

Kumbang Tools

User's Guide

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August 30, 2007

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1 Introduction

KumbangTools is an application package consisting Kumbang Configurator and Kumbang Modeler. KumbangTools is designed for configuring software product families. The tool takes a configuration model as an input, and offers the user the possibility to make configuration decisions. The tool is implemented as plug-ins for Eclipse IDE.

2 Pre-Requirements

2.1 Pre-Requirements for Kumbang Configurator

The following software is required to run Kumbang Configurator:

- Operating system capable of running Eclipse version 3.1.1 or higher. Java Runtime Environment 5.0 or higher must be installed.
- Kumbang Core
- Graphical Editing Framework (GEF) and Draw2D frameworks to create graphical content within Eclipse Platform.
 - You can get GEF and Draw2D from the update system by going to Help -> Software Updates -> Find and Install and choosing 'Search for new features to install. Select Callisto Discovery Site as the update site and click Finish. From the search results open Graphical Editors and Frameworks and check the Graphical Editing Framework and Draw2D. Restart Eclipse after the installation is done.
- Note: For Eclipse 3.1.x use GEF 3.1.1, For Eclipse 3.2.x use GEF 3.2 and so on.

2.2 Pre-Requirements for Kumbang Modeler

The following software is required to run Kumbang Modeler:

- Operating system capable of running Eclipse version 3.1.1 or higher. Java Runtime Environment 5.0 or higher must be installed.
- Kumbang Core
- Graphical Editing Framework (GEF) and Draw2D frameworks to create graphical content within Eclipse Platform.
- EMF Service Objects (SDO) Runtime
- XML Schema Infoset Model (XSD) Runtime
- UML2

3 Installation

3.1 Installation of Kumbang Configurator

3.1.1 Contents of the installation package

The Kumbang Configurator contains the configuration software and testmodels. The software runs only on Windows, not e.g. Mac or linux.

The kumbang.configurator.GPL.zip archive contains 5 files and 2 folders. The files are:

GPL.txt	contains the GNU General Public License
README.txt	installation instructions
smodels.zip	external program used by KumbangTools, see: http://www.tcs.hut.fi/Software/smodels/
kumbang.core.GPL.jar	core classes which are required by all the KumbangTools. Doesn't provide any functionality by themselves
kumbang.configurator.GPL.jar	Kumbang Configurator

The two folders contains the sources for Kumbang Core and Kumbang Configurator.

3.1.2 Installation instructions for Kumbang Configurator

1. Install Graphical Editing Framework (GEF) (see above)
2. Copy kumbang.core.GPL.jar and kumbang.configurator.GPL.jar to eclipse/plugins

3.2 Installation of Kumbang Modeler

3.2.1 Contents of the installation package

The Kumbang Modeler contains the modeling software. The software runs only on Windows, not e.g. Mac or linux.

The kumbang.modeler.GPL.zip archive contains 5 files and 2 folders. The files are:

GPL.txt	contains the GNU General Public License
README.txt	installation instructions
smodels.zip	external program used by KumbangTools, see: http://www.tcs.hut.fi/Software/smodels/
kumbang.core.GPL.jar	core classes which are required by all the KumbangTools. Doesn't provide any functionality by themselves
kumbang.modeler.GPL.jar	Kumbang Modeler

The two folders contains the sources for Kumbang Core and Kumbang Configurator.

3.2.2 Installation instructions

1. Install Graphical Editing Framework (GEF) (see above)
2. From the update system, under Models and Model Development, install the following plugins (see: 3.1.2 for details).
 - Eclipse Modelling Framework (EMF) Runtime
 - EMF Service Data Objects (SDO) Runtime
 - XML Schema Infoset Model (XSD) Runtime

3. Install the UML2 plugin. Unfortunately, at the moment this has to be done manually.

The version that works with Eclipse 3.2.2 is UML2 2.0.3. It can be downloaded from <http://www.eclipse.org/modeling/mdt/downloads/?project=uml2>

After downloading the archive, extract it to your eclipse directory.

For some reason the UML2 plugin might be disabled by default. To enable it go to: Help -> Software Updates -> Manage Configuration, toggling the 'Show disabled features' on from the Product Configuration toolbar. Open the Eclipse SDK-tree and right click the UML 2 2.0.3 item and select enable.

4. Copy kumbang.core.GPL.jar and kumbang.modeler.GPL.jar to eclipse/plugins

4 Notes on installation

If you update either Kumbang Configurator or Kumbang Modeler you will also update the Kumbang Core. This might cause the un-updated plug-in to work unintended in some cases. This is because of the changes in Kumbang Core which affects to all plugins. To resolve this problem you will simply need to update the other plug-in as well.

5 Using Configurator

5.1 Import and Initialize Models

Before using the configurator you need first to import models from files (*.k_{bm}) to configurator. When you have imported a model, you can make different configurations based on it as many times as needed. To import a model, select *Init new configuration for a model* from the *Kumbang* menu. This opens a dialog.

Click *Import new models to the server* and browse filesystem for a model you need. The complete eclipse package has already two models imported; if you use only the plugin, you need to import the models.

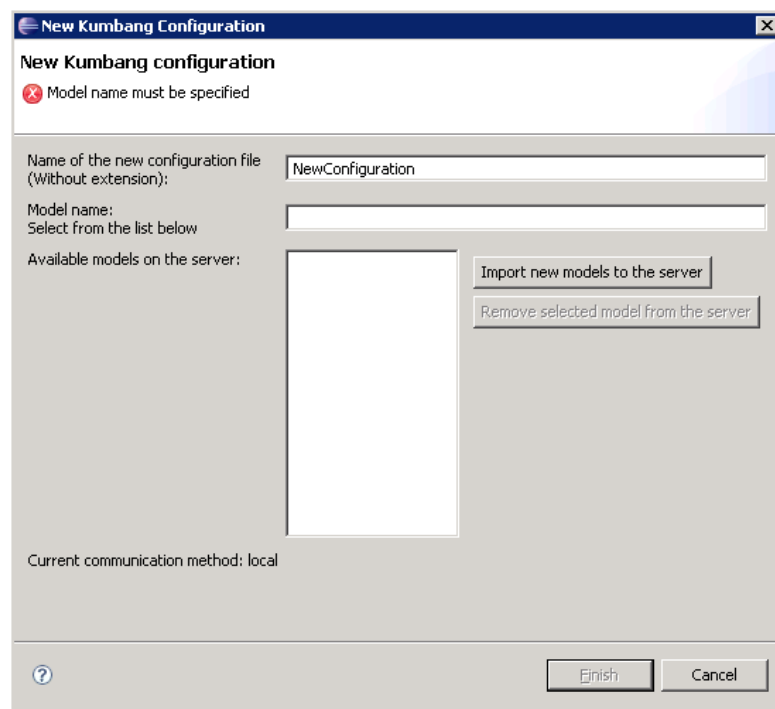


Figure 1: New Kumbang Configurator Dialog

After you have imported a model into the server, you can initialize it. This can be done by simply choosing one of the *Available models on the server* and pressing *Finish* button (Figure 1).

5.2 Kumbang Perspective

After initializing a configuration (Section 5.1) Eclipse loads a specified Kumbang perspective that shows the Views that are related to Kumbang Configurator.

The Figure 2 shows the basic overview of Kumbang perspective. The different Views that are related to this perspective are as follows:

- a. Features
 - Lists the Features that are defined in the model.
- b. Components
 - Lists the Components of the model.
- c. Component Diagram
 - Shows the decomposition of configuration components.
 - The components showed in this diagram are analogous to the Components View.

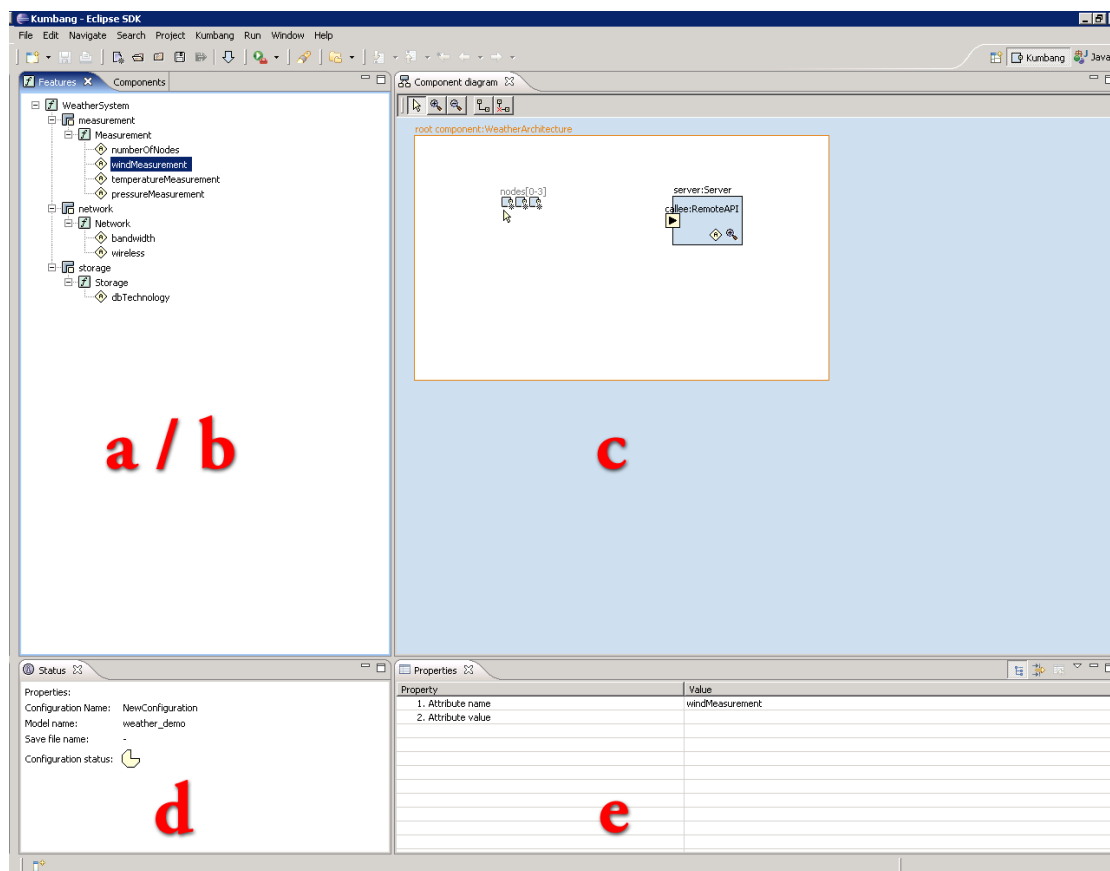


Figure 2: Kumbang perspective

d. Status

- Shows the configuration status.

e. Properties

- This shows the properties corresponding to the selected item in Features/Components-View

5.3 Modifying The Configuration

To configure the initialized model – and make it complete for exporting – you need to edit Features' attributes and/or add new Components to the configuration.

5.3.1 Edit Attributes

Usually the first step in modifying the configuration is editing the attributes. You can edit attributes in the Features-view. Right-click on some feature and select *Edit Attributes of this feature*. This opens a dialog for editing attributes of the selected feature.

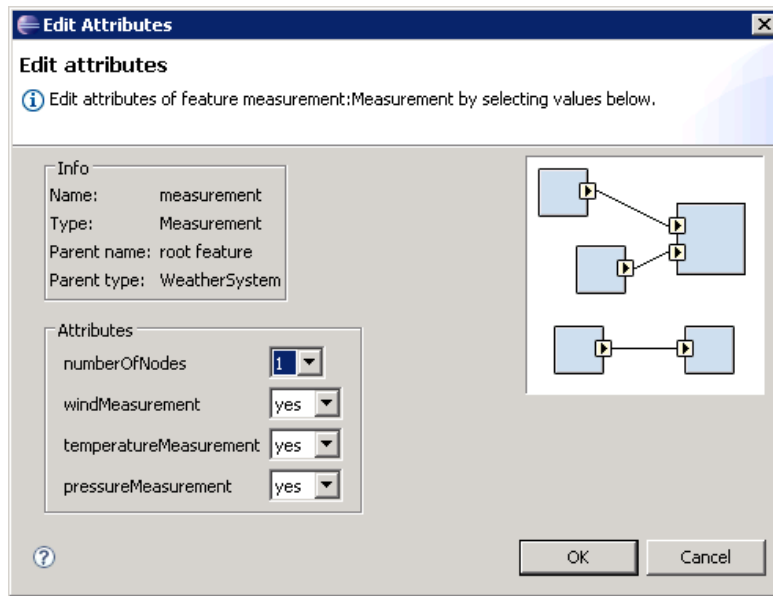


Figure 3: Edit Attributes Dialog

From the dialog (Figure 3) select values for each attribute, and when ready press *OK*. This modifies the attributes and sets values for them. You can check the Features view, and check that correct values are assigned as illustrated

6 Using Modeler

TBD.