JBoss Developer Studio
Everything You Need to Develop Web 2.0 Rich Applications

David Ward, JBoss Solutions Architect, Red Hat
AGENDA

- Speaker Background and Credits
- Product Alignment, History, Overview and Access
- Technology Highlights
  - JSF, Ajax4jsf and RichFaces
  - Hibernate Support
  - Seam Support
  - jBPM Support
- Demonstration (*as time permits*)
- Roadmap
- Questions and Answers
SPEAKER BACKGROUND

• JBoss Solutions Architect
• JBoss “old-timer”
• Command line guy
  • UNIX and Linux background
  • Still cracks open vi (okay, vim)...
• Eclipse convert
• JBoss Developer Studio user!
ADDITIONAL CREDITS

• Max Rydahl Andersen, JBoss division of Red Hat
  • Hibernate Tools Lead Developer
  • Seam contributor
  • JBoss Developer Studio Lead
• Max Katz, Exadel
  • Senior Systems Engineer
  • JSF, Ajax4jsf and RichFaces Expert
PRODUCT ALIGNMENT

Design & Develop | Integrated Runtime Platforms | Manage

JBoss Developer Studio
- Eclipse IDE
- Integrated Tooling
- Runtime Platform

MetaMatrix Designer

Portal Platform
- JBoss Portal
- JBoss Seam
- JBoss Hibernate
- JBoss Application Server

Application Platform
- JBoss Seam
- JBoss Hibernate
- JBoss Application Server

SOA Platform
- JBoss jBPM
- JBoss Rules
- JBoss ESB
- JBoss Seam
- JBoss Hibernate
- JBoss Application Server

MetaMatrix Data Services Platform
- MetaMatrix Enterprise Server

JBoss Operations Network
## JBOSS.ORG VS. JBOSS ENTERPRISE

<table>
<thead>
<tr>
<th>Feature</th>
<th>JBoss.org</th>
<th>JBoss Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Source</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Benefits from Worldwide Community Testing</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Feature Releases</td>
<td>Experimental</td>
<td>Mature</td>
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<tr>
<td>Monthly Update Program</td>
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<td>X</td>
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<tr>
<td>Quarterly Service Pack Program</td>
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<td>X</td>
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<tr>
<td>Hot Fix Program</td>
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<td>X</td>
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<tr>
<td>Automated Software Update and Alert Service</td>
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<td>X</td>
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<tr>
<td>Bug Escalation Process</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>24x7 Production Support &amp; Consultative Service</td>
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<td>X</td>
</tr>
<tr>
<td>Platform &amp; Training Certifications</td>
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<td>X</td>
</tr>
<tr>
<td>Defined Support SLA &amp; End-Of-Life Policy</td>
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<td>X</td>
</tr>
<tr>
<td>Out-of-the-box Configured for Production Use</td>
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<td>X</td>
</tr>
<tr>
<td>Includes JBoss Operations Network (JON)</td>
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<td>X</td>
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<tr>
<td>Availability of JON Monitoring</td>
<td></td>
<td>X</td>
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<tr>
<td>Extensive Coordinated Internal/External Testing</td>
<td></td>
<td>X</td>
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<tr>
<td>Open Source Assurance &amp; Indemnification Program</td>
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<td>X</td>
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HISTORY

- JBoss IDE
  - Open Source IDE since 2001
  - Plugins for Hibernate, jBPM, Drools, and more
- Exadel Studio
  - Commercial IDE since 2004
  - JSF, Struts, Hibernate and more
  - RichFaces / Ajax4JSF framework
- Red Hat partners with Exadel in March 2007 with goals:
  - Bring tools to open source
  - Feed into a supported development environment
    - 9+ months later, introduced...
JBoss Developer Studio 1.0
OVERVIEW

• One Install
• Everything preconfigured and ready for doing Web 2.0 development
  • JBoss Tools
  • Eclipse and Web Tools preconfigured
  • JBoss EAP with JBoss AS and Seam preconfigured
  • 3rd party plugins bundled and configured
  • Access to RHEL and Red Hat Network
  • Access to JBoss / Red Hat supported software
• Available:
  • as part of an overarching Developer Subscription
  • as a standalone $99 subscription
PLATFORM SUPPORT

- Available in JBDS 1.0
  - Linux (GTK)
  - Win32
  - Mac OSX (arrived later)
- Available in JBDS 1.1 (currently CR1)
  - Linux (GTK)
  - Linux (GTK) X86_64
  - Win32
  - Mac OSX
WHAT GETS INSTALLED

- **Installer**
  - JBoss Tools
    - JBoss AS, Hibernate, Seam, jBPM, JSF, Struts, ...
  - 3rd Party
    - TestNG, SpringIDE, etc.
- Eclipse and Web Tools
  - Java, JEE, Other servers
- JBoss EAP
  - JBoss AS, Hibernate and Seam
BUNDLED JBOSS EAP

- Access to the supported binaries of:
  - JBoss AS
  - JBoss Seam
  - Hibernate
  - ...
- Preconfigured in JBDS
ACCESS TO RED HAT ENTERPRISE LINUX

- Linux development tools
- Red Hat Network for development purposes
- Build applications directly for the supported platform
- Take advantage of RHEL built-in virtualization for development environments
TECHNOLOGY HIGHLIGHTS

- JSF, Ajax4jsf and RichFaces
- Hibernate Support
- Seam Support
- jBPM Support
...and more...
WHAT IS JSF?

- Building Java web applications out of UI components
- Standard presentation technology in the Java EE stack
USING JSF

1. Development

   Facelets/JSP Page

   ```
   <h:form>
     <h:panelGrid columns="2">
       <h:outputText value="#{msg.emailLabel}"/>
       <h:inputText value="#{login.email}"/>
       <h:outputText value="#{msg.passwordLabel}"/>
       <h:inputText value="#{login.password}"/>
     </h:panelGrid>
     <h:commandButton action="#{login.check}" value="#{msg.btnLabel}"/>
   </h:form>
   ```

2. JSF Component Tree

3. Output

   HTML

   ```
   <body>
     <form>
       <table border="1">
         <tr>
           <td>Email: </td>
           <td><input type="text" name="id0..id5" /></td>
         </tr>
         <tr>
           <td>Password: </td>
           <td><input type="password" name="id6..id9" value="" /></td>
         </tr>
       </table>
       <input type="submit" value="Sign In"/>
     </form></body>
   ```

4. Browser

   ```
   Email: 
   Password: 
   Sign In
   ```
JSF VISUAL EDITING

- Supports JSF, Facelets, HTML, etc.
- Includes and CSS stylings are honored
- Rendering by a real browser engine (Mozilla)
- EL expression completion including Seam components
- OpenOn (<F3>) on expressions
WE WANT...

Web 2.0

RIA

AJAX
RIA WITH AJAX

- AJAX (Asynchronous Javascript And Xml)
  - A technique for building browser-based RIAs (Rich Internet Applications)
- Richer, faster and more interactive
- Basic Idea?
  - Update only part of the page!
AJAX DEVELOPMENT IS HARD

- Hand-coded AJAX development is challenging (JavaScript, DHTML, XMLHttpRequest, DOM)
- Development time spent on battling browser incompatibilities (Up to 80%)
- Hand-coded AJAX development doesn't fit the JSF component model!
THE SOLUTION

JavaServer Faces
+
AJAX
=
JBoss RichFaces

Rich JSF Components
JBOSS RICHFACES

- 70+ out-of-the-box rich JSF components
- 2 tag libraries ("a4j:" and "rich:""
- AJAX-enabled components
- Add AJAX support to any standard JSF component
- Skinability (themes)
- Works with JBoss Seam (discussed later)
TWO TAG LIBRARIES IN RICHFACES

- **a4j**: page-level AJAX support
  - Foundation-type components
  - You control what to update
  - Power and flexibility
- **rich**: component-level AJAX
  - Out-of-the-box components
  - Updates done automatically
A4J: TAG LIBRARY

**a4j:commandButton**

Name: JSFDays  
Hello JSFDays!

**a4j:commandLink**

Name: JSFDays  
Hello JSFDays!

**a4j:push**

**a4j:status**  
Loading...

**a4j:poll**

Polling Active:  
Stop Polling

**a4j:support**

Add AJAX support to any standard JSF controls

**a4j:jsFunction**

Send AJAX request from JavaScript code

**a4j:include**

**a4j:repeat**
WHAT IS HIBERNATE?

- Object Relational Mapping (ORM) Persistence Framework
- Any Plain Old Java Object (POJO) can be a persistent class
- Dynamically generates vendor-specific SQL
- Supports most databases (Oracle, MS-SQL, DB2, Sybase, etc.)
- Supports SQL overriding and stored procedures
- Basis for the Java Persistence API (JPA)
HIBERNATE SUPPORT

- Supports both hbm.xml and JPA
- HQL/JPA-QL query and Criteria prototyping
- Java inline query code completions and query validation
- Mapping visualization
- Reverse engineering from database schema
- Flexible code generation
WHAT IS SEAM?

- Enterprise Java application framework
- Easy integration of EJB3, JSF and AJAX
- Annotation support and “configuration by exception”
- Declarative state management
- “Subversion” of control
- Integration with jBPM, Drools, and more...
- Basis for JSR-299 (Web Beans specification)
SEAM SUPPORT

- Seam Wizards
- Hot deploy automatically setup
- Validation of Seam constructs
- EL understanding in java, pages.xml, etc.
- Components.xml editor
WHAT IS JBPM?

• Business Process Management system
• Declarative, graph-oriented business process definitions
• Supports human tasks
• Extensible via custom action handlers
• Persistent state management via Hibernate
• Embeddable vs. monolithic architecture
• Can run inside or outside any application server
JBPM SUPPORT

- jBPM Visual Editing
- Palette of workflow components
- Graphical / source views kept in sync
- Expression editors
- Action property editors
- Process deployer
...AND MORE...

- Project Archives
  - Incremental update
  - Hot deploy
  - Not dependent on WTP projects
- Restart by “Touch”
- Struts 1.x
- Project explorer navigation and direct editing
- ...
Just kidding!
That's more like it. Let's move on to the demo...
DEMONSTRATION

- As time permits...
  - Create a fully functional CRUD application in minutes!
  - Highlights from Wednesday afternoon's JBDS lab.
ROADMAP

• JBT 2.1
  • Maven/Ant project structures
  • JBoss ESB XML editor
  • Better performance in Seam projects and Visual Page Editor

• JBT 3.x (based on Ganymede/Eclipse 3.4)
  • Drools plugin inclusion
  • Seam pages.xml graphical editor
  • BIRT integration (reports)
  • TPTP integration (profiling JBoss AS)
  • SAR, HAR and ESB archive support
  • JBoss WS support in WTP

• JBDS 2.0 (based on JBT 3.x and...)
  • JBoss SOA Platform support
QUESTIONS AND ANSWERS

• Open Forum