KIELER Pre-Release 0.4.0

KIELER Rich Client Application 0.4.0

- Official Project Website
- Built on Eclipse 3.6 "Helios"

Release Notes

We are happy to provide the fourth release of the **Kiel Integrated Environment for Layout Eclipse Rich Client**! It is a framework for enhanced user interaction in graphical modeling basing on the Eclipse platform. This being a pre-release provides some basic core contributions as listed below. The full user experience will follow in upcoming releases. For known shortcomings and problems also see below.

Installation Notes

You can either download the Rich Client Application (RCA) which comes bundled with all required Eclipse infrastructure or you can install the single KIELER features via an Update Site on top of your own Eclipse installation (Eclipse version 3.6 ("Helios") required).

- See KIELER project website for download details.
- You'll require a Java Runtime Environment >= version 1.5.
- Nice graph layouts can be obtained by GraphViz. KIELER makes use of a GraphViz installation on your machine, so you probably want to install it.
- If you already used the Layout view before, you may need some adaptions for diagrams in which specific layout options have been saved. See below for instructions.

Provided Features

This is a very brief list of included features.

Since 0.4.0

- Hybrid Graphical / Textual SyncCharts modeling (KITS View)
- Kieler Example Management (KEX) (New / Import Wizard)
- Kieler Visualization of Data (KViD) for KAOM
- Custom Model Renderings (KARMA)
- New implementation of View Management (KIVi)
- New implementation of layout options management for KIML
  Fixes
- SC code generation (fixes)

Since 0.3.1

- Added missing MinGW libraries for Win32 OGDF layouter fragment

Since 0.3

- Migration to Eclipse 3.6 ("Helios")

- Kieler Actor Oriented Modeling Editor (KAOM), (old Dataflow editor has been removed)
- Graphs Editor for Layout Algorithm Engineering
- Interface for graph analysis (GRANA)
- SyncCharts Codegeneration into Synchronous C (SC)
- SyncCharts Simulation with SC
- New version of the Open Graph Drawing Framework
  - More layout algorithms supported
  - Better error handling due to new JNI strategy
  - Support for Solaris (next to Windows, Linux, Mac)
- Layout Support for Class diagrams
  - EMF Ecore Diagram Editor (also included in KIELER RCA)
  - UML2Tools Class Diagram, Papyrus MDT Class Diagram Editor Support
- Experimental Focus&Context for SyncCharts Simulation
  Fixes
- Validation of SyncCharts can be configured through toolbar
- SyncCharts Metamodel update 0.3
- SyncCharts KlePto fix about Ptolemy SR models

Since 0.2

- Automating Execution in the KIELER Execution Manager
- Experimental Interface to the Open Graph Drawing Framework (OGDF) for more sophisticated layout algorithms
- UML2 Support for KSBASE and Layout
- SyncCharts to Esterel compilation
- Kiel Reactive Processors (KReP) connection

- Source bundles are available (through update site)
  Fixes
- ThinKCharts Editor Copy / Paste works
- Ecore Tools Diagram Editor added to KIELER RCA
- Quartz Editor removed (deprecated)
- Many smaller bugs fixed

Since 0.1

- Graphical Editors
    - Thin Kieler SyncCharts Editor (ThinKCharts)
    - Simple Dataflow Editor
- Textual Editors
    - Esterel
    - Quartz
- Infrastructure for Meta Layout (KIML)
- Execution Manager (KIEM)
- SyncCharts Simulation using Ptolemy II (KlePto)
- Structure-Based Editing of SyncCharts (KSBase)
- Environment Visualization (KEV)

Quickstart

Start with an Example

The 0.4 release provides the new example management KEX. You can start with an example either by

- Select "Samples" on the Welcome page and select either the
    - SyncCharts Quickstart Example or the
    - KAOM Quickstart Example
    - -> a new project will be created, hosting a simple example model for the respective language
- Use the New- or Import-Wizard to select one example of a list of available ones
    - File -> New -> Example -> KIELER
    - Choose a category (e.g. SyncCharts or KAOM) and select some examples
    - Finish

Start with an empty Workspace

When you start KIELER, you will probably start a new empty workspace.

- If it is not already, open the **KIELER Perspective**! It opens the most important views that KIELER adds to Eclipse and adds some shortcuts to the New-Menu.
    - Window -> Open Perspective -> Other... -> KIELER Modeling
- Create a new empty simple project.
    - File -> New -> Project

In your new project you can create new graphical or textual models. Here is some possible use case:

- Create a new SyncCharts diagram.
    - File -> New... -> SyncCharts Diagram
- Create a new initial syncChart
    - Select empty canvas -> KIELER main menu -> Add Default
- Edit the diagram
    - Select existing graphical objects in the diagram, choose editing operations from the KIELER main menu or the context menu (right-click). You won't need the palette. Layout is always performed automatically.
- Trigger automatic layout
    - Use the corresponding little button in the toolbar (or Ctrl-R L)
    - Use the *Layout* view to customize the autolayout: choose different layout algorithms---even within the same diagram for different hierarchical nodes---or configure specific options.
- Save the SyncChart to automatically validate it.
- Simulate the SyncChart with the *Execution Manager* view
    - From the dropdown list select the matching schedule *synccharts*. This will setup KIEM for SyncCharts Simulation.
    - Press the play button.
    - Use the Execution Manager view and the *Data Table* view to interact with the model (i.e. see outputs and enter inputs).
- Checkout the key-bindings! Key-bindings help you to be faster with KIELER. All KIELER bindings have the Sequence *Ctrl+R <key>*, where <key> is some additional key that is pressed in sequence with Ctrl+R (CMD+R on Mac).
    - Press only Ctrl+R and wait to get a list shown with all possible key-bindings.
    - Maybe most frequently used are *Ctrl+R L* for autolayout and *Ctrl+R Z* for zoom to fit.

Known Problems and Limitations

- If you have used previous versions of the KIML Layout view to change layout options for a specific diagram, you may encounter the error message
  `Class 'KStringOption' is not found or is abstract.`

  when opening the diagram. In this case, do the following:
    - Main menu -> Search -> File... -> Containing Text "klayoutdata:KStringOption" -> Replace... -> With "layoutoptions:KOption" -> OK
    - Do the same for KIntOption, KBooleanOption, or KFloatOption as needed.

- The Graphs editor is now named KEG. Graphs that were created with previous versions cannot be opened with the new version.
- Currently there is no full-blown user documentation integrated. Find some material online:
  - Source code as well as Javadoc API is available. See website.

Bug Reports, Comments

We're working hard to make the graphical modeling user experience as convenient as possible. However, bugs can still remain in the code and some things might not be as you would expect them. Please don't hesitate to send in bug reports or give other comments like feature requests.

Send bug reports to kieler@…, please. For news or general questions subscribe to the rt-kieler mailing list.