BPM using jBPM 5 and Beyond

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Overview

• What is BPM?
• Getting started with jBPM5
• From Workflow to BPM
• Extra features
• Social, Cloud and Mobile
• Roadmap
What is BPM?

**Business Process Management**

A *business process* is a process that describes the order in which a series of steps need to be executed, using a flow chart.
Why BPM?

- Visibility
- Monitoring
- Higher-level

- Continuous improvement
- Speed of development
- Increased agility
Key Characteristics of jBPM5

• Open-source business process management project offering:
  – generic process engine supporting native BPMN 2.0 execution
  – targeting developers and business users
  – collaboration, management and monitoring using web-based consoles
  – powerful rules and event integration
Getting started with jBPM5!
Core Engine

• Core engine is a workflow engine in pure Java
  – state transitions
  – lightweight
  – embeddable
  – generic, extensible
Core Engine

Knowledge Base

Stateful Knowledge Session

Process Definition

Process Instance
<definitions ... >
  <process id="com.sample.bpmn.hello" name="Hello World" >
    <startEvent id="_1" name="StartProcess" />
    <sequenceFlow sourceRef="_1" targetRef="_2" />
    <scriptTask id="_2" name="Hello" >
      <script>System.out.println("Hello World");</script>
    </scriptTask>
    <sequenceFlow sourceRef="_2" targetRef="_3" />
    <endEvent id="_3" name="EndProcess" />
  </process>
</definitions>
Java Interface

ProcessRuntime interface
• startProcess(processId)
• startProcess(processId, parameters)
• signalEvent(type, event)
• signalEvent(type, event, instanceId)
• abortProcessInstance(instanceId)
• getProcessInstance(instanceId)
• …
Java Example

// (1) Create knowledge base and add process definition
KnowledgeBuilder kbuilder = ...  
kbuilder.add( ..., "sample.bpmn", ResourceType.BPMN2);
KnowledgeBase kbase = kbuilder.newKnowledgeBase();

// (2) Create new stateful knowledge session
StatefulKnowledgeSession ksession = kbase.newStatefulKnowledgeSession();

// (3) Start a new process instance
ksession.startProcess("com.sample.bpmn.hello");
From Workflow to BPM
From Workflow to BPM

Core Engine

XML

BPMN 2.0
From Workflow to BPM

- JPA
- JTA
- Persistence
- Transactions
- XML
- BPMN 2.0
- Core Engine
Persistence and Transactions

- Persistence (JPA, pluggable)
  - Runtime persistence
  - History logging
  - Services
- Transactions (JTA, pluggable)
  - Command-scoped
  - User-defined
From Workflow to BPM

Core Engine

- Persistence
- Transactions
- Events
- History Log
- Management Console
- BAM

XML
BPMN 2.0
Console

• Web-based management
• Business user
• REST api
• Features
  – Process instance management
  – User task lists / forms
  – Reporting
Employee evaluation

As part of your performance evaluation, you have to do a self-assessment.

Please fill in the following evaluation form:

Rate the overall performance:

- Outstanding

Check any that apply:
- Displaying initiative
- Thriving on change
- Good communication skills

Complete
Business Activity Monitoring

# Process Instances / Hour

![Graph showing # Process Instances / Hour]

# Currently Active Process Instances

![Graph showing # Currently Active Process Instances]
From Workflow to BPM

Core Engine

- Persistence
- BPMN 2.0
- XML
- Transactions
- Events

Integration

Domain-specific Processes

ESB

Human Task Service
Domain-specific Processes

• Extend palette with domain-specific, declarative service nodes
  – define input / output parameters
  – runtime binding
Domain-specific Processes

• Why?
  – Domain-specific
  – Declarative
  – High-level
  – Context-defined

• Other examples
  – Human task
  – Java method
  – WS, Rest
  – Email, Twitter
  – FTP, RSS, Jabber
  – Finder, Exec, Archive
  – Google Calendar
  – YOUR SERVICES!
Service Repository

Twitter

A service for twitter messages, used in the BPMN diagram.

Parameters

- **Message**: String, The message to be sent.

Results

- **Message**: #name is trying out the #jbpm twitter demo!
Human task service

- User task
- Human task service (WS-HT)
  - Task lists
  - Task life cycle
- Task clients
  - Task forms
SwitchYard

Lightweight service delivery framework providing full life cycle support for developing, deploying, and managing service-oriented applications

• SwitchYard BPM component
Extra features

• Process instance migration
• jBPM installer
• JUnit testing
• Spring
• OSGi
• Migration from jBPM3(4)
Examples

• Evaluation

• Examples module
  – Looping
  – Multi-instances
  – Human tasks (including user / group assignment, delegation, forms, etc.)
  – Process + rules integration
Social, Cloud and Mobile
Ready for the future?

Traditional BPM systems have problems with change, complexity, flexibility, data-intensive applications, etc.

- Adaptive Case Management (ACM)
- Unstructured, non-linear or flexible processes
- Event-driven BPM (edBPM)
Example: Clinical DSS
Combining Processes, Rules and Events

• Integration
  – From loose coupling
  – To advanced integration

• Unification
  – Processes and (event) rules are different types of business knowledge assets
  – Tooling (IDE, repository, management)
JBoss AS 7

- Blazingly fast
- Lightweight
- Module core

- jBPM5 on AS7: Lightning!
OpenShift

- Based on Open Source
- Innovation
- Choice

- Java, PHP, Ruby, Python, Perl & more
- Express, Flex, Power
- Amazon EC2
jBPM Everywhere

- Run jBPM5 natively on Android
Roadmap

• jBPM 5.1: June 2011
• jBPM 5.2: November 2011
  – No-code tooling
  – Domain-specific service repository
  – Form builder
  – New BPMN2 Eclipse editor
  – Simulation / testing / replay
Form Builder

- Generate form for process / task
- Graphically design process (D&D)
- Triggers, validation
- Integrated into Guvnor
Eclipse BPMN2 editor

http://eclipse.org/projects/project.php?id=soa.bpmn2-modeler
Enterprise versions provide long-term support, regular releases including fixes, new features, and new platforms certifications.

New community features may be backported to Enterprise versions.

While community projects continue to rapidly evolve, enterprise middleware products focus on long-term stability.
jBPM5: What, where?

- jBPM home page
- Source http://github.com/droolsjbpm/jbpm
- Hudson http://hudson.jboss.org/hudson/job/jBPM
- Blog http://kverlaen.blogspot.com/
- #jbpm on irc.codehaus.org
- jbpm-dev@jboss.org
- jBPM user forum
Questions?

• Ask me now!
• Find me later
• Hackfest tonight
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