Eclipse Summit on
Runtime Technologies and Platforms

San Francisco
December 11, 2007

The Emergence of Eclipse as a Runtime

- RCP was a "hidden gem" in the Eclipse Tooling Platform
- Equinox emerging as a powerful, general-purpose runtime

   One component model across all execution environments

- Extremely appealing and already showing up in products

- Today Eclipse has:
  - The reference implementation for OSGi R4.1 framework and JSR 291
  - Well-tooled by PDE
  - Widely adopted
  - RAP, EMF, ECF, …
  - Lots of new projects

Agenda

- Introduction
- **Presentation of existing runtime technologies with selected short talks (5 minutes)**
- Adopter feedback (what is missing, what proved to be difficult)
- Where are we heading with runtime technologies (which pieces will / should be coming)
- Relationship between tooling and runtime technologies
- Relationship to other communities (e.g., Spring, Apache, ...)
  - OSGi Enterprise working group - State and goals
- What is the community? What do they want? How to grow the community?
  - Showcases / Tutorials
- A new top level project - who may / will participate?
- Discussion on draft charter for a runtime top level project
- Delivery strategy

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Adopter Feedback

- Eclipse Runtime is Competitor to .net
- No dll hell – possibility to run multiple versions is a big plus
- Comprehensive platform
- Sometimes difficult to contribute back
- Often difficult to gather information

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Key questions to be discussed:

What is the status of Eclipse Runtime technologies today?

What is (not) the goal of Eclipse Runtime?

What are the key characteristics of Eclipse Runtime technologies?

What is the business value for the ecosystem?

Currently there are 5 mature runtime projects within Eclipse …

Eclipse Runtime projects

Name	Functional area
• BIRT	• Reporting engine
• Equinox	• OSGi
• RAP	• AJAX platform
• ECF	• Communication framework
• EMF`	• Model runtime

Mature projects

… but taking the incubating projects into account Eclipse Runtime already reached a critical mass

Eclipse Runtime projects

	Name	Functional area
Mature projects	• BIRT	• Reporting engine
	• Equinox	• OSGi
	• RAP	• AJAX platform
	• ECF	• Communication framework
Projects in incu-bation	• EclipseLink	• Object persistence
	• Swordfish	• SOA Runtime
Proposed	• Riena	• C/S Appl. Platform

Taking projects in incubation into account the portfolio of Eclipse Runtime projects reached a critical mass

Most of the Runtime projects leverage existing Eclipse tooling projects for its tooling

Eclipse Runtime projects …

… leveraging Eclipse tooling projects

Eclipse Runtime projects …		… leveraging Eclipse tooling projects
• BIRT	⟺	• BIRT
• Equinox		• PDE
• RAP	⟺	• PDE, JDT, ATF (WTP)
• EclipseLink	⟺	• JPA (WTP)
• ECF		• ?
• Riena		• ?
• Swordfish	⟺	• STP, WTP

- ▪ Few Runtime projects have their own tooling
- ▪ Most of them are leveraging existing other Eclipse tooling projects

Questions and (proposed) answers

What is the status of Eclipse Runtime technologies today?

- The portfolio of Eclipse Runtime projects already reached a critical mass
- Most of the Runtime projects leverage existing Eclipse tooling projects

What is (not) the goal of Eclipse Runtime?

What are the key characteristics of Eclipse Runtime technologies?

What is the business value for the ecosystem?

Questions and (proposed) answers

What is the status of Eclipse Runtime technologies today?	• The portfolio of Eclipse Runtime projects already reached a critical mass • Most of the Runtime projects leverage existing Eclipse tooling projects
What is (not) the goal of Eclipse Runtime?	• It is not the goal to reach to arbitrary Runtime technologies • It is the goal to grow the portfolio of Runtime projects based on OSGi organically and opportunity-driven where it adds value to the eco system
What are the key characteristics of Eclipse Runtime technologies?	
What is the business value for the ecosystem?	

Key characteristics of Eclipse Runtime

- 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

Business value for the Eclipse ecosystem

The delivery of Eclipse runtime technologies creates an additional market for the ecosystem:

- Selling commercial plug-in components on top of the open source runtime technologies enabled by Equinox

- Selling support & maintenance contracts

- Technical consulting through higher level of integration on top of the basic integration

Summary

What is the status of Eclipse Runtime technologies today?	• The portfolio of Eclipse Runtime projects already reached a critical mass • Most of the Runtime projects leverage existing Eclipse tooling projects
What is (not) the goal of Eclipse Runtime?	• It is not the goal to reach to arbitrary Runtime technologies • It is the goal to grow the portfolio of Runtime projects based on OSGi organically and opportunity-driven of where it adds value to the eco system
What are the key characteristics of Eclipse Runtime technologies?	• Integration of the different Eclipse Runtime technologies on a common platform (Eclipse OSGi) • Extensible through common APIs • Interoperability between runtime components • Integration with Eclipse tooling technologies
What is the business value for the ecosystem?	Eclipse runtime technologies will create additional markets for the ecosystem to sell commercial plug-in components on top of the open source runtime technologies, support & maintenance contracts, and technical consulting

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Other Communities

- "Obvious" intersection/overlap
    - Struts/Velocity
    - Felix
    - Tuscany / Fabric3
    - ServiceMix
- ObjectWeb
    - EasyBeans
- Java
    - JEE 6
- Spring Dynamic Modules
    - Mapping Spring bean and containers onto OSGi things
    - Lots of activity from Oracle and BEA
    - Appear to be making good progress
- OSGi Enterprise working group - State and goals

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Eclipse Runtime community

- What is the community?
- What do they want?
- How to grow the community?

What is the community?

- Eclipse Runtime technologies are being adopted by a wide variety of ISVs and enterprises
    - Equinox server side
        - IBM Websphere, Jazz, …; BEA Microservices, Heiler Software, …
        - Eclipse projects (ECF / BIRT / RAP, ...)
    - RCP
        - Standard applications, Custom applications / application platforms, e.g. Aquintos, NASA, ESA, City of Stuttgart
    - RAP
        - RCP users extending their apps to the web, e.g. CAS, Critical Software
    - BIRT
    - EMF
    - ECF

What do they want?

- **ISVs**
  - A middleware stack ranging from persistence to UI
  - Enabling of Product lines
  - Distributed services
  - Rich Desktop & Rich Web
  - Great looking UIs
  - Extensibility for their domain
- **Enterprises**
  - Less steep learning curve
  - Better Table / Grid
  - Process oriented UI
  - Authentication / Authorization
  - Deployment

How to grow the community

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

- **One name, one place**
  - A common name to identify Eclipse Runtime technology
  - One place to go to learn about Eclipse Runtime technology - website
  - A common newsgroup?

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

- **A clear messaging**
  - ... that we are NOT running a development tool on servers

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Why a new top level project?

- **There is no home for runtime technologies**
    - Technology is mainly 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
- **A 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 usually better then integration between arbitrary projects
- **Participation is optional, nobody needs to move**
    - The new top level project should just be the starting point. It is not unlikely that we will end up with multiple top level projects for runtime just like in the tools space (Eclipse project, Tools project, Webtools project ...)

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Charter – Mission

- The Equinox Top-Level Project is designed to foster, promote and house runtime frameworks in the Eclipse community. These efforts strive towards the common goal of providing a uniform component model across a wide variety of computing environments. OSGi forms the basis of this infrastructure. Equinox projects support embedded devices, desktops, and enterprise systems as well as clients and servers to provide commonly required middleware. Here the term "middleware" refers to the original definition of the term: software which is neither part of the underlying operating system nor part of the application. It is the goal of Equinox to provide those intermediate software services which enable applications to be more easily and concisely constructed.
- It is the unique vision of Equinox to support a "tier-less" programming model where developers are need not concern themselves with whether their application domain code is run on a device, a client or a server. By developing a consistent middleware architecture, Equinox effectively eliminates these tiers and enables developers to focus on the business problem at hand and still have many system architecture options available at deployment time.

Charter – Scope

- 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 EEG, MEG and VEG 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 people using OSGi.
- All implementations must be based on OSGi and run on Equinox.
- Implementations of middleware / runtime standards from organizations such as W3C, OASIS, JCP.
- Development of non-standard infrastructure deemed to be essential to the running and management of OSGi-based systems.
- Incidental tooling efforts to enable or facilitate particular Equinox runtime functions in conjunction with (e.g., as a component of) an Equinox sub-project.

- It is explicitly not the mandate to house all runtime efforts at Eclipse.
- Major tooling efforts are not in scope
- Industry-specific vertical technologies

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Delivery strategy

- ## Integration testing
  - Making sure that the different runtime projects play nicely together (at all time)
  - Provide infrastructure, allow easy contribution of tests
  - Participation should be possible for any project providing runtime technology
- ## All in one downloads for SDK, runtime
- ## Do we need a separate release train for runtime technology?