

# RAP (The Rich Ajax Platform)

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Jochen Krause

RAP Project lead

[jkrause@eclipsesource.com](mailto:jkrause@eclipsesource.com)

RAP enables building modular applications for web and desktop based on Eclipse (OSGi) technology with a single code base

## Single Sourcing for Desktop and Web Multi-Channel UI

I have heard that for 10 years

**AND NEVER SEEN IT WORKING**

Please give us the benefit of doubt ...

Open Source is of mediocre quality and is always late

*Eclipse is delivering high quality and in time*

Components are a good idea but component based systems are heavy weight and overly complex

*Eclipse and OSGi provide effective modular systems for millions of users*

We started with what we like about Eclipse

**plug-ins, plug-ins, plug-ins – bundles too ...**

- dependency management
- extension points
- life cycle management

contribution to a common ui (workbench)

- this is called “mashup” in web 2.0

How does that translate to the web?

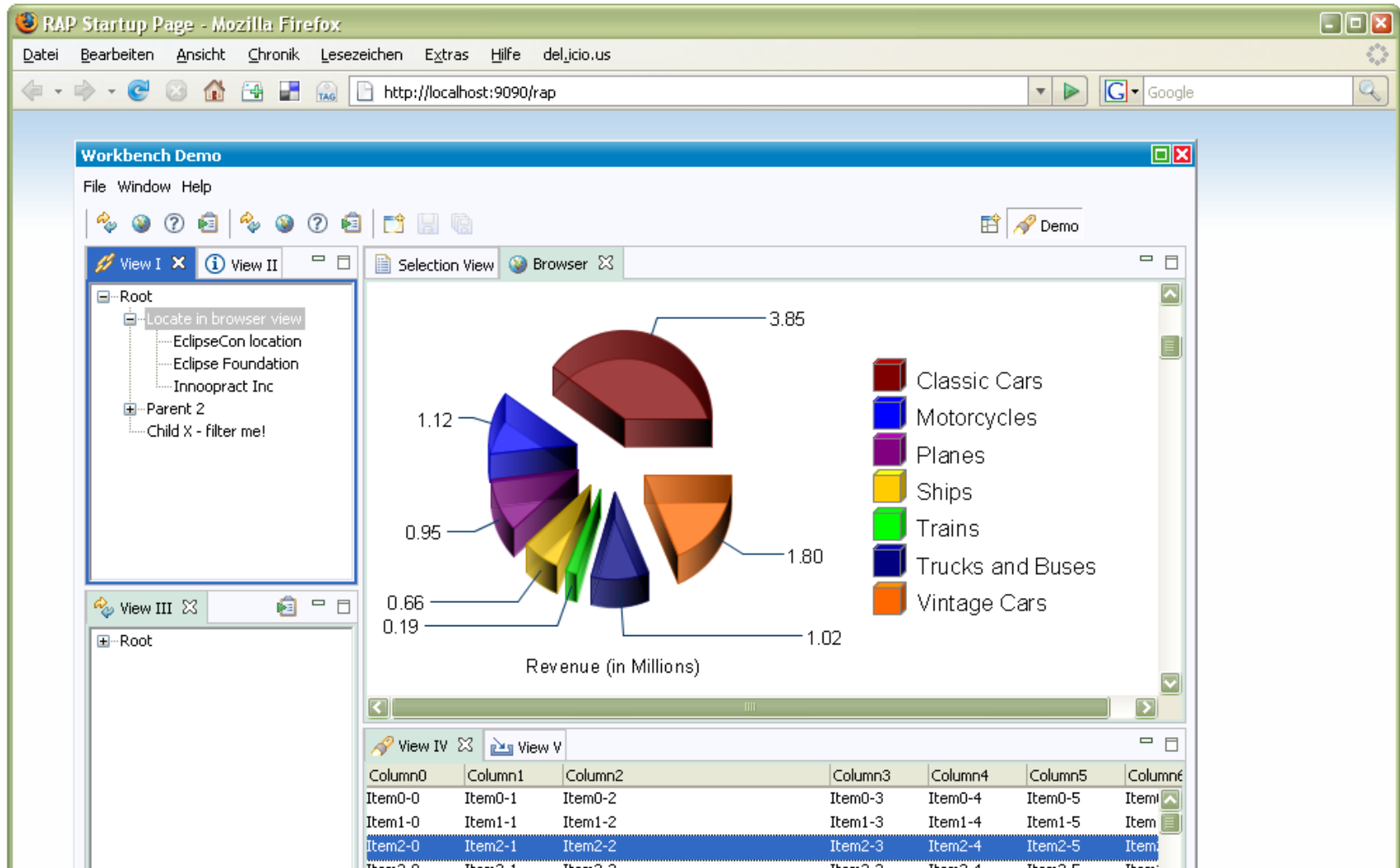
## **RAP - enabling single sourcing between RCP and Web**

- 80% - 90% reuse is possible
- RAP provides only a subset of RCP!
- needs separation of code that is not compatible
- application needs to become multi-user enabled

**We are getting all the things we like about Eclipse**

# Demo

# Nice idea – but I don' like RCP in a browser



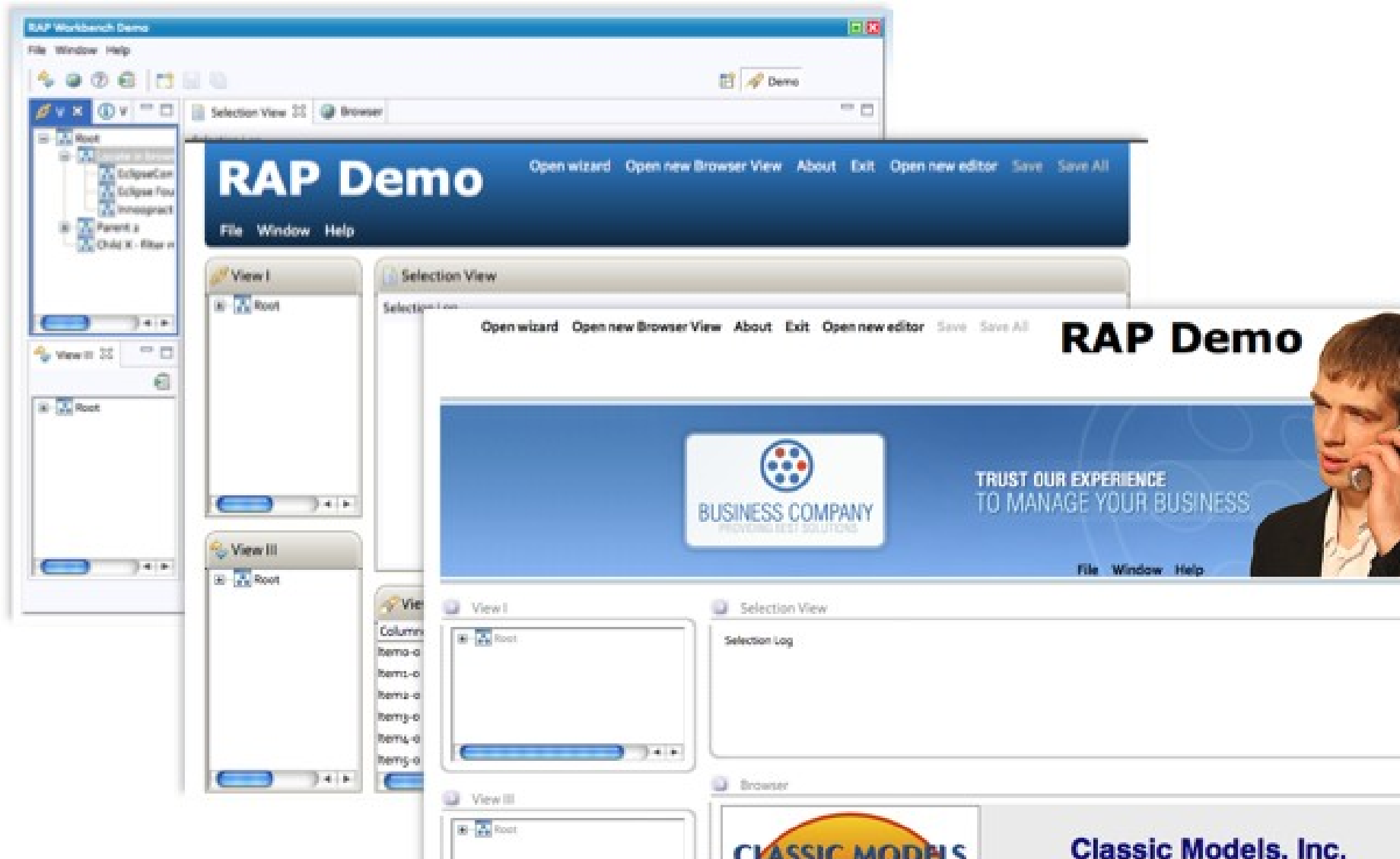
The screenshot shows a Mozilla Firefox browser window titled "RAP Startup Page - Mozilla Firefox" with the address bar showing "http://localhost:9090/rap". The main content area displays a "Workbench Demo" application. The application has a menu bar with "File", "Window", and "Help". Below the menu bar is a toolbar with various icons. The application is divided into several views:

- View I:** A tree view showing a hierarchy starting with "Root", followed by "Locate in browser view" (containing "EclipseCon location", "Eclipse Foundation", "Innoopract Inc"), "Parent 2", and "Child X - filter me!".
- View II:** A 3D pie chart titled "Revenue (in Millions)". The chart is divided into seven segments, each representing a different category. The values for each segment are: Classic Cars (3.85), Motorcycles (1.12), Planes (0.95), Ships (0.66), Trains (0.19), Trucks and Buses (1.80), and Vintage Cars (1.02). A legend on the right side of the chart maps colors to these categories.
- View III:** A simple tree view showing "Root".
- View IV and View V:** A table with 7 columns and 4 rows. The columns are labeled "Column0" through "Column6". The rows are labeled "Item0-0" through "Item3-5".

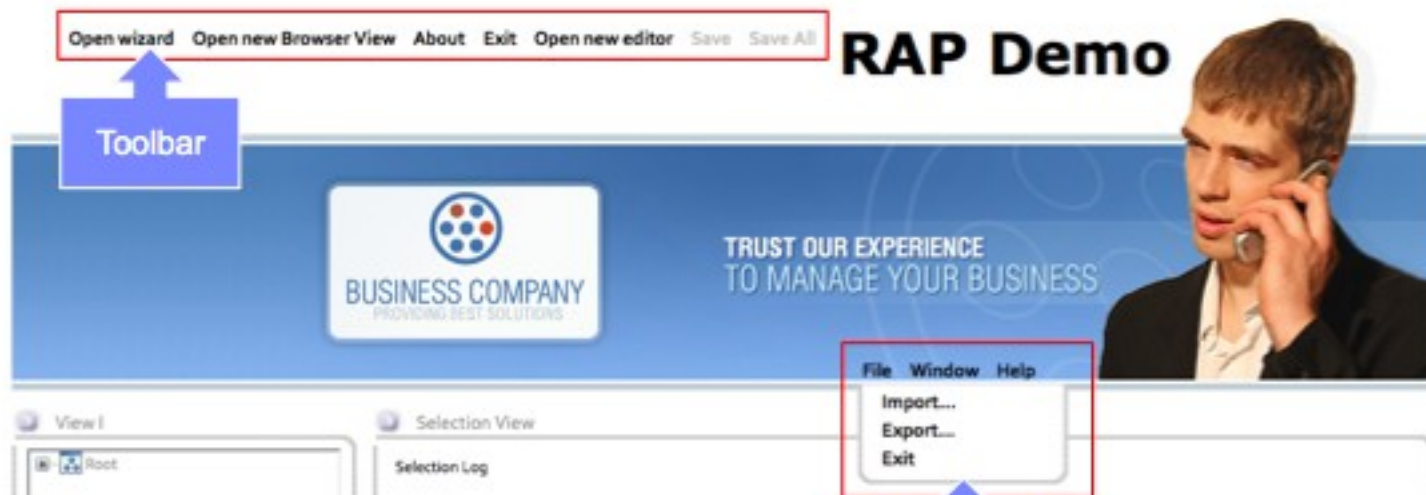
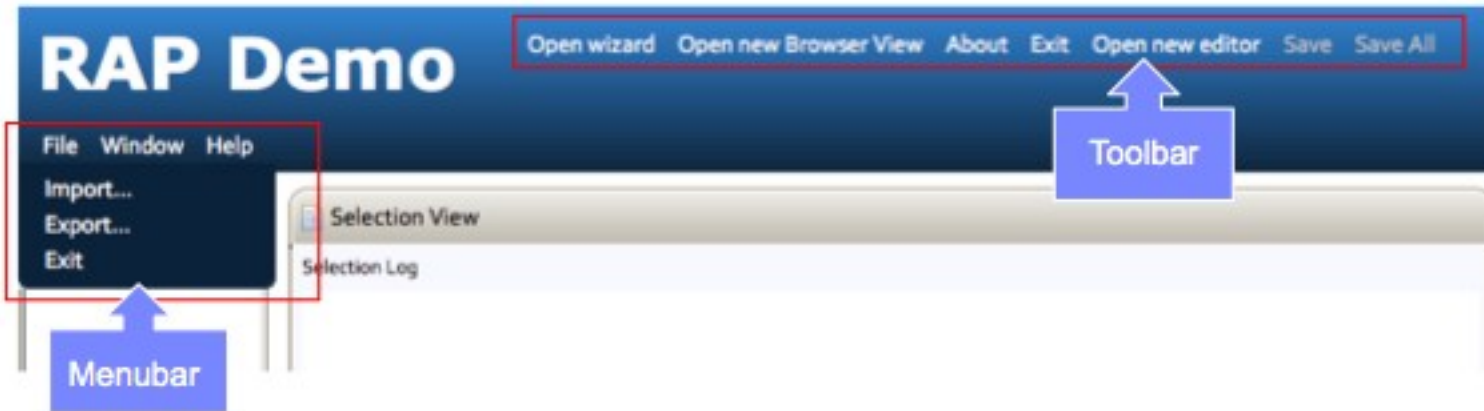
Column0	Column1	Column2	Column3	Column4	Column5	Column6
Item0-0	Item0-1	Item0-2	Item0-3	Item0-4	Item0-5	Item0-6
Item1-0	Item1-1	Item1-2	Item1-3	Item1-4	Item1-5	Item1-6
Item2-0	Item2-1	Item2-2	Item2-3	Item2-4	Item2-5	Item2-6
Item3-0	Item3-1	Item3-2	Item3-3	Item3-4	Item3-5	Item3-6



o.k. - but it does not have to be this way



# Web L&F and workbench technology

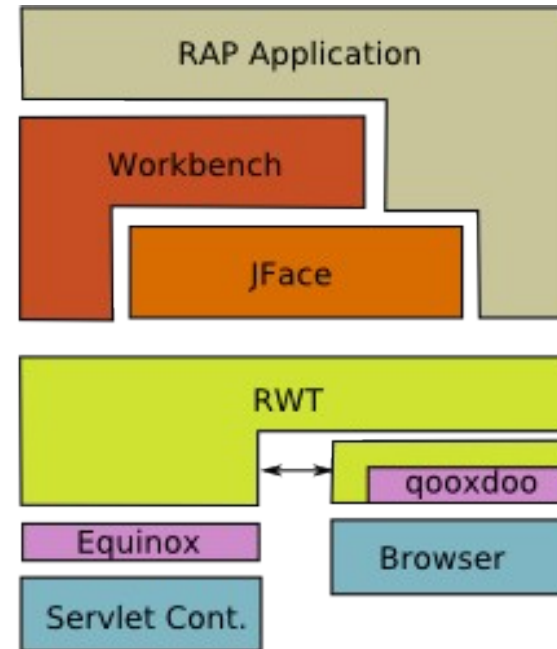




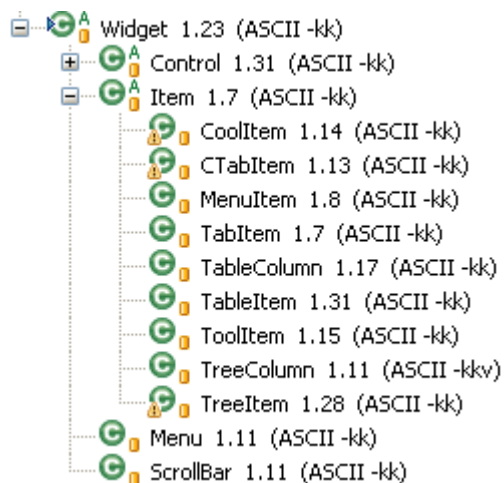
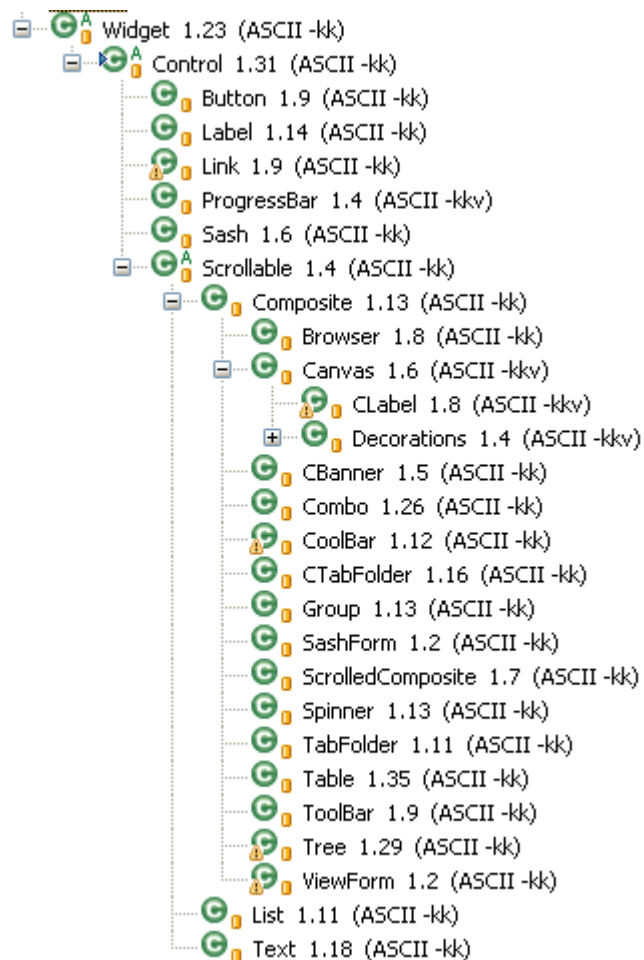
# Demo

## How does it work?

- Differences SWT with an implementation that can render to browsers
  - ◆ multi-user environment: OSGi
- everything else is pretty much the same
  - ◆ Additional API for web
- RWT uses qooxdoo Javascript library to render widgets in the browser



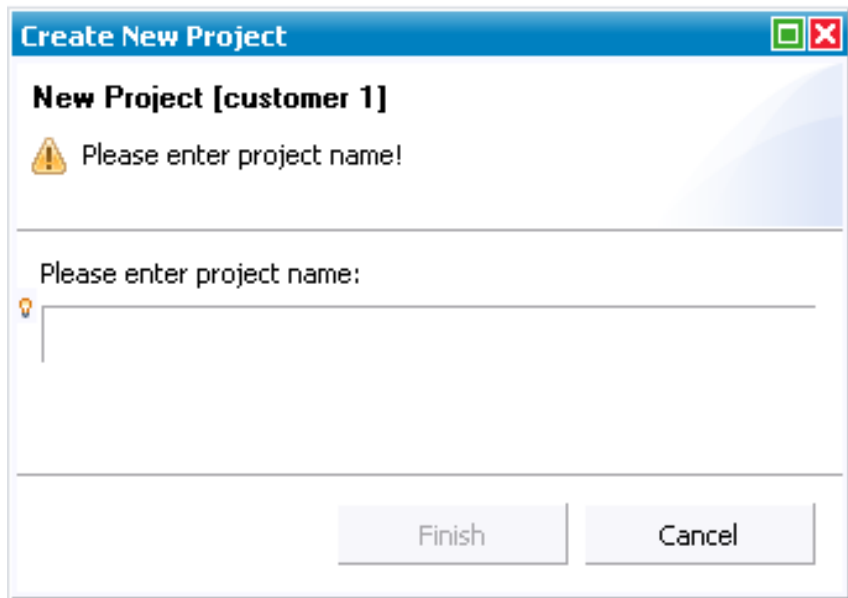
# RWT widgets



# Demo

## JFace

- Support for all JFace viewers
  - ◆ TableView, TreeView, ....
- Support for most Viewer concepts
  - ◆ Provider (Content, Label, Color...)
  - ◆ Sorter
  - ◆ Filter
  - ◆ Decorator (Image decoration).
- Support for Field Decorations
- **New: Cell-Editors**



- Wizards



# Demo

## Workbench: Parts, Perspectives & Interaction

- Full support for views
    - Additional views
      - Outline
      - Properties
  - Editor support
    - Multi-page editors available
    - ISaveablePart available
  - SelectionService
  - Jobs (UIJobs, ProgressView)
- Support for perspectives
    - ◆ Perspective Switcher
    - ◆ Extensions
  - Eclipse 3.3 Menus Framework
    - ◆ Commands & Handler
    - ◆ Expression support for visibleWhen and enabledWhen

New: ScopedPreferenceStore

New: Activity Support

New: Workbench 3.4

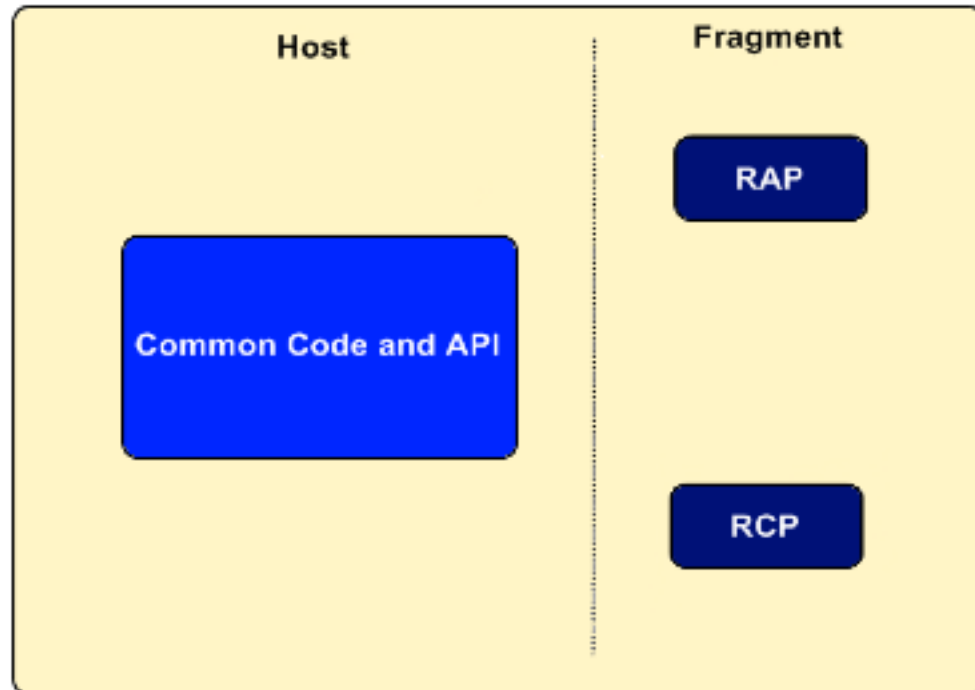
## Enabling plug-in reuse

### Differences between RCP and RAP

- RAP runs in a multi-user environment
- one OSGi instance for all sessions in RAP
- singletons are shared between sessions
- no implicit thread to session assignment
- resources (images, colors und fonts) are shared
- thin-client architecture (“as-is” port does not always make sense)
- API limitations (no GC, no MouseMove events)

## Fragments allow separation of differences

- two fragments per plug-in
  - ◆ one for RAP specifics
  - ◆ one for RCP specifics
- at runtime, only the plug-in that fits the environment will be installed
- platform specific E-P contributions are moved into the corresponding fragment
- bundle structure stays intact

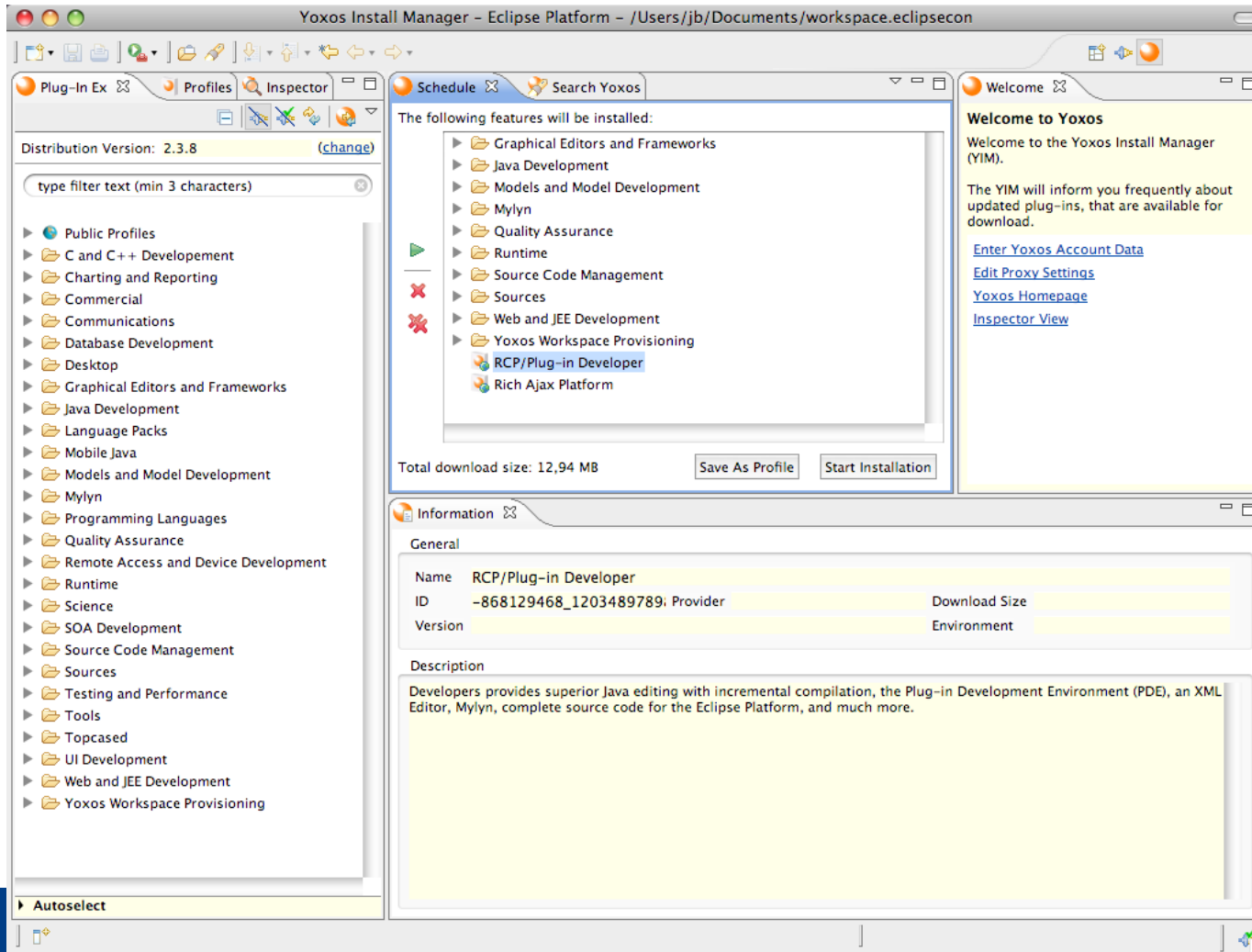


## Find more info on single sourcing here

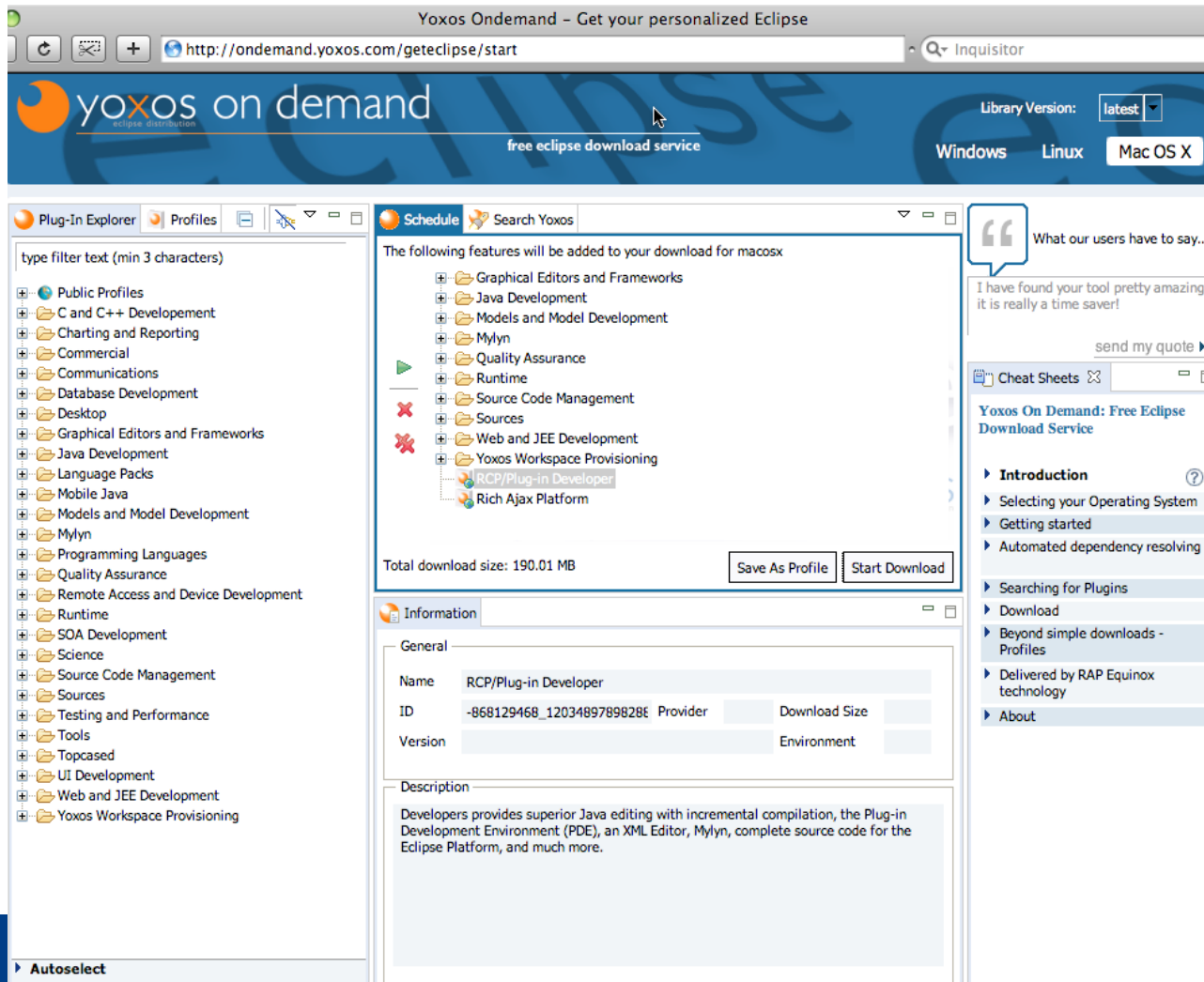
- Webinar (recordings, new ones upcoming)
  - ◆ <http://eclipsesource.com/en/eclipse/eclipse-rap/>
- The new RAP book has great tips on single sourcing



# Real World Example: Yoxos Install Manager



# Real World Example: OnDemand Service



The screenshot displays the Yoxos OnDemand website interface for downloading Eclipse. The browser address bar shows `http://ondemand.yoxos.com/geteclipse/start`. The page header includes the Yoxos logo, the text "yoxos on demand", and "free eclipse download service". A "Library Version" dropdown is set to "latest", and navigation buttons for "Windows", "Linux", and "Mac OS X" are visible.

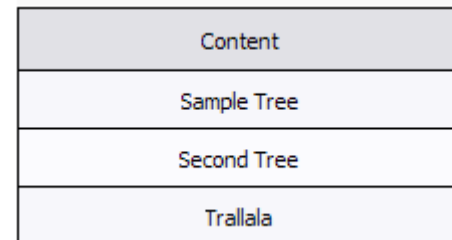
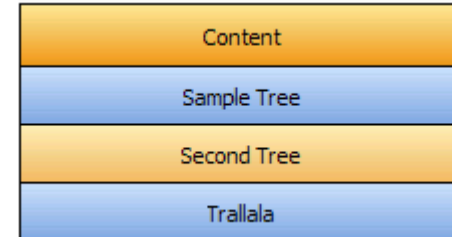
The main content area is divided into several sections:

- Plug-In Explorer:** A sidebar with a search filter and a list of categories such as "Public Profiles", "C and C++ Development", "Charting and Reporting", "Commercial", "Communications", "Database Development", "Desktop", "Graphical Editors and Frameworks", "Java Development", "Language Packs", "Mobile Java", "Models and Model Development", "Myllyn", "Programming Languages", "Quality Assurance", "Remote Access and Device Development", "Runtime", "SOA Development", "Science", "Source Code Management", "Sources", "Testing and Performance", "Tools", "Topcased", "UI Development", "Web and JEE Development", and "Yoxos Workspace Provisioning".
- Schedule:** A central panel titled "The following features will be added to your download for macosx" showing a tree of features: Graphical Editors and Frameworks, Java Development, Models and Model Development, Mylyn, Quality Assurance, Runtime, Source Code Management, Sources, Web and JEE Development, Yoxos Workspace Provisioning, RCP/Plug-in Developer (highlighted), and Rich Ajax Platform. Below this list, it states "Total download size: 190.01 MB" and provides "Save As Profile" and "Start Download" buttons.
- Information:** A panel with a "General" section containing fields for Name ("RCP/Plug-in Developer"), ID ("-868129468\_1203489789828E"), Provider, Download Size, Version, and Environment. A "Description" section follows, stating: "Developers provides superior Java editing with incremental compilation, the Plug-in Development Environment (PDE), an XML Editor, Mylyn, complete source code for the Eclipse Platform, and much more."
- Quote:** A section titled "What our users have to say..." with a quote: "I have found your tool pretty amazing, it is really a time saver!" and a "send my quote" button.
- Cheat Sheets:** A section titled "Yoxos On Demand: Free Eclipse Download Service" with a list of links: Introduction, Selecting your Operating System, Getting started, Automated dependency resolving, Searching for Plugins, Download, Beyond simple downloads - Profiles, Delivered by RAP Equinox technology, and About.

## Styling RAP applications

- Transparency implemented
- Background Images implemented
- Alpha shading implemented
- Controlled by CSS files

The following features will be added to your download for win32

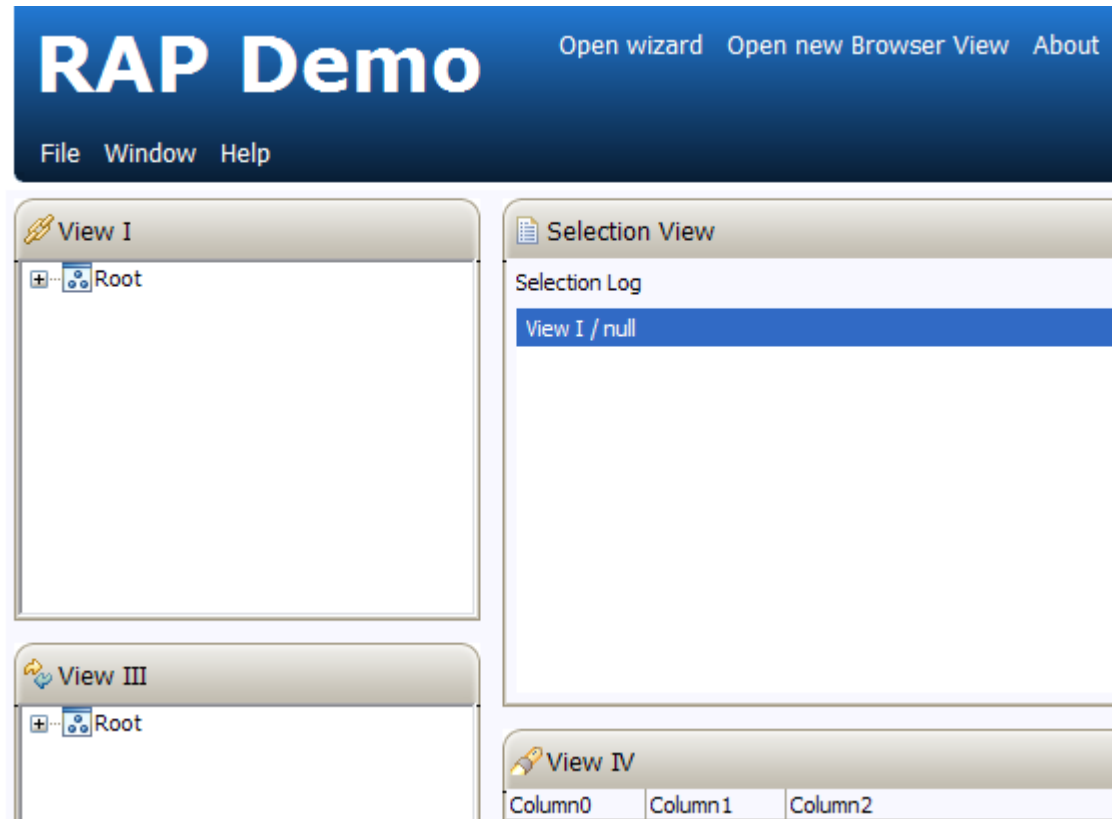




# Presentation API

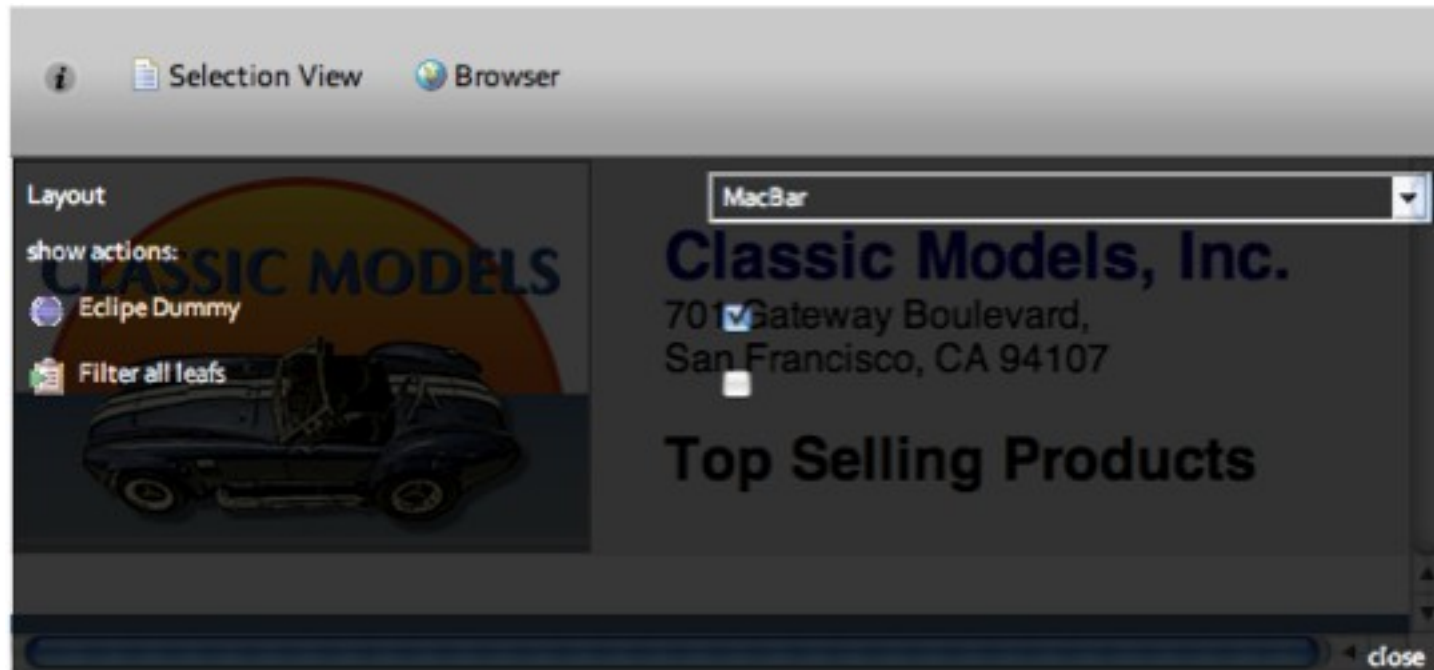
Factory based,  
individually styled

- Views
- Toolbars
- Menubars



## Investing into finding patterns that work for both Desktop and Web

Enable Users and / or „Assemblers“ to adapt the UI



## RAP 1.2 - Roadmap

### **Integrate into Platform / e4**

- Move RWT to SWT
- Use SWT Browser Edition for client side rendering
- Introduce a protocol to enable more client technologies

### **Functionality**

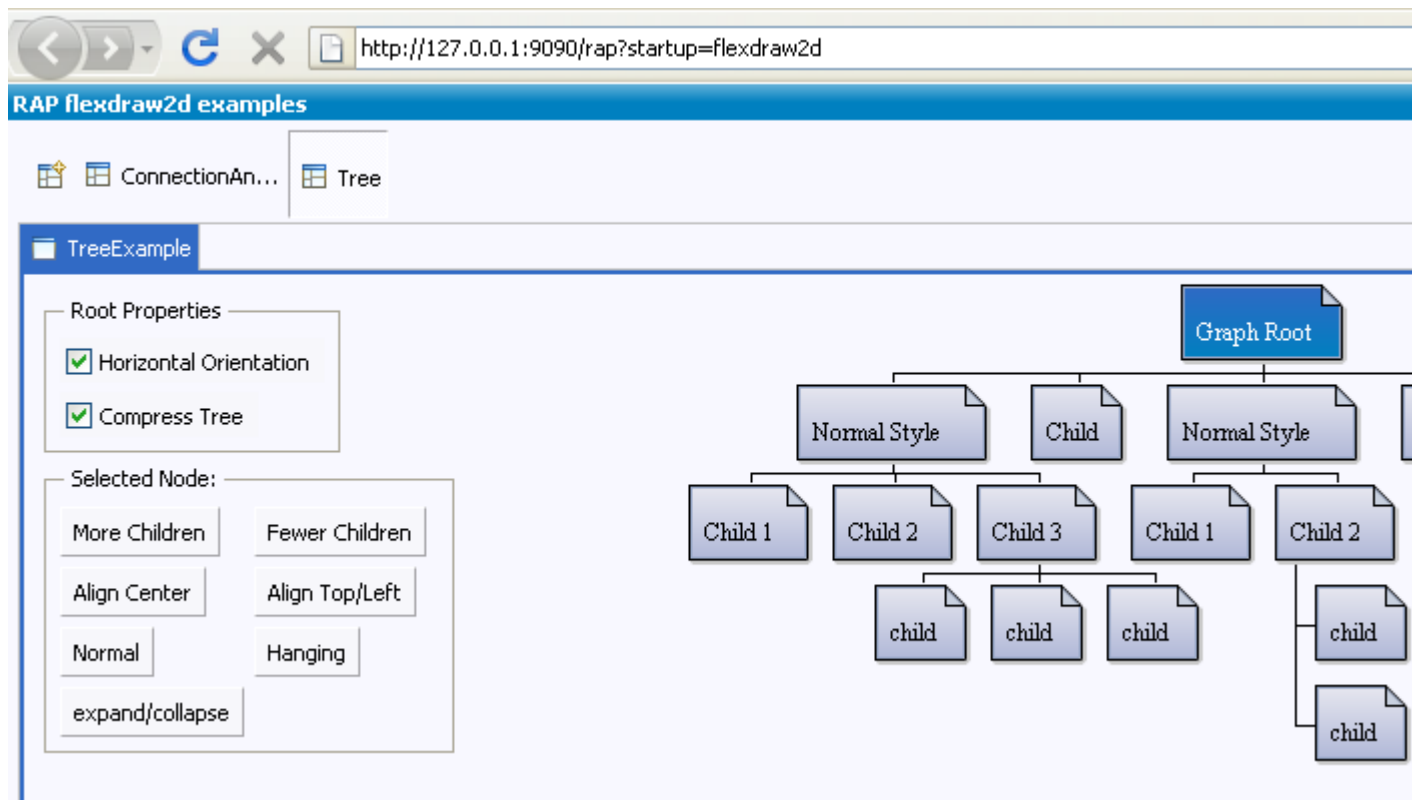
- KeyListener
- Drag&Drop

### **Styling**

- Rounded borders
- further improve ability to style (using CSS)
- client side gradients, animation, decoration

# draw2d – only with community contribution

- prototype using Flash in the browser



Root Properties

- Horizontal Orientation
- Compress Tree

Selected Node:

- More Children
- Fewer Children
- Align Center
- Align Top/Left
- Normal
- Hanging
- expand/collapse

```
graph TD
    GR[Graph Root] --> NS1[Normal Style]
    GR --> C[Child]
    GR --> NS2[Normal Style]
    NS1 --> C1[Child 1]
    NS1 --> C2[Child 2]
    NS1 --> C3[Child 3]
    NS2 --> C4[Child 1]
    NS2 --> C5[Child 2]
    C5 --> C6[child]
    C5 --> C7[child]
```

# Get the RAP - <http://eclipse.org/rap>



## Demos

See some demos here



## Downloads

Get the latest RAP release

The RAP project enables developers to build rich, Ajax-enabled Web applications by using the Eclipse development model, plug-ins with the well known Eclipse workbench extension points, JFace, and a widget toolkit with SWT API (using **qooxdoo** for the client-side presentation). The project has graduated from incubation and released its 1.0 release.

[Learn more ...](#)

## References

- <http://www.eclipse.org/rap> - RAP project page
- <http://wiki.eclipse.org/RAP> - RAP project wiki
- <http://www.qooxdoo.org> - qooxdoo js library
- <http://dev.eclipse.org/.../eclipsecon2005-presentationsAF>
- Check our newsgroup, it is a busy place and questions get normally answered quickly:
  - <http://www.eclipse.org/newsportal/thread.php?group=eclipse.te>

An exemplary commercial app: <http://www.cas-pia.de>