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SAN FRANCISCO | APRIL 14-17, 2014

# Deep Dive into jBPM6

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# Overview

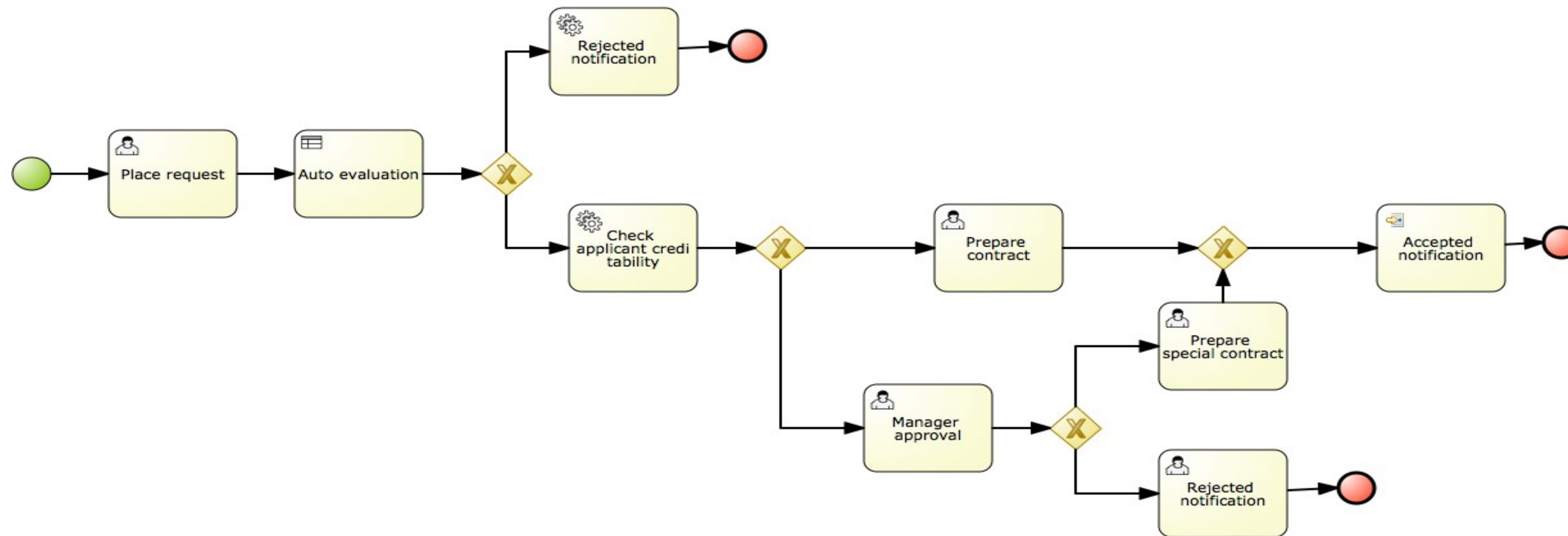
- jBPM 6 highlights
- 5 minute demo
- Deep dive into jBPM Execution Server
  - Session mgmt strategies
  - Remote API
  - Repository and deployment
  - Service Tasks

# jBPM



- Key characteristics
  - Light-weight process engine (native BPMN 2.0 execution)
  - Standards-based (BPMN 2.0, BPSim, JPA, JTA, etc.)

ik loan process v.1 (defaultPackage.bani-loan)

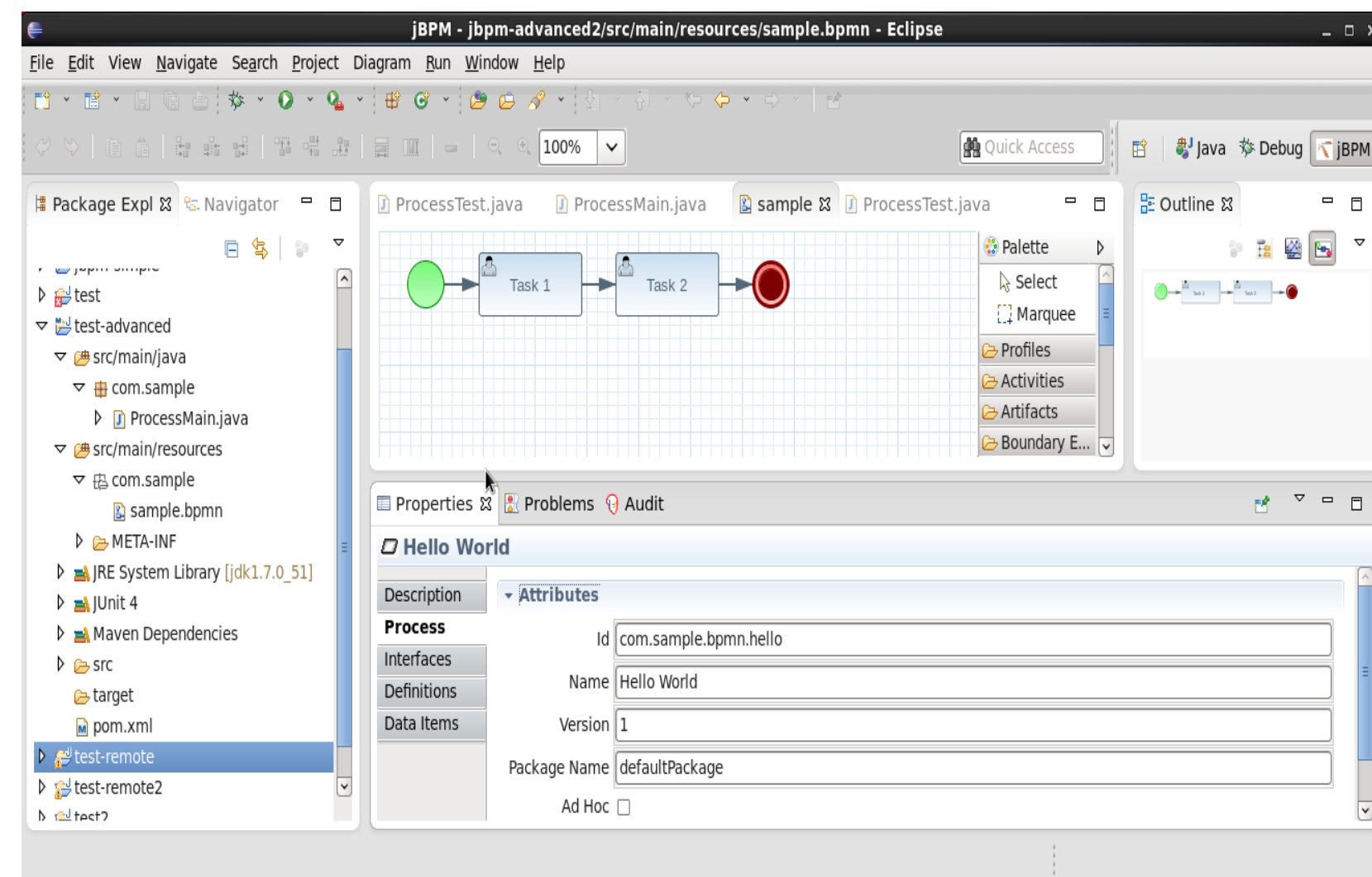




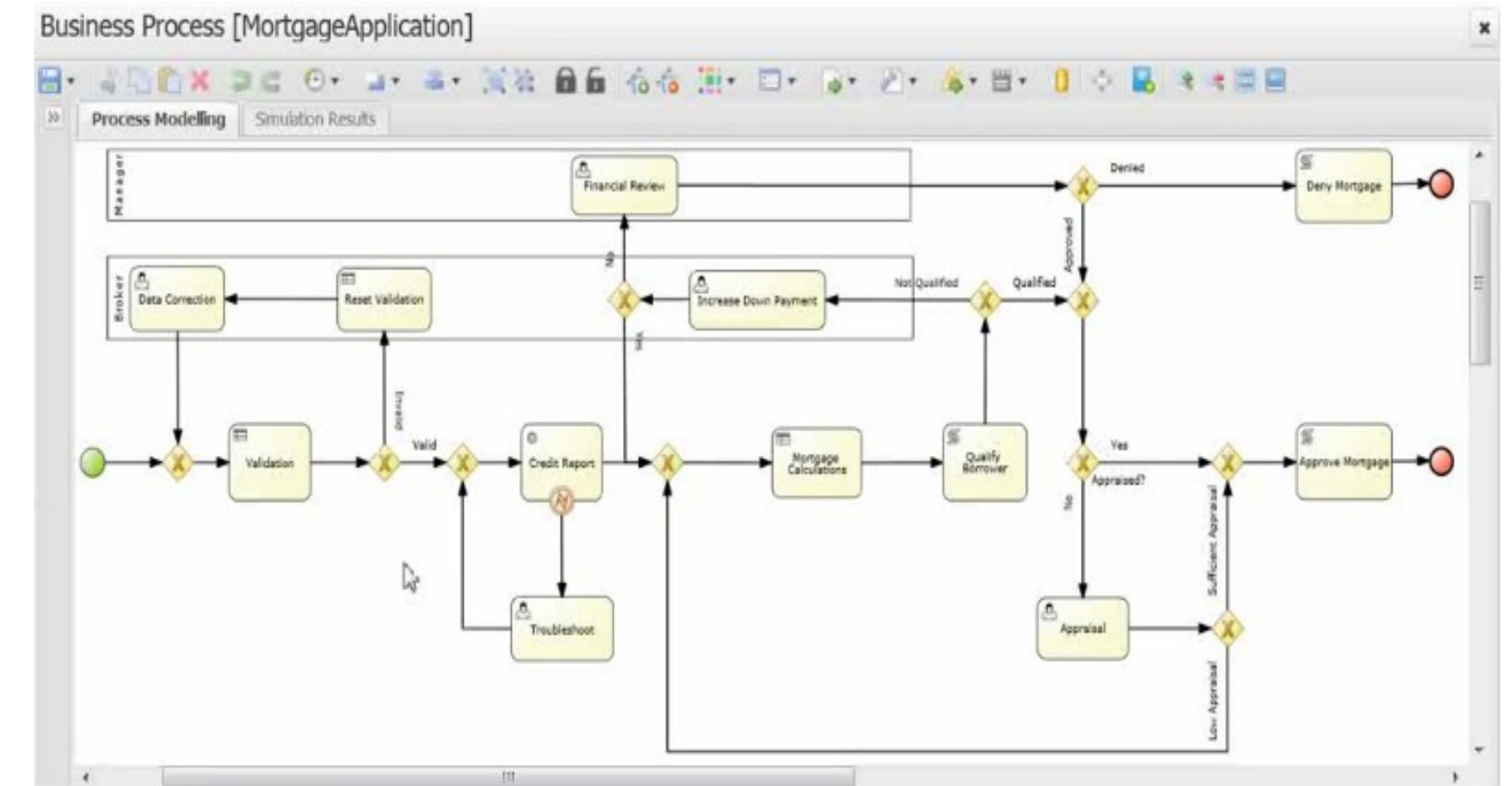
# jBPM

- Key characteristics
- From developers

to business users



- Designer
- Data Modeler
- Form Modeler
- BAM
- Workbench



# jBPM

- Key characteristics

- From developers

to business users



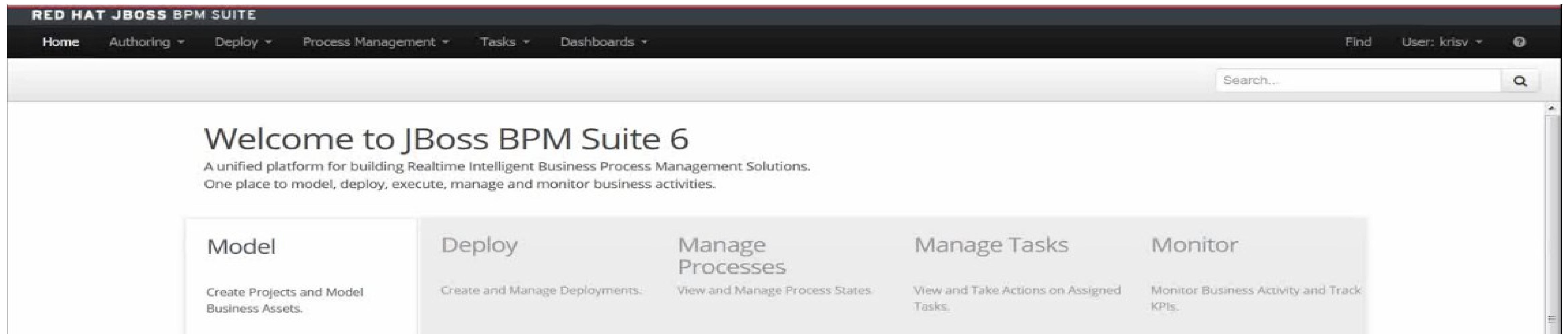
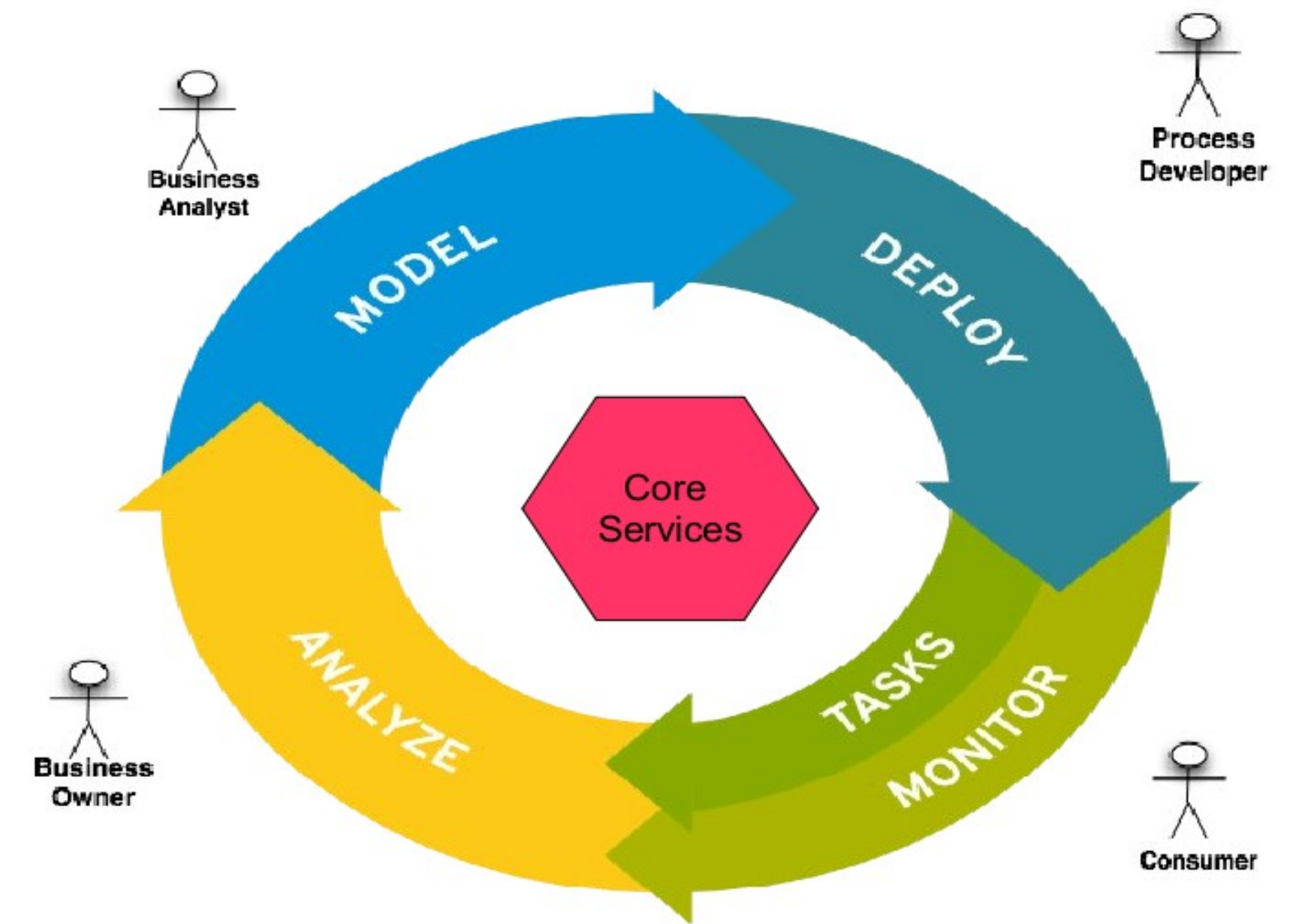
- From embedded

to as a service



# jBPM

- Key characteristics
- Entire life cycle





# jBPM

## bpmPaaS

- Key characteristics
- Cloud-ready

<https://www.openshift.com/developers/jboss-bpms>

The screenshot shows the OpenShift website's developer page for JBoss BPM Suite. The navigation bar includes 'PRODUCTS', 'PRICING', 'DEV CENTER' (which is underlined), 'SUPPORT', and 'PARTNERS'. The 'DEV CENTER' sidebar lists various resources like 'Overview', 'Developer Workflow', 'Blog', 'Get Started', 'Documentation', 'User Guide', 'Downloadable Guides', 'Client Tools', 'Deploying Applications', 'Environment Variables', 'Scale Applications', 'SSH Access', 'Extend OpenShift', 'Videos', 'QuickStarts', and 'Technologies'. The main content area features a red header for 'JBoss Business Process Management Suite' and a detailed overview of the suite's capabilities, including a 'DEPLOY NOW' button and a section for analytics.

**OPENSIFT** PRODUCTS PRICING DEV CENTER SUPPORT PARTNERS

**DEV CENTER**

- Overview
- Developer Workflow
- Blog
- Get Started
- Documentation
  - User Guide ↗
  - Downloadable Guides
  - ▶ Client Tools
  - ▶ Deploying Applications
  - Environment Variables
  - Scale Applications
  - ▶ SSH Access
  - ▶ Extend OpenShift
- Videos
- QuickStarts
- Technologies

**JBoss Business Process Management Suite**

JBoss BPM Suite provides business users and developers with powerful and intuitive tools to capture business processes, policies and rules and configure advanced business reporting, to obtain process-based applications that can be modified with agility in response to the business needs.

**Overview**

Business Process Management (BPM) and Business Rules Management (BRM) technologies provide an environment in which business and IT users can collaborate effectively to manage business logic and quickly modify procedures and policies as business conditions demand. By automating business logic, organizations can operate consistently, with repeatable and auditable processes and decisions. Additionally, monitoring business activity provides a pathway for business optimization, increasing effectiveness and reducing cost.

JBoss BPM Suite provides standards-based modeling, automation, simulation, and monitoring of business processes. It incorporates all the capabilities of JBoss BRMS, a powerful, easy-to-use business rules management system, with extensions for complex event processing that let businesses recognize and respond to events in real-time from social networks, blogs, and more.

Red Hat JBoss BPM Suite enables process management and orchestration with a number of advantages:

**Analytics:** Dashboards deliver real-time business activity monitoring (BAM) and reporting with key indicators to track process performance.

**JBoss BPM Suite**

Getting the JBoss BPM Suite capabilities deployed onto OpenShift is as easy as clicking "Deploy Now" below.

**DEPLOY NOW** >

JBoss xPaaS services on OpenShift are powerful middleware cartridges that we are making available as Alpha releases for developers to experiment with and

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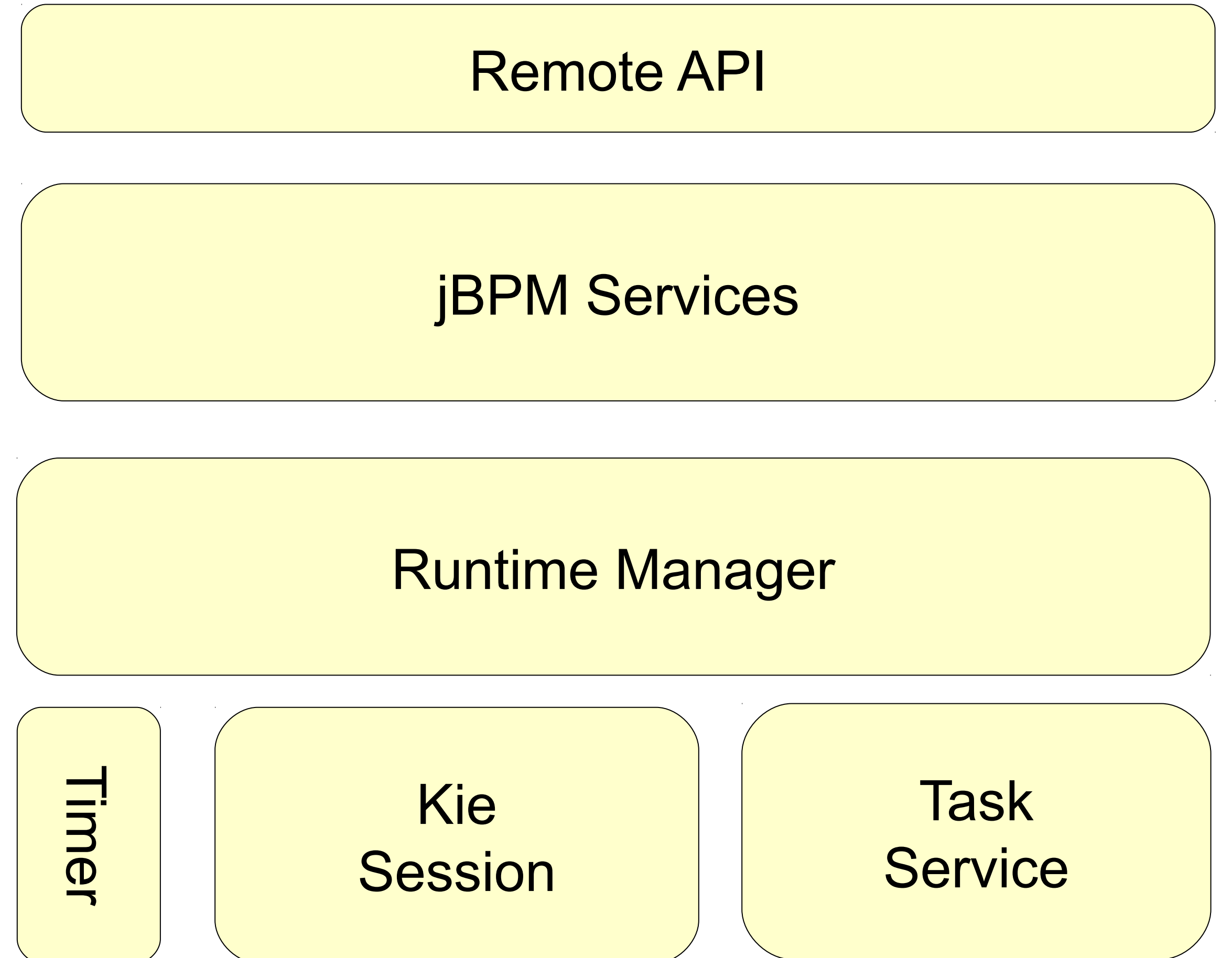
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# 5 MINUTE DEMO



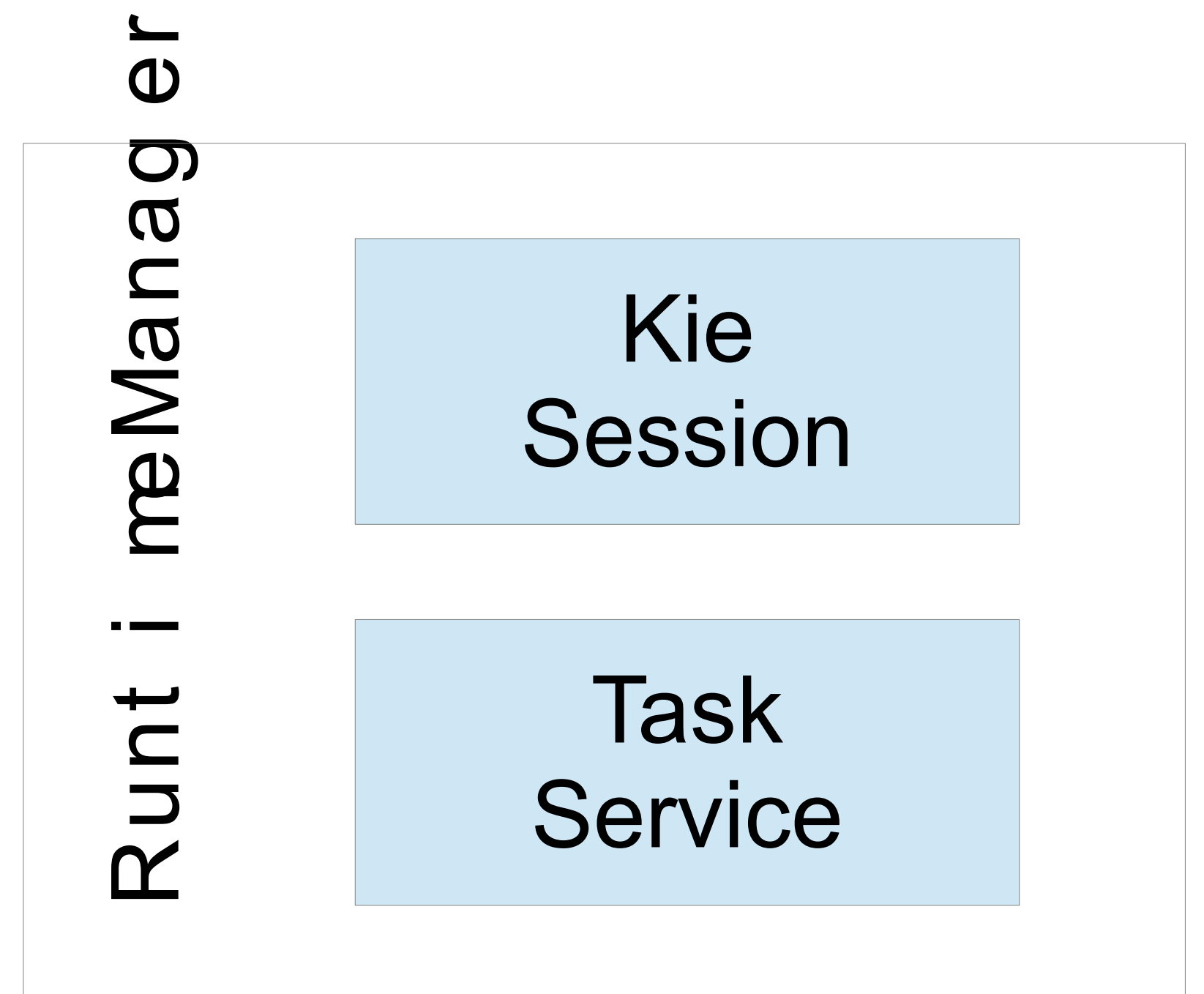
# jBPM Execution Server

- KieSession and TaskService
- RuntimeManager
  - Session mgmt strategies
- jBPM Services
  - Deployment, CDI
- Remote API
  - REST, JMS, Java Client



# RuntimeManager

- Access to KieSession and TaskService
  - Hides setup complexity
- Manages sessions
  - Singleton session
  - Session per request
  - Session per process instance
- Clustered environment



# RuntimeManager Example

```
RuntimeManager manager =  
    RuntimeManagerFactory.Factory.get()  
        .newPerProcessInstanceRuntimeManager(environment);
```

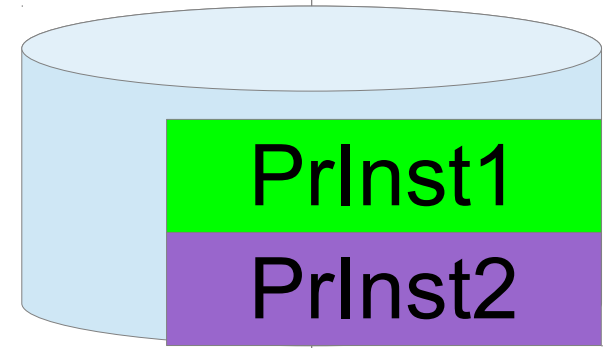
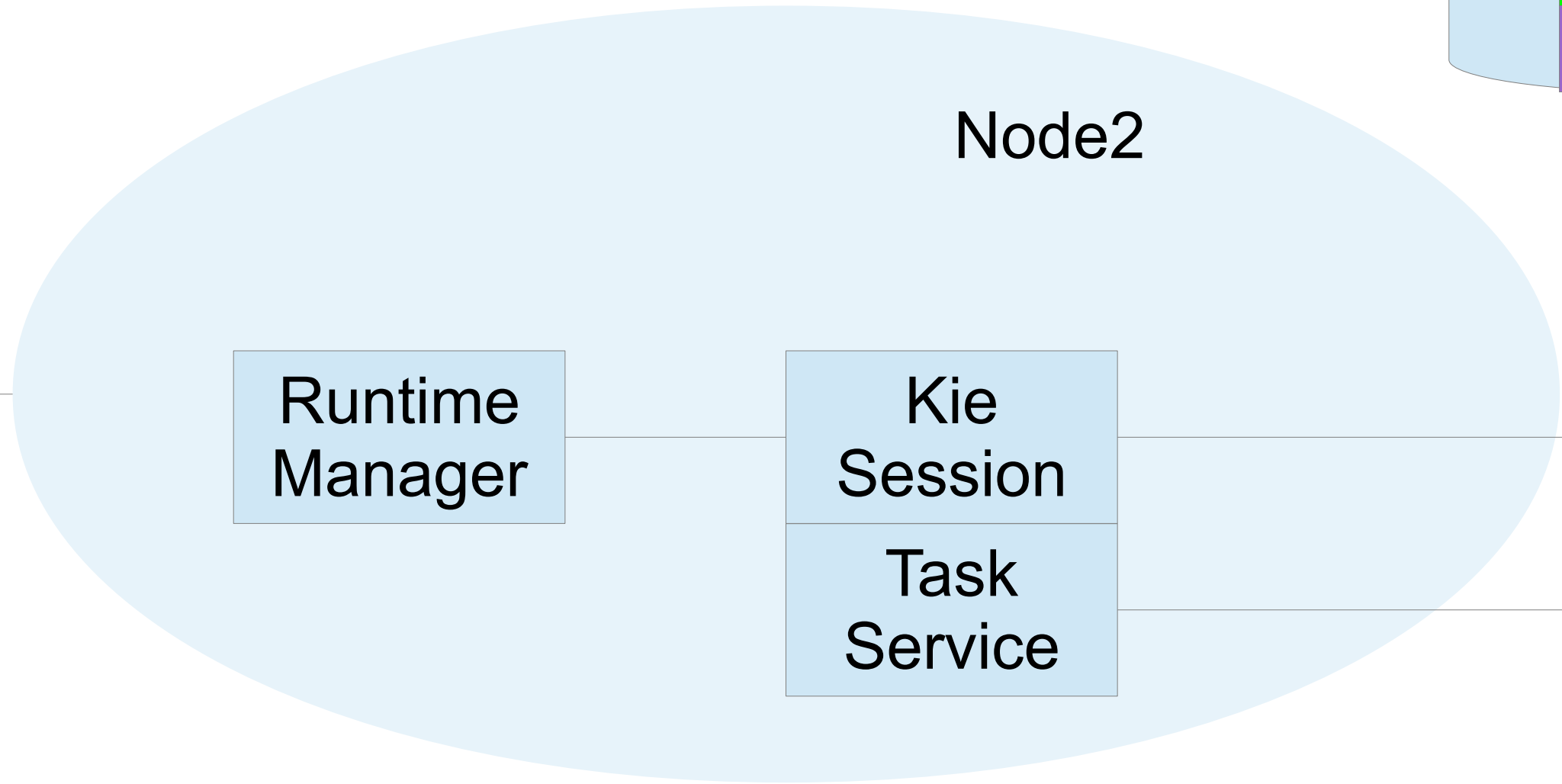
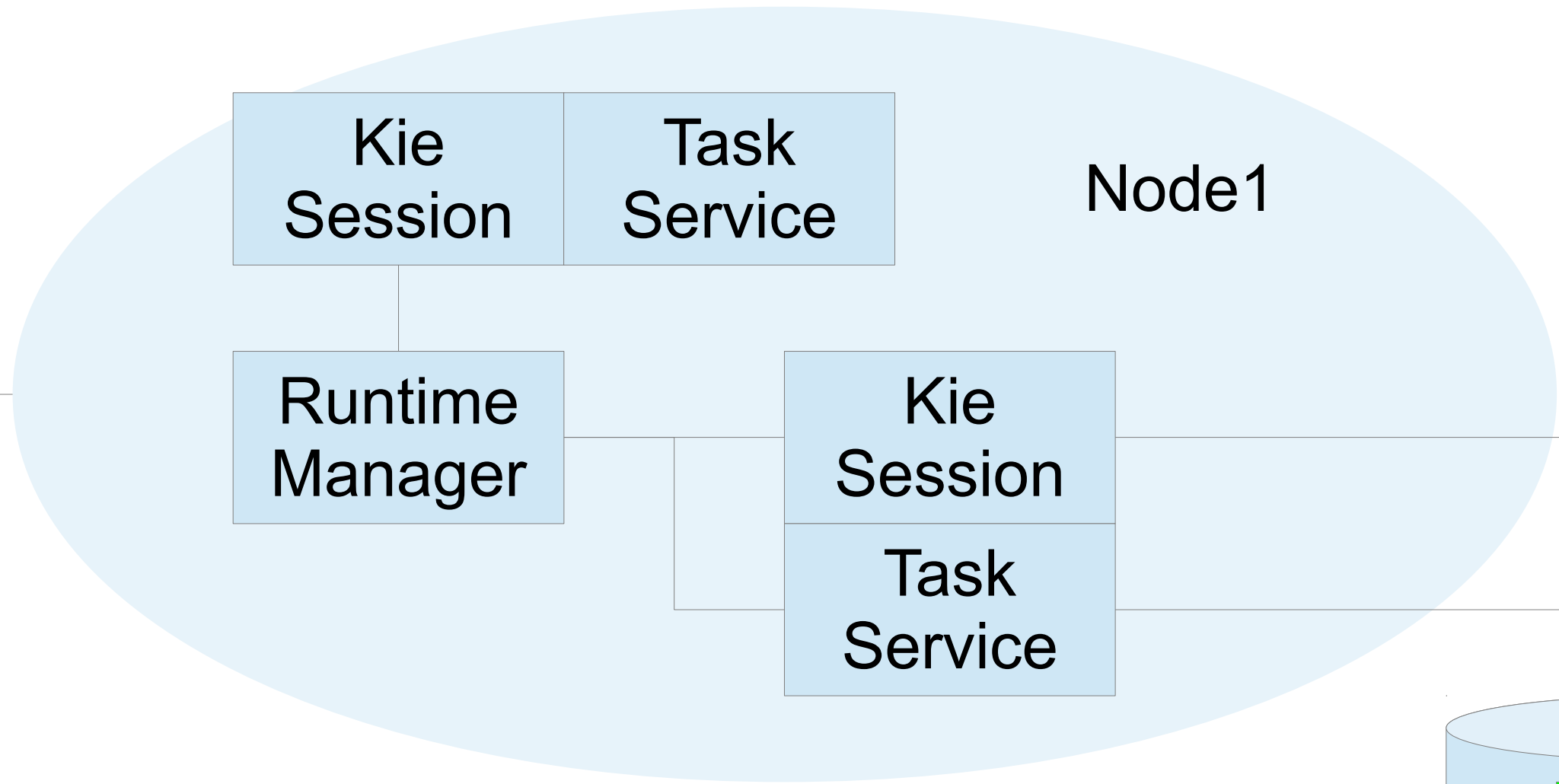
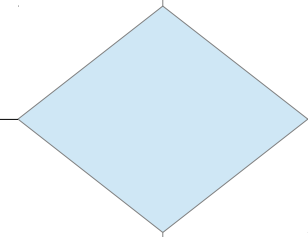
```
RuntimeEngine runtime =  
    manager.getRuntimeEngine(  
        ProcessInstanceContext.get(id));
```

```
KieSession ksession = runtime.getKieSession();  
// do something here, e.g.  
ksession.startProcess("org.jbpm.hello");
```

```
TaskService taskService = runtime.getTaskService();  
// do more stuff here
```



Request1  
Request2  
Request3



# jBPM Execution Server

- Parallelism
- Symmetric
  - Load balancing
  - High availability
- Timer Service using Quartz
- Inject services into your CDI environment
  - `@Inject @Singleton RuntimeManager singletonManager;`
  - `@Inject TaskService taskService;`

# Remote API (of Execution Server)

- REST
  - KieSession
  - TaskService
  - Deployments
  - History / audit logs
- JMS
- JAXB + JSON
- Remote Java client (using existing interfaces)



# REST API

```
http://server.address:port/{application-id}/rest/  
runtime  
  {id: [a-zA-Z0-9-]+} // deploymentId  
  process  
    {id: [a-zA-Z0-9-]+}  
    start * start process [POST]  
    instance  
      {id: \\d} * process instance details [GET]  
      signal * signal event [POST]  
      abort * abort process instance [POST]  
  signal  
    {id: [a-zA-Z0-9-]+} * signal event [POST]  
  workitem  
    {id: \\d}  
    complete * complete work item [POST]  
    abort * abort work item [POST]  
  execute * execute the given command [POST]  
task  
  {id: \\d+} * task details [GET]  
  activate * activate task  
  claim * claim task [POST]  
  // etc..  
  execute * execute the given command [POST]  
query * task query
```

# Command Serialization

- JAXB serialization of commands
  - e.g. Start task

```
<command-message>  
  <deploymentId>test</deploymentId>  
  <ver>1</ver>  
  <start-task>  
    <taskId>1</taskId>  
    <userId>krisv</userId>  
  </start-task>  
</command-message>
```

# REST Client Example

```
RuntimeEngine runtimeEngine =  
    new RemoteRestSessionFactory(  
        "org.jbpm:HR:1.0",  
        "http://localhost:8080/jbpm-console",  
        AuthenticationType.BASIC, "krisv", "krisv")  
        .newRuntimeEngine();  
  
KieSession ksession = runtime.getKieSession();  
// do something here, e.g.  
ksession.startProcess("org.jbpm.hello");  
  
TaskService taskService = runtime.getTaskService();  
// do more stuff here
```

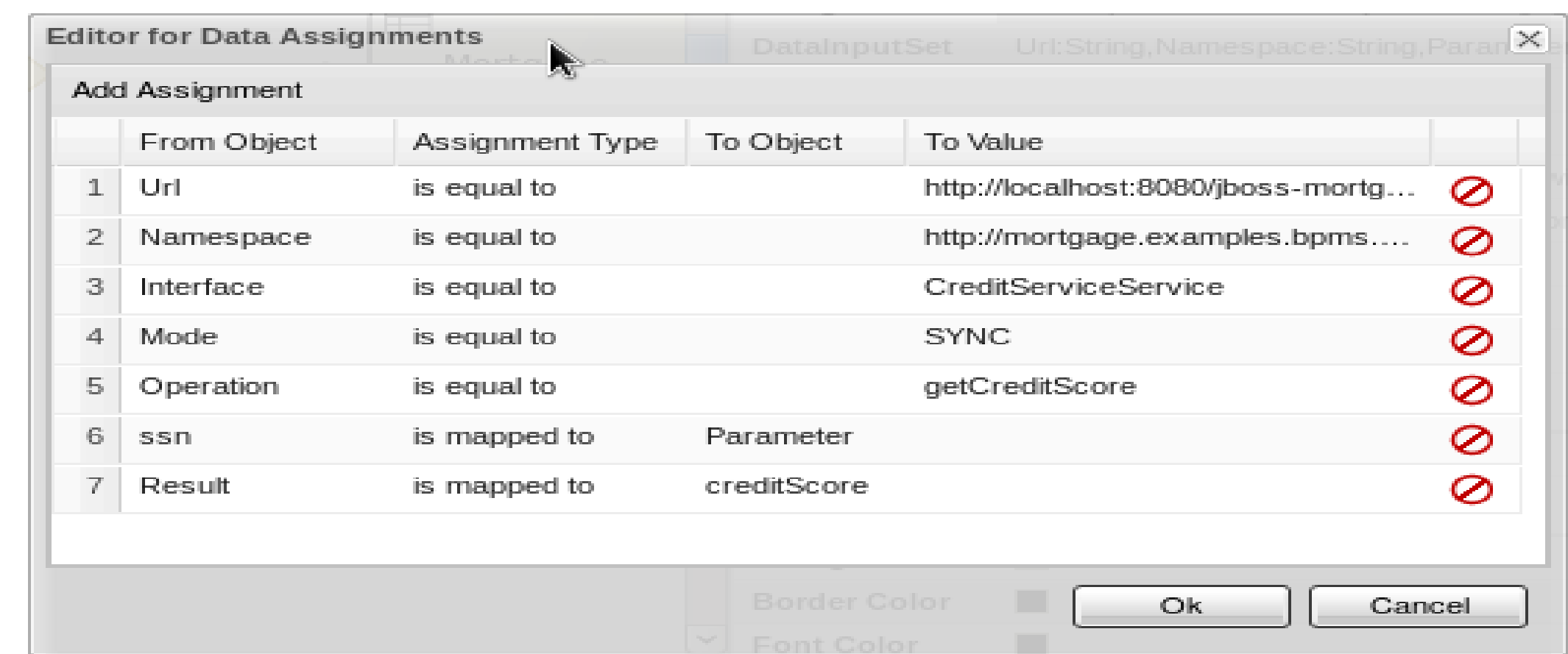
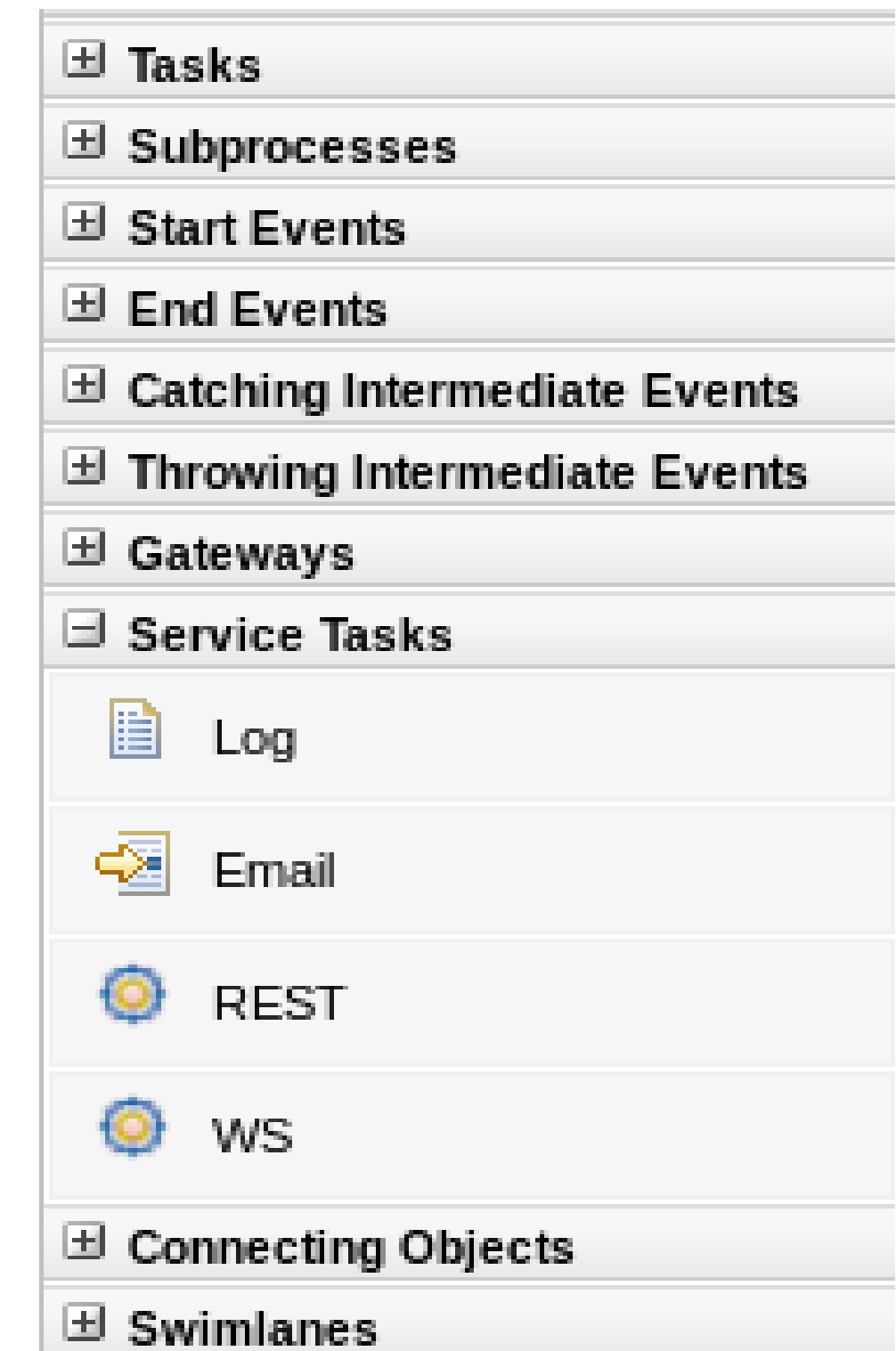


# Repository and deployment

- Organization – Repository – Project
- Source control
  - Git
- Deployment
  - kjar: processes, rules, data models, forms, configuration
  - Maven (GAV, dependencies, management)
- Clustered environment
  - Helix and ZooKeeper

# Service Tasks

- New out-of-the-box handlers for
  - WS
  - REST
- jBPM Executor
  - Asynchronous handler using jobs
    - Reusable
    - Fail-safe
    - Retries



# Getting started

- <http://www.jboss.org/jbpm>
- jBPM v6.0.1.Final
  - jbpm-installer
- Developer copy of JBoss BPM Suite v6.0.1.GA
- OpenShift cartridge
  
- Contact us !



# Have your say on User Experience

- Do you have any experience with designing, using or analyzing business rules and processes?
- Do you have any opinions, ideas, complaints, or questions about the BRMS and BPM Suite web tools?
- If the answer is “yes” to either of these, come talk to Joe Sniezek at the **Customer Central** booth (open all day)



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Please complete  
the session survey  
(mobile application)

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Questions?