

## RHD451 JBoss Rules

### Course Summary

#### Description

The course covers Drools 4.0, including the various languages that can be used to author business rules, the Business Rule Management System, forward chaining and the RETE algorithm, advanced rule authoring, execution control, rule flow, and performance considerations and debugging. This course also serves as an introduction to rule based technologies.

#### Topics

- Understanding rule engines and overview
- Introduction to JBoss Rules
- Rule Engine Concepts
- Applying JBoss rules
- Rule formats: Decision Tables
- Rule formats: Domain Specific Languages
- The RETE Algorithm

#### Audience

This course is targeted at middleware application developers, with zero to moderate experience with rule technology. Developers who need to use rule technologies to manage their applications business logic, and integrate the rule engine with their application would get value from this course. Also application architects or advanced developers looking to improve approaches to business logic management in their applications may find this course valuable.

#### Prerequisites

Students must be familiar with basic Java and have some familiarity with Eclipse.

#### Duration

Two days

## **RHD451 JBoss Rules**

### **Course Outline**

#### **I. Understanding rule engines and overview**

- A. Course Overview and introduction
- B. A Background on Expert Systems (differences between business rule engine, expert systems and rule engines)
  - 1. Making applications reason, think
- C. An Introduction to Rules and Validation Engines
- D. Explanation of what a rule is:
  - 1. LHS for conditons (querying working memory)
  - 2. RHS for actions (modifying working memory, external code executing)
- E. Procedural vs. Declarative Programming
- F. JSR-94 (what it is, what its good for, when to use)
- G. Basic concept of an engine: externalise business logic, assert facts into engine from the application, loosely coupled logic (logic and data seperation)
  - 1. Discussion on non technical users managing or reviewing rules, what the real world issues are (use Or/XOR human misunderstanding as an example problem)

#### **II. Introduction to JBoss Rules**

#### **III. Rule Engine Concepts**

- A. Two Phase Execution
- B. Working Memory Actions (assert, retract, modify)
- C. Agenda Evaluation
- D. Rules Engine Agendas
- E. What is an Agenda?
- F. Conflict Resolution

#### **IV. Applying JBoss rules**

- A. The JBoss Rules Languages (DRL)
- B. Why not XML? XML abuse, lack of XML editors
- C. Constraint language (rule assembly) versus semantics in eval, predicates and RHS
- D. XML alternative (when to use)
- E. Functions
- F. The engines "native" api (part of lab)
- G. How to integrate API with your applications, JSE, JEE etc
- H. Dynamic Rules
- I. Rule Addition
- J. Rule Retraction
- K. Testing

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### **Course Outline (cont'd)**

#### **IV. Rule formats: Decision Tables**

Decision tables

#### **V. Rule formats: Domain Specific Languages**

- A. DSLs
- B. Other options
- C. Groovy and other semantic language support
- D. visual rule formats (decision trees)

#### **VI. The RETE Algorithm**

- A. Rete Algorithm
- B. How a Rete network is created
- C. How facts propagate (diagrammatic)
- D. What is an activation?
- E. The stateful nature of RETE