



## JBoss IDE Persistence Tools

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## JBoss Eclipse IDE Quick Intro

- Started in late 2002 / early 2003 by Hans Dockter.
- Current Team Members
  - ✓ Marshall Culpepper – Team Lead, Persistence Tools
  - ✓ Max Rydahl Andersen – Persistence Tools
  - ✓ Koen Aers – JBPM Designer
  - ✓ Laurent Etienne – JBossIDE Core
  - ✓ Rob Stryker – JBossAOP Developer, JSR88
  - ✓ Your Name Here!
- Primary Goals
  - ✓ Full IDE integration for the entire JBoss JEMS stack.
    - Currently we support JBoss App Server, JBossAOP, JBPM, Hibernate 3, and EJB3.
    - We are evaluating feature sets and requirements for other JEMS projects such as JBossCache, JBossRemoting, JBossWS, etc.
  - ✓ Take over the world!
    - We want to become the de facto Development Environment for all developers who use JBoss technologies.



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## Agenda

- JBoss Eclipse IDE
- Persistence Tools
  - ✓ Hibernate & EJB3 Tools
  - ✓ Demos
- The Future

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## JBossIDE Extensions

- JBossAOP Developer
  - ✓ Editor markers for notification of methods and fields that are intercepted in your code.
  - ✓ Supports both simple and complex pointcut creation via Create Pointcut wizard.
  - ✓ Supports interception of JDK 1.4 style annotations (1.5 coming soon)
- JBPM Designer
  - ✓ JBPM Process Designer supports join, fork, action, and others
  - ✓ Outline view shows both a smaller version of the process designer and a hierarchy view of the generated PAR's descriptor.
- Persistence Tools
  - ✓ Goal: Provide a fully "round-robin" style of persistence development supporting both EJB3 and Hibernate3.
  - ✓ HQL/EJBQL Query and Result Set views
  - ✓ Database Reverse Engineering to H3 POJO + Mapping XML or EJB3 POJO models
  - ✓ EJB3 Project and Bean Wizards for simplified development



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## Hibernate 2 Tools

- Supported tools
  - ✓ SchemaExport/Update
  - ✓ hbm2java
  - ✓ Hibernate Console (the tool previously known as Hibern8IDE)
  - ✓ MiddleGen w. Hibernate plugin
- Status:
  - ☺ Ok – usable
  - ☺ Open source
  - ☹ Non-consolidated,  
n tools = n different configurations
  - ☹ No real IDE Integration
  - ☹ Low extensibility



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## Persistence Tools

- Hibernate 3
  - ✓ Provides unifying meta-model & Configuration
- JBoss Eclipse IDE
  - ✓ Mapping Editor
  - ✓ Hibernate Console
    - Query prototyping/Introspection
  - ✓ Development Wizards
    - Wizard for hibernate.cfg.xml
    - Reverse engineering
    - Artifact Generation Wizard
- Ant Integration



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## Demo



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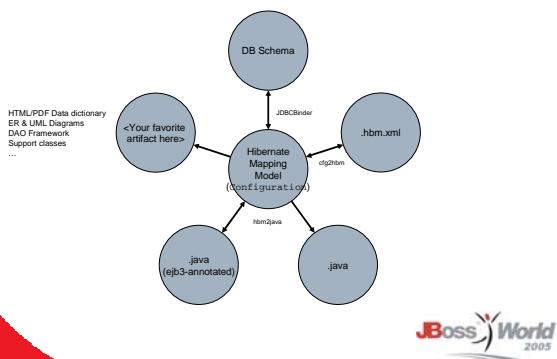
## Extensibility

- Reverse Engineering extensions
  - ✓ ReverseNamingStrategy
    - e.g. PERSON\_ADDRESS => PersonalAddress
- Artifact generation done via Exporters
  - ✓ Programmatic Exporters
    - SchemaExport, JDBCBind
  - ✓ Template based Exporters
    - hbm2java, cfg2hbm, ...



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## One Model To Rule Them All



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## Hibernate 3 Mapping Model

Database level	Domain level
<ul style="list-style-type: none"><li>• Table</li><li>• Column</li><li>• Constraint<ul style="list-style-type: none"><li>✓ Index</li><li>✓ Unique</li></ul></li><li>• ForeignKey</li></ul>	<ul style="list-style-type: none"><li>• Entity/Class</li><li>• Property</li><li>• Component</li><li>• Associations<ul style="list-style-type: none"><li>✓ many-to-one</li><li>✓ one-to-one</li><li>✓ etc.</li></ul></li><li>• &lt;meta attribute&gt;</li></ul>



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## Model Use Case: EJB3 Mapping

- Alternative to Hibernate mapping based on the budding JSR-220 standard
  - ✓ Implemented using a simple velocity template
  - ✓ Deployable as a JBoss application fragment
- Template Snippet:

```
#if($ejb3)
@Entity
@Table(name="$clazz.table.name"
@if ($clazz.table.schema
,schema="$clazz.table.schema"
#end
#if ($clazz.table.catalog
,catalog="$clazz.table.catalog"
#end
)
#end
```



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## Persistence Tools: The EJB3 Suite

- EJB3 DB Reverse Engineering
- EJB3 Wizards for
  - ✓ Stateless/Stateful Session Beans
  - ✓ Message Driven Beans
  - ✓ EJB3 Projects w/ JAR dependencies
- Existing JBossIDE functions complete the puzzle
  - ✓ Start and stop EJB3-enabled JBoss
  - ✓ Packaging an EJB3-JAR
  - ✓ Deployment of EJB3 to EJB3-enabled JBoss



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# Demo



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## Ant Integration

- Continuous integration
- "GUI's are for sissies"

```
<hibernatetool destdir="${build.dir}/topdown">
  <configuration config="etc/hibernate.cfg.xml">
    <classpath id="${classpath.for.customtypes}" />
  </configuration>

  <hbm2ddl drop="true" outputfilename="xxx.sql" />
  <hbm2java/>
  <templategen templates="myowntemplates"
    outputdir="html" />
</hibernatetool>
```



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## Future

- Improve control over reverse engineering
- More Mapping Editing support
  - ✓ hbm.xml
  - ✓ JSR-220 support (EJB3 xml and Annotations)
- Refactoring support
  - ✓ Rename field/class/etc
- ER/UML Visualization (editing?)
- Support future tools
  - ✓ hbmLint
    - Report on db and mapping mismatch, common user errors etc. as problem/warning markers
  - ✓ dataGen
    - "Automagic" generate test data
- And more...come and join us!



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## JBossIDE: The Future

- JBossIDE 1.5
  - ✓ Milestone releases every 4-6 weeks until Eclipse 3.1 is stable
  - ✓ Final releases of jBPM Designer and Persistence Tools
- Utilize Eclipse Webtools code
  - ✓ Replace current JSP / HTML / XML Editors with editors from Webtools
- Automated Build system
  - ✓ Integration Builds for extension developers
  - ✓ Simplification of release logistics
  - ✓ JUnit tests w/ notifications of error
- More JEMS Integration
  - ✓ We are accepting input for other JEMS projects / functionality you would like to see in JBossIDE. Please visit our development forums!



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