Equinox Community

Runtime Technology at Eclipse

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What is the Equinox Community

- The Equinox community is the face for runtime technologies at Eclipse

- Runtime technology is wide spread at Eclipse, but not always easy to find

- The new Eclipse RT (Runtime, not Realtime) top level project helps to coordinate the runtime efforts

- The Equinox Community will foster and promote runtime technologies at Eclipse – independently of their location in a top level project
Why a new top level project?

- There was no home for runtime technologies
  - Technology is mainly seen as an incubator
  - Equinox is a subproject of the Eclipse project, and further nesting of projects is not in sync with our rules. Also the Eclipse project is mainly known for delivering the Eclipse SDK

- Common PMC eases communication and integration
  - Examples in the tooling space are the Eclipse project and the WebTools project – their integration and out of the box usability is better then integration between arbitrary projects

- Participation is optional, nobody needs to move
  - The new top level project is just the starting point. It is likely that we will end up with multiple top level projects for runtime just as in the tools space (Eclipse project, Tools project, WebTools project ...)
## Eclipse Runtime projects at Eclipse.org

### Eclipse Runtime projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Functional area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mature projects</strong></td>
<td></td>
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<tr>
<td>BIRT</td>
<td>Reporting engine</td>
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<tr>
<td>Equinox</td>
<td>OSGi</td>
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<tr>
<td>RAP</td>
<td>AJAX platform</td>
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<tr>
<td>eRCP</td>
<td>embedded RCP</td>
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<tr>
<td>ECF</td>
<td>Communication</td>
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<tr>
<td><strong>Projects in incubation</strong></td>
<td></td>
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<tr>
<td>EclipseLink</td>
<td>Object persistence</td>
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<tr>
<td>Swordfish</td>
<td>SOA Runtime</td>
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<tr>
<td>Riena</td>
<td>C/S Appl. Platform</td>
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<tr>
<td><strong>Proposed</strong></td>
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<td>EILF</td>
<td>Enterprise Search</td>
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</table>

Many more Eclipse projects provide runtimes: CDO, EMF, Higgins, Net4j, TPTP, ...
A brief history

- Creation of Eclipse RT was community driven
  - Runtime summit in December 2007 with broad participation
  - Adopter feedback:
    - Difficult to find and to gather information
    - Sometimes difficult to contribute back
    - Comprehensive platform – seen as competitor to .NET
  - Concerns
    - Afraid of discontinuation of tool efforts
    - Prefer industry standards to de facto standards
    - Early commoditization

The Eclipse RT charter and the Equinox community address feedback and concerns
Eclipse RT's Mission

- Eclipse RT is designed to foster, promote and house runtime efforts in the Eclipse community. These efforts strive towards the common goal of providing a uniform component model across a wide variety of computing environments. The Equinox framework and OSGi form the basis of this infrastructure.

- Eclipse RT projects target "clients" and "servers" across embedded devices, desktops, and enterprise systems, and provide those intermediate software services which enable applications to be more easily and concisely constructed across these environments. This supports and extends the Equinox vision of a consistent programming and component model where developers create application domain code that runs on a variety of platforms.

- By providing a consistent symmetric architecture, Eclipse RT technology enables developers to focus on the business problem at hand and still have many system architecture options available at deployment time.
Scope of the Eclipse RT project

- Developing and delivering the OSGi framework implementation used for all of Eclipse.
- Implementation of all aspects of the OSGi specification (including but not limited to the Enterprise Expert Group, Mobile Expert Group and Vehicle Expert Group work).
- Investigation and research related to future versions of OSGi specifications and related runtime issues.
- Implementation of key framework services and extensions needed for running Eclipse (e.g., the Eclipse Adaptor, Extension registry) and deemed generally useful to systems using Equinox.
- All implementations must be based on OSGi and run on Equinox.
- The implementation of generally applicable runtime standards (e.g., OASIS, JCP).
- Incidental tooling efforts to enable or facilitate particular runtime functions in conjunction with (e.g., as a component of) a sub-project.
Key characteristics of today's and future Eclipse Runtime projects

- Provide a common platform (Equinox OSGi) for different Eclipse Runtime technologies
- Provide extensibility through common APIs leveraging existing standards
- Facilitate integration between Eclipse Runtime components
- Promote integration with Eclipse tooling technologies
6 Eclipse runtime sub-projects are participating in the new top-level Eclipse RT project from the start.

- Eclipse Comm. Framework
- Rienna
- Enterprise C/S
- Rich Ajax Platform
- EclipseLink
- Swordfish
- SOA Runtime

More to Come
- e.g. Enterprise Information Logistics

EQUINOX
Pillars of Eclipse – Tools and Runtimes
Our delivery strategy

- Integration testing
  - Making sure the different runtime projects play nicely together
  - Provide infrastructure, allow easy contribution of tests
  - Participation should be possible for any project providing runtime technology

- All in one downloads for SDK, runtime
- A separate release train for runtime technology?
Equinox and OSGi – adoption from bottom up

- Equinox is getting adopted inside and outside the Eclipse community
- Component models are not new, but this one is really working
  - Powering desktops (Eclipse and RCP)
  - Powering app servers (IBM, BEA, …)
  - Available on mobile devices (Nokia, Sprint)
Eclipse technology moving to all tiers

Value for the Eclipse Ecosystem

Integrated development environment

Rich client platform & Embedded systems

Serverside runtime

Today
We coined a new term: Component Oriented Development and Assembly
## Business drivers for CODA

<table>
<thead>
<tr>
<th>Current issues</th>
<th>Reason</th>
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</table>
| **No consistent component model across architecture tiers** | • MS .Net == MS platforms  
  • Java ME, SE and Java EE imply different component models on embedded devices, desktops and server |
| **New type of applications** | • SaaS, web 2.0, mashups and social networks require new approaches |
| **Business Agility Demands IT Agility** | • One size does not fit all |
| **Lack of flexibility in integration of 3rd party software** | • Different technology platforms make it difficult to integrate with customers and partners |
The combination of OSGi, Equinox and Eclipse runtime projects form a powerful infrastructure

<table>
<thead>
<tr>
<th>Current issues</th>
<th>Component Oriented Development and Assembly address these issues</th>
</tr>
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<tbody>
<tr>
<td><strong>No consistent component model across architecture tiers</strong></td>
<td>• OSGi is a proven component module and available on embedded devices, desktops and servers</td>
</tr>
<tr>
<td><strong>New type of applications</strong></td>
<td>• Flexible to support SOA, AJAX, etc.</td>
</tr>
<tr>
<td><strong>Business Agility Demands IT Agility</strong></td>
<td>• Allow for the assembly of components to create solutions</td>
</tr>
<tr>
<td><strong>Lack of flexibility in integration of 3rd party software</strong></td>
<td>• Modular architecture easy to extend and integrate</td>
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RCP deployment
Equinox Server Deployment

- Servlets
- JSPs
- HTTP
- Equinox
- Java
- 3rd Party
- Eclipse
- Your

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Equinox and Spring Deployment
Application Server Deployment

Servlets

JSPs

Spring

HTTP

Thin Equinox WAR

Equinox

Lite HTTP Service

Application Server

Your Servlets

3rd Party

Eclipse

Nokia

Linux

Windows

Mac

Solaris
DEMO
Growing the community – we want you

- **Getting started is complicated**
  - Ease the first steps with tools
  - Provide end to end examples
  - Provide integrated tool / runtime environments

- **One name, one place - Equinox**
  - Identify runtime technology at Eclipse
  - Website to support, educate and facilitate runtime technology at Eclipse
  - A common newsgroup?

- **Enable installed base to try runtime technologies**
  - Intro Pages, EPP packages

- **Clear messaging**
  - ... that we are NOT running a development tool on servers
The Equinox community is building new and interesting technology that makes it easier to *create*, *extend* and *assemble* innovative software.
People are talking about it

“OSGi and The Rise of The Stackless Stack: Just in Time”
James Governor, Redmonk

“JBoss is working on OSGi too”

“Towards a mainstream Open Source OSGi application server?”

“Spring Dynamic Modules for OSGi: simplified development of OSGi applications”

“Keeping an eye on the OSGi”
Alex Fletcher, Entiva Group

“Top Five Java Technologies to Learn in 2008”
Organizations Using and Supporting Equinox

**Company**

- IBM
  - Lotus, Websphere, Rational, DB2, Tivoli
- Actuate iServer
- Mars Rover Control Systems
- BEA Event Server
- SOPERA ASF Platform
- Eclipse Swordfish is the core of Deutsche Post SOA platform SOPERA
## Organizations Using and Supporting Equinox

<table>
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<th>Company</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ORACLE</strong></td>
<td>• Leading EclipseLink project</td>
</tr>
<tr>
<td><strong>webtide</strong></td>
<td>• Jetty support on Equinox</td>
</tr>
<tr>
<td><strong>INNOOPRACT</strong></td>
<td>• Equinox RAP and Yoxos</td>
</tr>
<tr>
<td><strong>ProSyst</strong></td>
<td>• Contributions to Equinox project</td>
</tr>
<tr>
<td><strong>Code</strong></td>
<td>• Lead Equinox product and offer consulting services for Equinox</td>
</tr>
<tr>
<td><strong>MICRODOC</strong></td>
<td>• Consulting services for Equinox</td>
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</table>
Summary

• Eclipse is starting a runtime initiative.
• A new top-level projects aims to foster, promote and house runtime projects based on Equinox as the uniform component model.
• The top-level project is led by Code 9, IBM, Innoopract, Oracle, and SOPERA.
• Eclipse is launching an Equinox Community portal to foster adoption of Equinox and runtime technology at Eclipse.