:

```
-startup
plugins/org.eclipse.equinox.launcher_1.3.0.v20140415-2008.jar
--launcher.library
plugins/org.eclipse.equinox.launcher.win32.win32.x86_1.1.200.v20150204-1316
-product
org.eclipse.epp.package.modeling.product
--launcher.defaultAction
openFile
--launcher.XXMaxPermSize
256M
-showsplash
org.eclipse.platform
--launcher.XXMaxPermSize
256m
--launcher.defaultAction
openFile
--launcher.appendVmargs
-vm
jre7/bin/javaw.exe
-vmargs
-Dosgi.requiredJavaVersion=1.6
-Xms40m
-Xmx512m
- Xverify:none
```

## 4.4 Adding Eclipse Modeling Components

The following Eclipse Modeling Components were added to eclipseMR:

- OCL (OCL Examples and Editors SDK)
- Xtext (Xtext Complete SDK)

## 4.5 Adding ModifRoundtrip plug-ins

### ModifPlugin

Model, edit, editor and tests codes corresponding to the ModifPlugin, were produced by using the ModifPlugin generator model (ModifRoundtrip/model/Modif/ModifPlugin.genmodel).

The following projects contain the generated code:

- ModifPlugin
- ModifPlugin.edit
- ModifPlugin.editor
- ModifPlugin.tests

Those projects were exported as plug-in (Select folders → Export → Deployable plug-ins and fragments → Destination: eclipseMR)

### XModif

The following classes were modified, in order to handle specific syntax highlighting:

- XmodifHighlightingConfiguration
- XmodifHighlightingSemanticCalculator
- XmodifUiModule

Those classes are located at xtext.modif.ui/src/xtext.ui

The following projects were then exported as plug-in:

- xtext.modif
- xtext.modif.sdk
- xtext.modif.tests
- xtext.modif.ui

Those projects contain the code related to the Modif concret syntax.

Notes:

- xtext.modif project depends on ModifPlugin project (xtext.modif → Build Path → Configure Build Path ... → Project → Add ModifPlugin)
- Any modification involving the Modif metamodel (ModifRoundtrip/model/Modif), the ModifPlugin (model, edit, editor, tests) or the xtext.modif (sdk, tests, ui), requires the re-exportation of the ModifPlugin and the Xmodif plug-in.

Comparison between eclipse installations:

<i>Folder</i>	<i>Size</i>
jre7	111 Mo
eclipse-modeling-luna-SR2-win32	380 Mo
eclipse-modeling-luna-SR2-win32 + OCL + Xtext	445 Mo
eclipse-modeling-luna-SR2-win32 + OCL + Xtext + jre7	556 Mo
<b>EclipseMR + OCL + Xtext + jre7+ ModifPlugin + XModif</b>	<b>555 Mo</b>

## 5 ModifRoundtrip project contents