



## 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

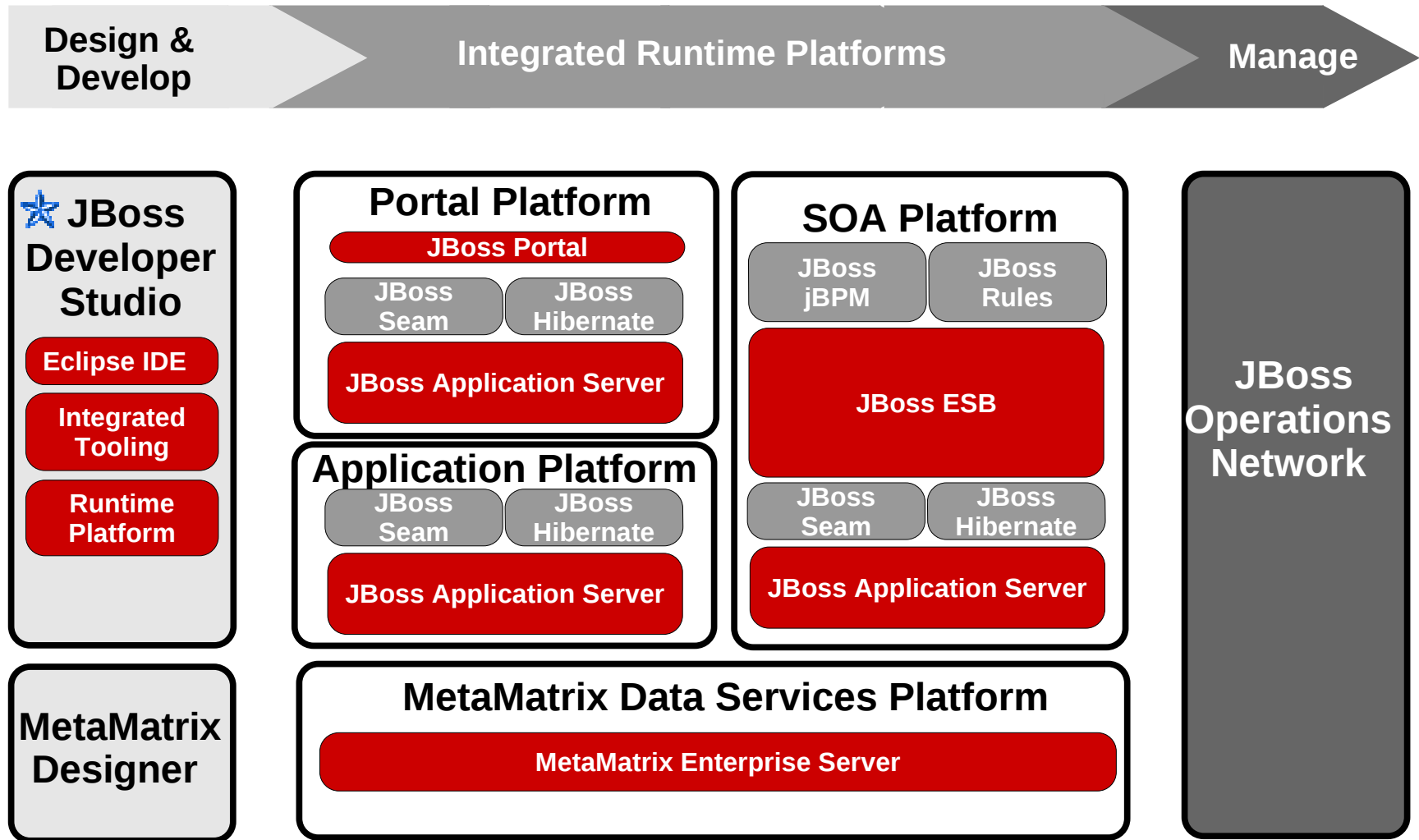
- JBoss Solutions Architect
- JBoss “old-timer”
- Command line guy
  - UNIX and Linux background
  - Still cracks open vi (okay, vim)...
- Eclipse convert
- JBoss Developer Studio user!



# ADDITIONAL CREDITS

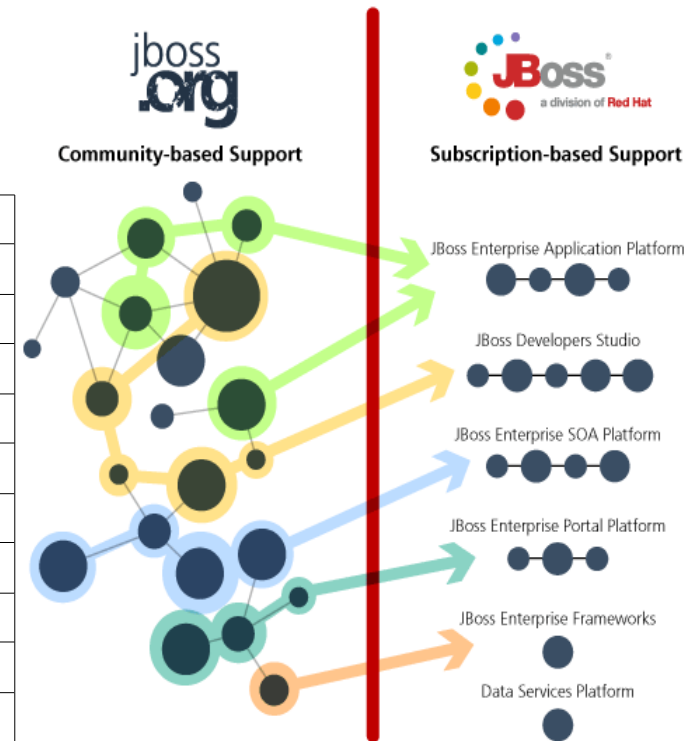
- Max Rydahl Andersen, JBoss division of Red Hat
  - Hibernate Tools Lead Developer
  - Seam contributor
  - JBoss Developer Studio Lead
- Max Katz, Exadel
  - Senior Systems Engineer
  - JSF, Ajax4jsf and RichFaces Expert

# PRODUCT ALIGNMENT



# JBOSS.ORG VS. JBOSS ENTERPRISE

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



# 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

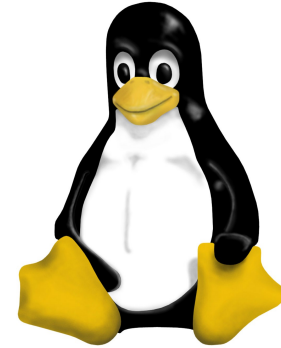


# OVERVIEW

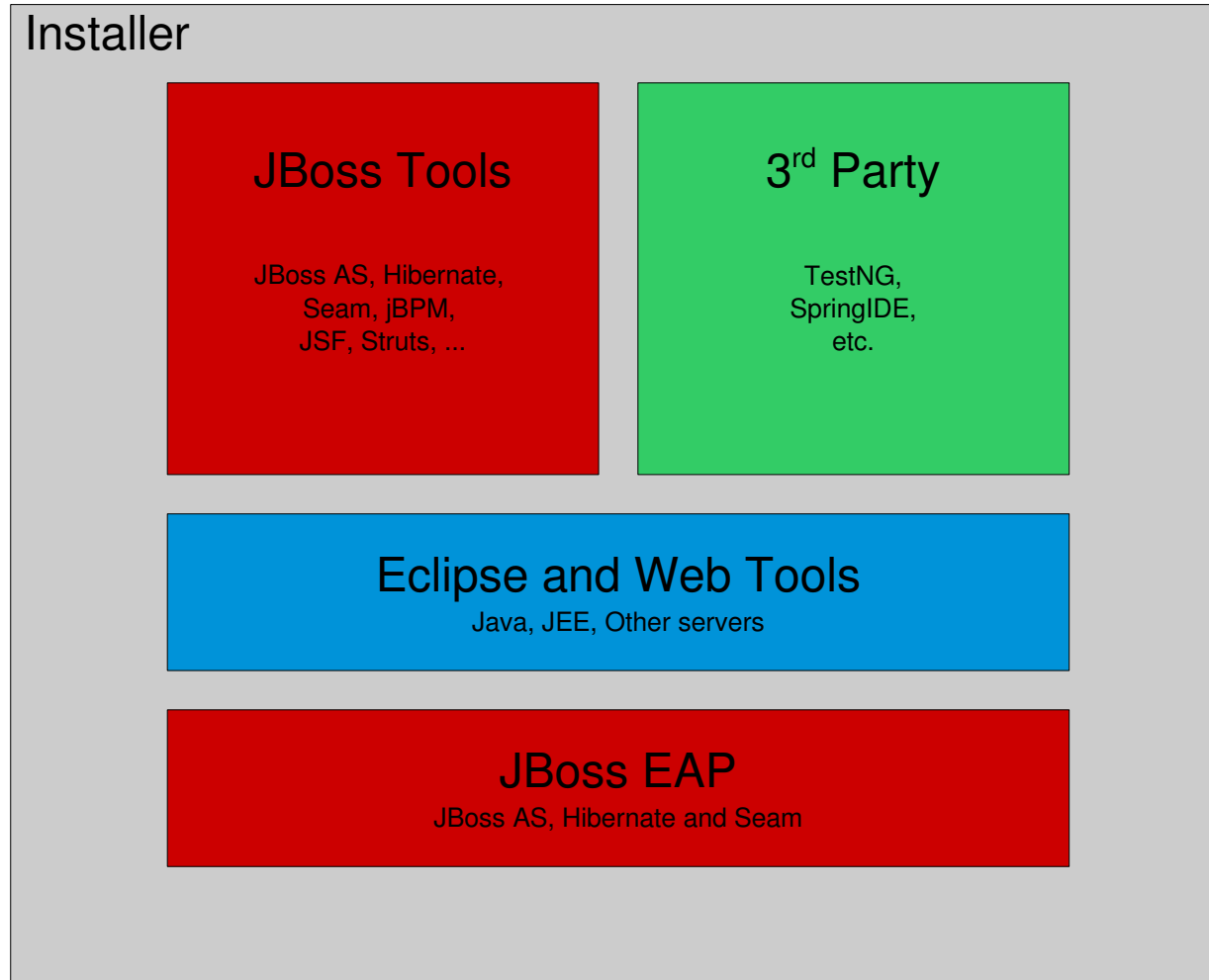
- One Install
- Everything preconfigured and ready for doing Web 2.0 development
  - JBoss Tools
  - Eclipse and Web Tools preconfigured
  - JBoss EAP with JBoss AS and Seam preconfigured
  - 3<sup>rd</sup> party plugins bundled and configured
  - Access to RHEL and Red Hat Network
  - Access to JBoss / 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

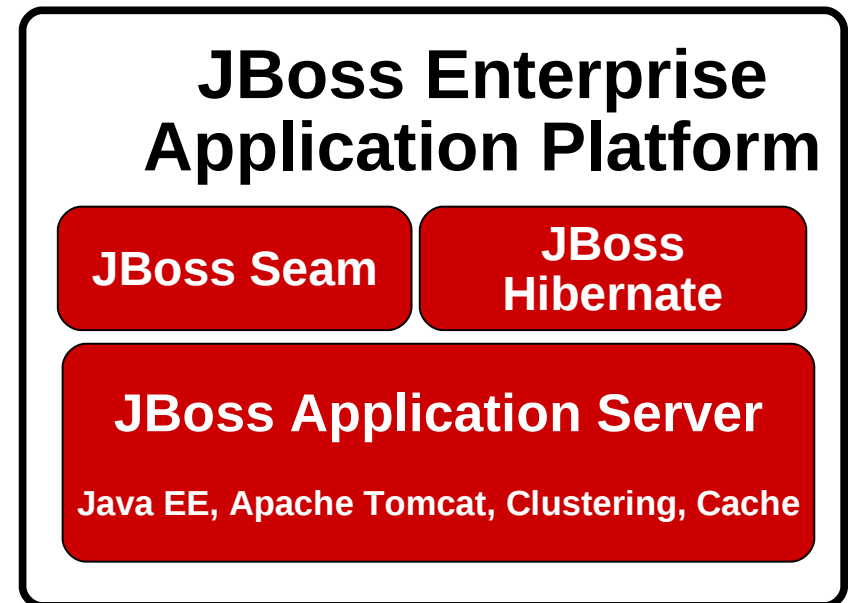


# WHAT GETS INSTALLED



# 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

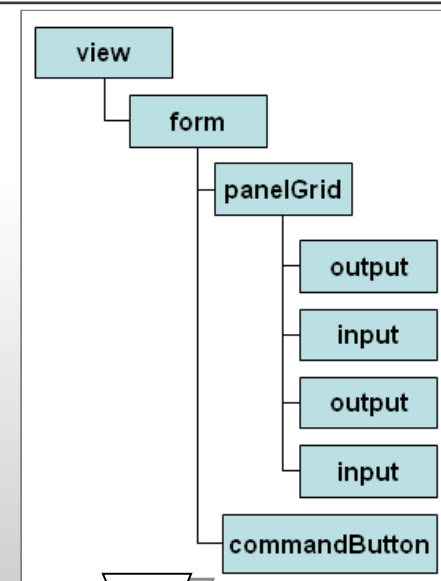
**Development**

## 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

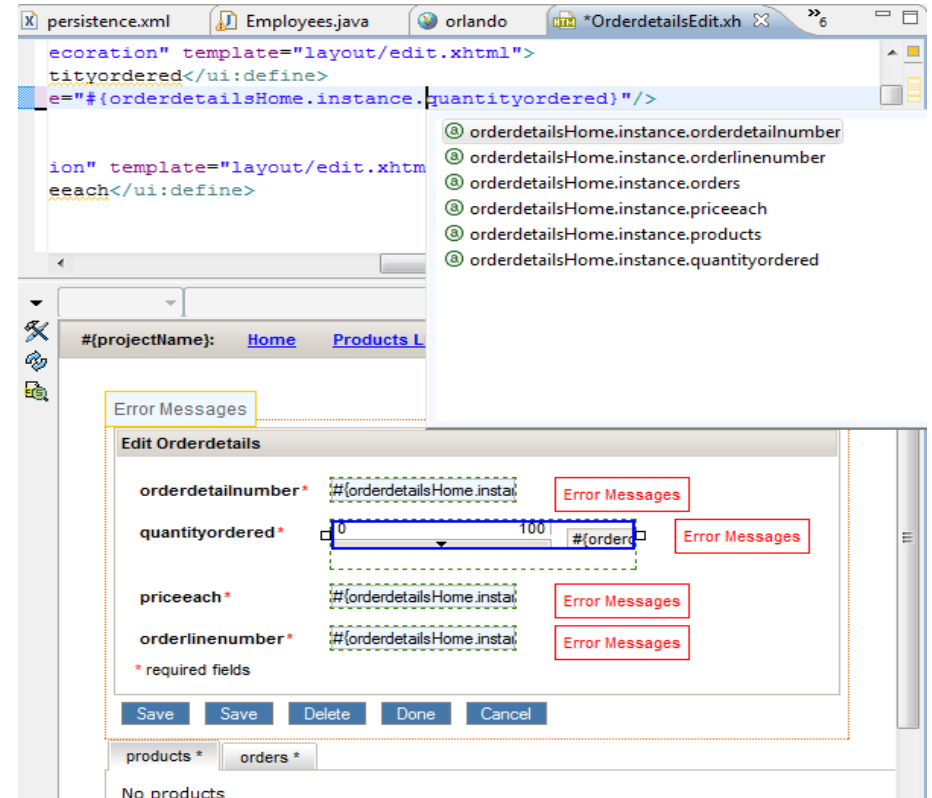
```
<table border="1">
  <tbody>
    <tr>
      <td>Email:</td>
      <td><input type="text" name="_id0:_id3" /></td>
    </tr>
    <tr>
      <td>Password:</td>
      <td><input type="password" name="_id0:_id5" value="" /></td>
    </tr>
  </tbody>
</table>
```

## Browser

Email:	<input type="text"/>
Password:	<input type="password"/>
<input type="button" value="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:    
Hello JSFDays!

## a4j:commandLink

Name:  [Say Hello](#)  
Hello JSFDays!

## a4j:push



## a4j:status

Loading...

## a4j:poll

Polling Active

Server Date: Fri Feb 29 13:01:29 PST 2008



## a4j:support

*Add AJAX support to any standard JSF controls*

## a4j:jsFunction

*Send AJAX request from JavaScript code*

## a4j:include



## a4j:repeat

Product Code	Proposed F
1	<input type="text" value="0.0"/>
2	<input type="text" value="23"/>
3	<input type="text" value="4"/>

# RICH: TAG LIBRARY

**Write your own custom rich components with built-in AJAX support**

The CDK includes a code-generation facility and a templating facility using a JSP-EL creation. The component factory works like a well-oiled machine allowing the creation of rich components that is faster than the creation of simpler components by means of the traditional coding approach.

**Leverage the whole set of JSF benefits while writing rich components**

Add AJAX capability to existing JSF applications  
 Write your own custom rich components with built-in AJAX support  
 Package resources with the application's Java class files  
 Easily generate images on-the-fly  
 Create a modern rich user interface look-and-feel

Ajax4jsf provides a skinnability feature that allows you to change the look of your application without changing the Java code (e.g. to adjust generated parts of the UI). Note: skinnability is not an AJAX complement.

This tool-tip content was **pre-rendered** to the page. The look of this tool-tip is 100% defined by skin.

Source List: ajaxCFC, AJAXEngine, AjaxAC, MonoRail, wddxAjax, AJAX AGENT, FastPage, JSMX, PAJAJ, Symphony, PowerWEB

PHP Frameworks: Flexible Ajax

File Links: New, Open, Save As..., Close, Exit

Zoom In, Zoom Out

JSF: You can drag this window

Available Items: Open, Save, Save All, Delete, Copy all, Copy, Remove, Remove All

Currently Active Items: Create Folder, Create Doc, Find, First, Up, Down, Last

Make Model: Chevrolet Corvette, Chevrolet Malibu, Chevrolet Malibu, Chevrolet S-10, Chevrolet Tahoe, Ford Taurus, Ford Explorer, Nissan Maxima

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Mar 12, 2008, 12:00

March, 2008						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
9	24	25	26	27	28	29
10	2	3	4	5	6	7
11	9	10	11	12	13	14
12	16	17	18	19	20	21
13	23	24	25	26	27	28
14	30	31	1	2	3	4

State	City	Time Zone
California	Sacramento	GMT-8
Colorado	Denver	GMT-7
Connecticut	Hartford	GMT-5

VIN	Stock
GFRTVGRHSEYUMO	UARNCC
ILZPSIAMQBKFUD	CJKHVM
MAODELVBWVMJKSAY	IHOWLJZ
SBXFILLGDQPAM	QSWEDCR
CUQRMRHPAJCI	OIYALWVZ
MPBWPSDQIYMAQ	CIAMMIF

Chris Rea

- The Road To Hell
  - The Road To Hell (Part 2)
  - Tell Me There's A Heaven
  - Looking For A Rainbow
  - Daytona
  - That's What They Always Say
  - You Must Be Evil
  - I Just Wanna Be With You
  - The Road To Hell (Part 1)
  - Let's Dance
  - Your Warm And Tender Love
  - Texas
- Bach, Johann Sebastian
  - Forever Classics
- Baccara
- David Miles Huber

# 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

The screenshot displays an IDE interface with several components:

- Entity Diagram:** Shows two entities: `org.domain.orlando.entity.Orderdetails -> ORDERDETAILS` and `org.domain.orlando.entity.Orders -> ORDERS`. The `ORDERDETAILS` entity has attributes `orderdetailnumber` (int), `orderlinenumber` (short), `priceeach` (double), and `quantityordered` (int). It has associations with `Orders` (1 to many) and `Products` (1 to many). The `ORDERS` entity has attributes `ordernumber` (int), `comments` (java.lang.String), `orderdate` (date), and `requireddate` (date). It has associations with `Customers` (1 to many) and `Orderdetails` (1 to many). A key element is also shown.
- Code Editor:** Shows the `getEjbql()` method in `OfficesList.java` with the following implementation:

```
@Override
public String getEjbql() {
    return "select officeces from Offices offices where offices.";
}
```
- Console:** Displays the generated HQL query:

```
select
offices0_.OFFICECODE as OFFICECODE31_,
offices0_.ADDRESSLINE1 as ADDRESSL2_31_,
offices0_.ADDRESSLINE2 as ADDRESSL3_31_,
offices0_.CITY as CITY31_,
offices0_.COUNTRY as COUNTRY31_,
offices0_.PHONE as PHONE31_,
offices0_.POSTALCODE as POSTALCODE31_,
offices0_.STATE as STATE31_,
offices0_.TERRITORY as TERRITORY31_
from
PUBLIC.OFFICES offices0_
```
- Right Panel:** Lists attributes for the `Offices` entity: `addressline1 - Offices`, `addressline2 - Offices`, `city - Offices`, `country - Offices`, `officecode - Offices`, `phone - Offices`, `postalcode - Offices`, `state - Offices`, and `territory - Offices`.

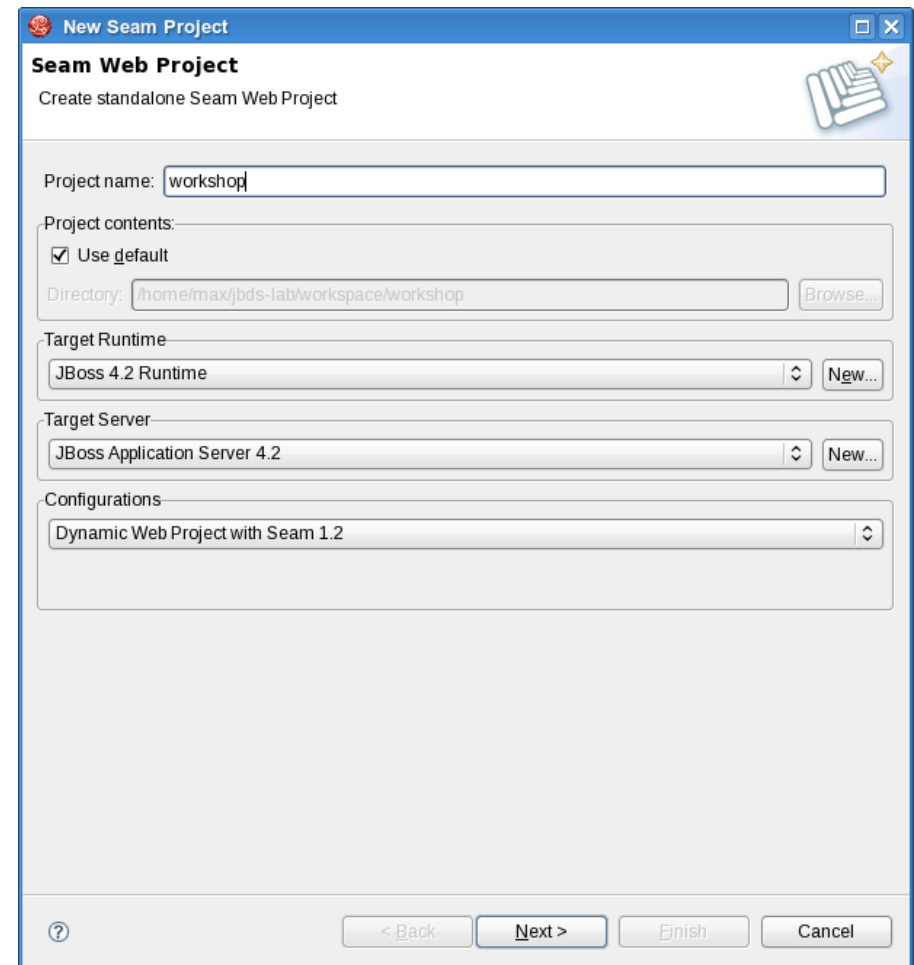
# WHAT IS SEAM?

- 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



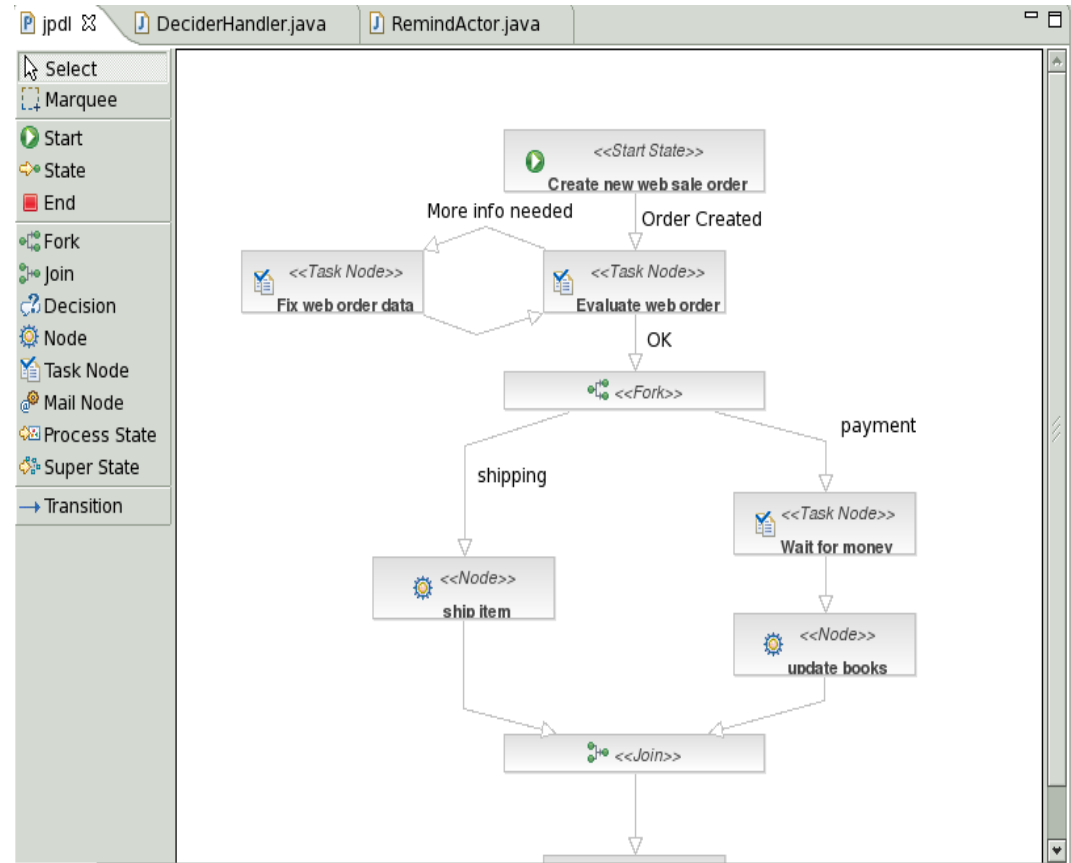
# WHAT IS JBPM?

- 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



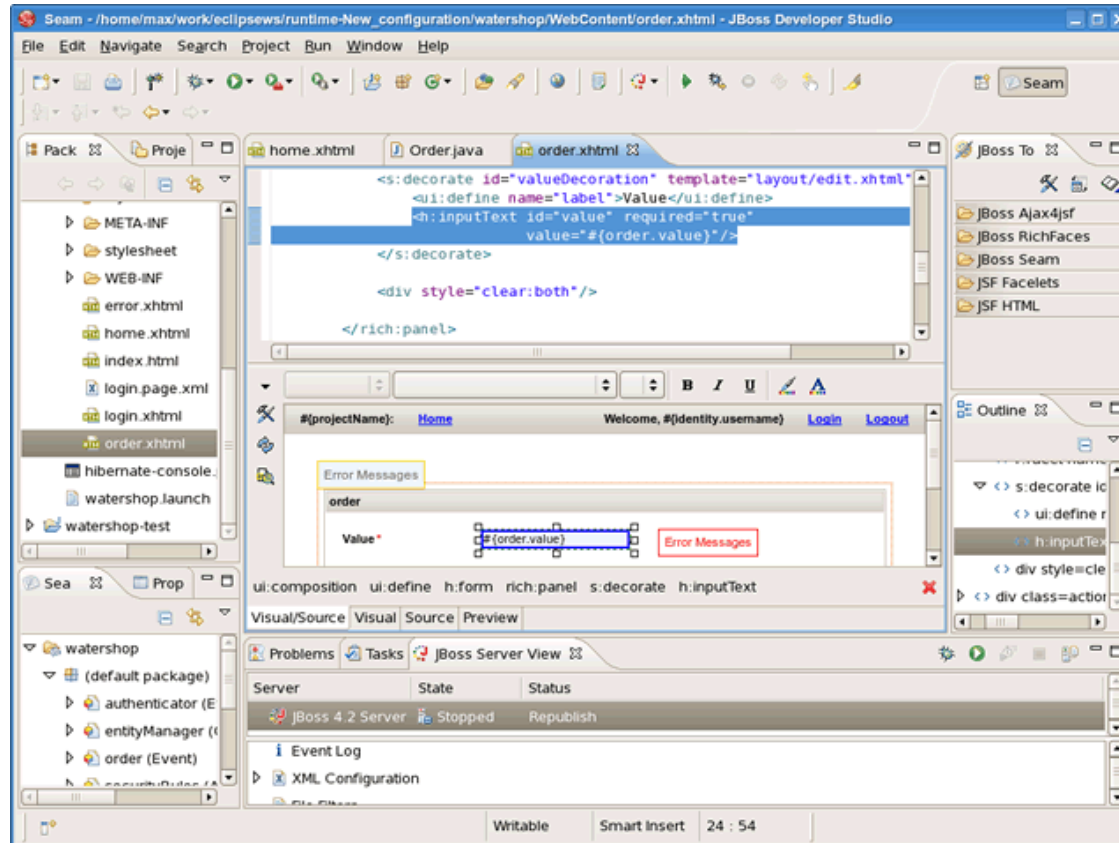
## ...AND MORE...

- Project Archives
  - Incremental update
  - Hot deploy
  - Not dependent on WTP projects
- Restart by “Touch”
- Struts 1.x
- Project explorer navigation and direct editing
- ...





# SCREENSHOT



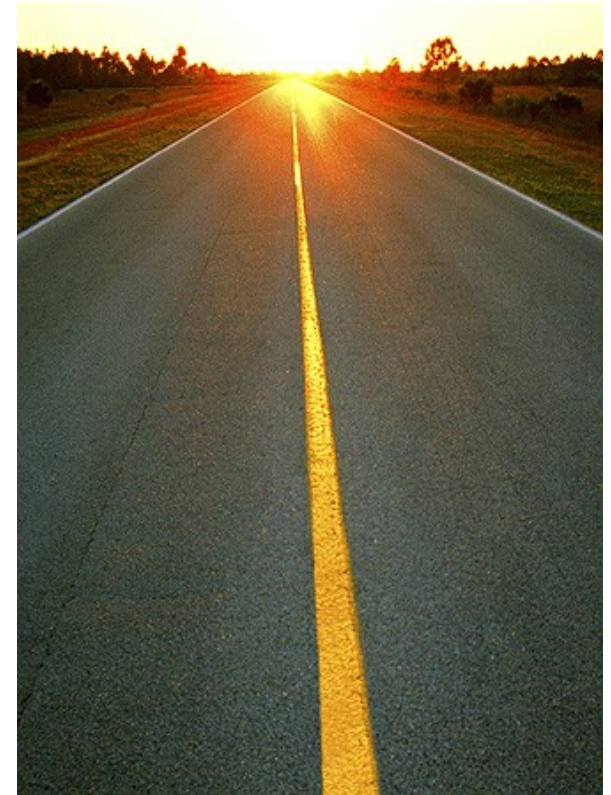
*That's more like it. Let's move on to the demo...*

# 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

