The 6th
Israeli JBoss User Group
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JBPM – A case study
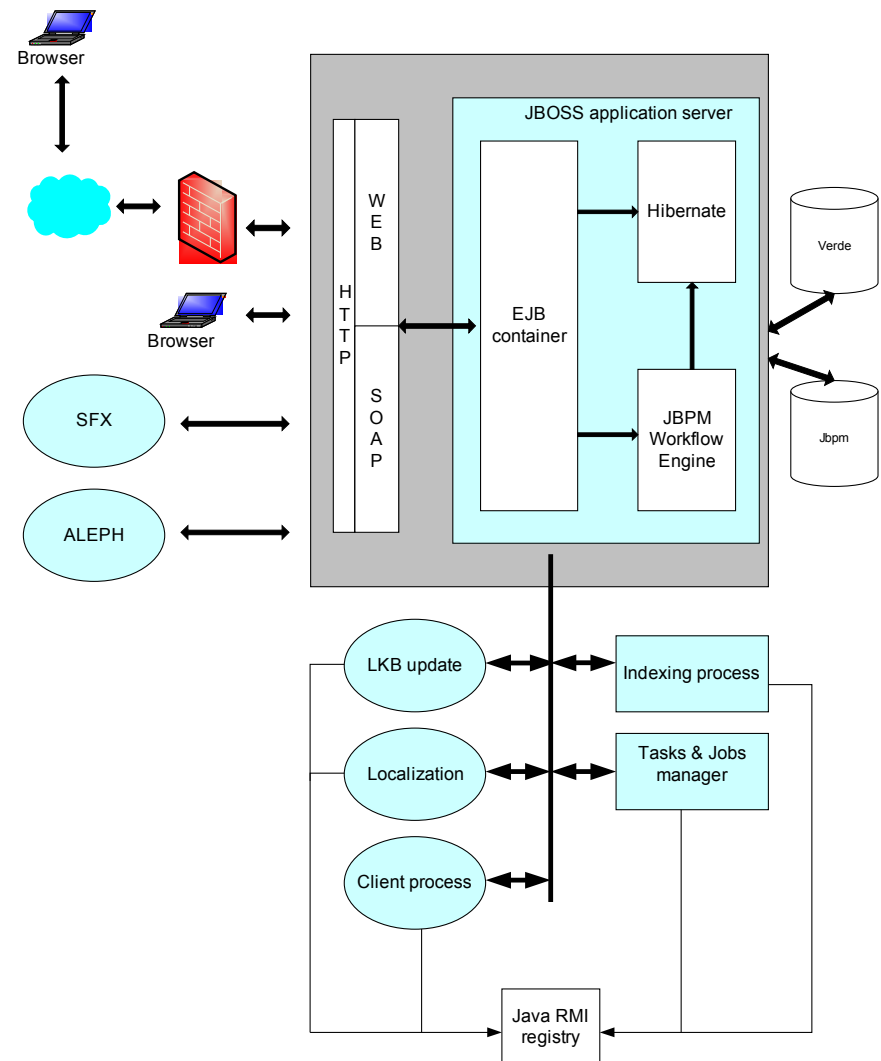
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Introduction

- Verde architecture
- Verde challenges

Verde Architecture

- JDK 1.4.2
- JBOSS AS 3.2.8
- Hibernate 3.0
- Axis 1.2
- jBPM 3.0.1
- Oracle 9 with CTX

Verde challenges

▶ Tasks Configuration

▶ Display task in UI

▶ Assign tasks to users

▶ Workflow progress (Transition from task to task)

▶ Deactivate tasks

▶ Current location in workflow

Tasks Configuration

▸ Why table based configuration?

» Can easily be accessed by users

» No need to redeploy

» Easy to make decisions before addressing a workflow

Display Task In UI

▶ Tasks are performed by people

▶ Tasks information is configurable:

» Task description

» Users roles

» Link to Verde admin screens

» Link to other systems

» Email addresses to receive task events

» Each variable has type that is used when generating the screen

Next: screenshots

This is how it looks

L-1: License Workflow > Is this the first e-product from this vendor?

Description

Actions

Determine if this is the first product that has been ordered from this vendor, by linking to the e-product and viewing other products in the interface list.

Link to: e-Product

○ First e-Product   ◉ Not the first e-Product

Transition

Comments

New comment:

Add new comment

Saved in task context

JBPM view

```
<task-node name="First product from this vendor ?">
    <task name="LWP_L-1_First_Product_Vendor">
        <!-- Assign user to this task -->
        <assignment class="com.exlibris.verde.bpm.jbpm.assign.VerdeAssignmentHandler" />
    <event type="task-create">
      <action class="com.exlibris.verde.bpm.jbpm.action.base.InitialTaskAction" />
    </event>
    <event type="task-end">
        <action class="com.exlibris.verde.bpm.jbpm.action.base.FinishTaskAction" />
        </event>
    </task>
    <transition name="LWP_firstProduct" to="Create Verde License"/>
    <transition name="LWP_notFirstProduct" to="Can eProduct be added to existing license ?"/>
</task-node>
```

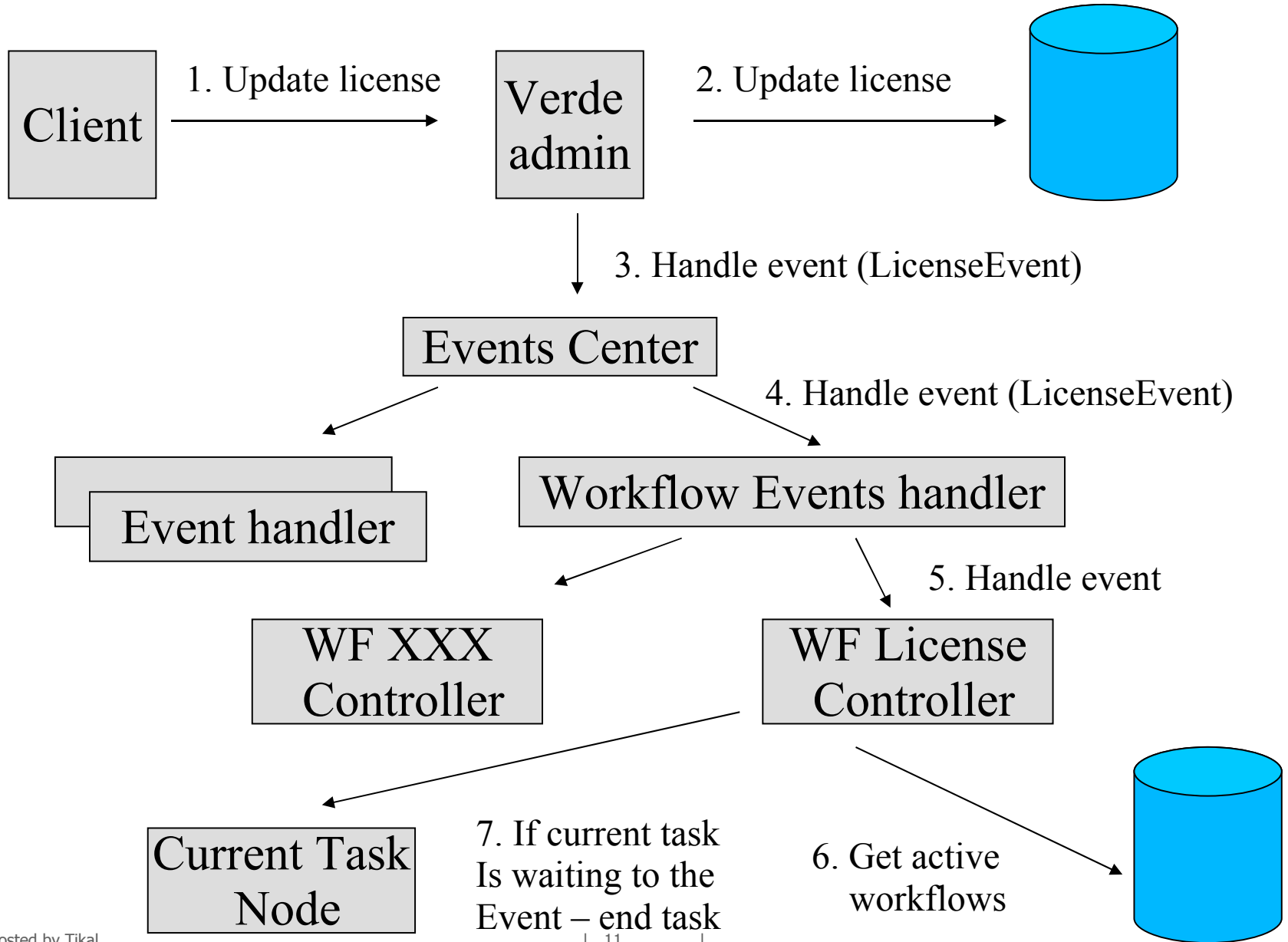|	VARCODE	VARVALUE	VARTYPE	VARSEQUENCE
ndor	role	SELECTOR	1	1
ndor	label	Is this the first e-product from this vendor?	1	2
ndor	description	Determine if this is the first product that has been ordered...	1	3
ndor	verdeLink	e-Product	2	4
ndor	distributionEnd	(null)	1	5
ndor	distributionStart	(null)	1	6
ndor	distributionExpire	(null)	1	7

Assign Tasks To Users

▸ We want to make sure that users will perform tasks according to their skills

 » Automatic assignment based on user roles

 » Manually assignment by administrators

▸ List of users is not fixed inside the workflow

▸ Users roles are configurable

 » Appropriate users are calculated each time the task starts

 » Only one user can perform a task

Transition between tasks (1)

▶ Transition is defined inside JBPM process definition

▶ Transitions are done when all tasks inside a task node were finished

▶ Two events in Verde can end a task node and cause a transition:

» Tasks that are waiting for user decision, usually yes/no like decision

» Tasks that are waiting that a certain Event to happen in Verde admin

Transition Between Tasks (2)

Client → 1. Update license → **Verde admin** → 2. Update license → (database)

Verde admin → 3. Handle event (LicenseEvent) → **Events Center**

Events Center → **Event handler**

Events Center → 4. Handle event (LicenseEvent) → **Workflow Events handler**

Workflow Events handler → **WF XXX Controller**

Workflow Events handler → 5. Handle event → **WF License Controller**

WF License Controller → 6. Get active workflows → (database)

WF License Controller → **Current Task Node**

7. If current task Is waiting to the Event – end task

Transition Between Tasks (3)

▶ How task waits to certain event?

　　» Using custom events inside Task entity

```xml
<event type="task-create">
  <action class="com.exlibris.verde.bpm.jbpm.action.base.InitialTaskAction" />
  <!-- Check if license was already created -->
  <action class="com.exlibris.verde.bpm.jbpm.action.LicenseCreatedAction" />
</event>
<!-- Event that is received from verde everytime that we create a license and this task is open -->
<event type="VERDE_ATTACH_LICENSE">
  <!-- The action will compare the initial licenses with the actual license
       If there is a new one and the status is NEW then finish task and put new license in the context -->
  <action class="com.exlibris.verde.bpm.jbpm.action.LicenseCreatedAction" />
</event>
<event type="task-end">
  <action class="com.exlibris.verde.bpm.jbpm.action.base.FinishTaskAction" />
</event>
```
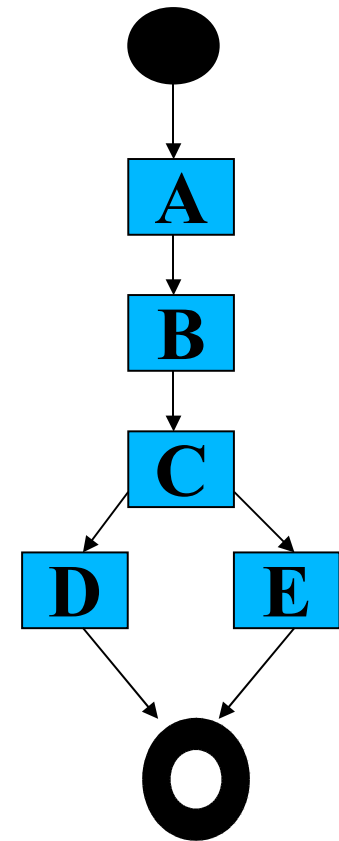
Deactivate Tasks

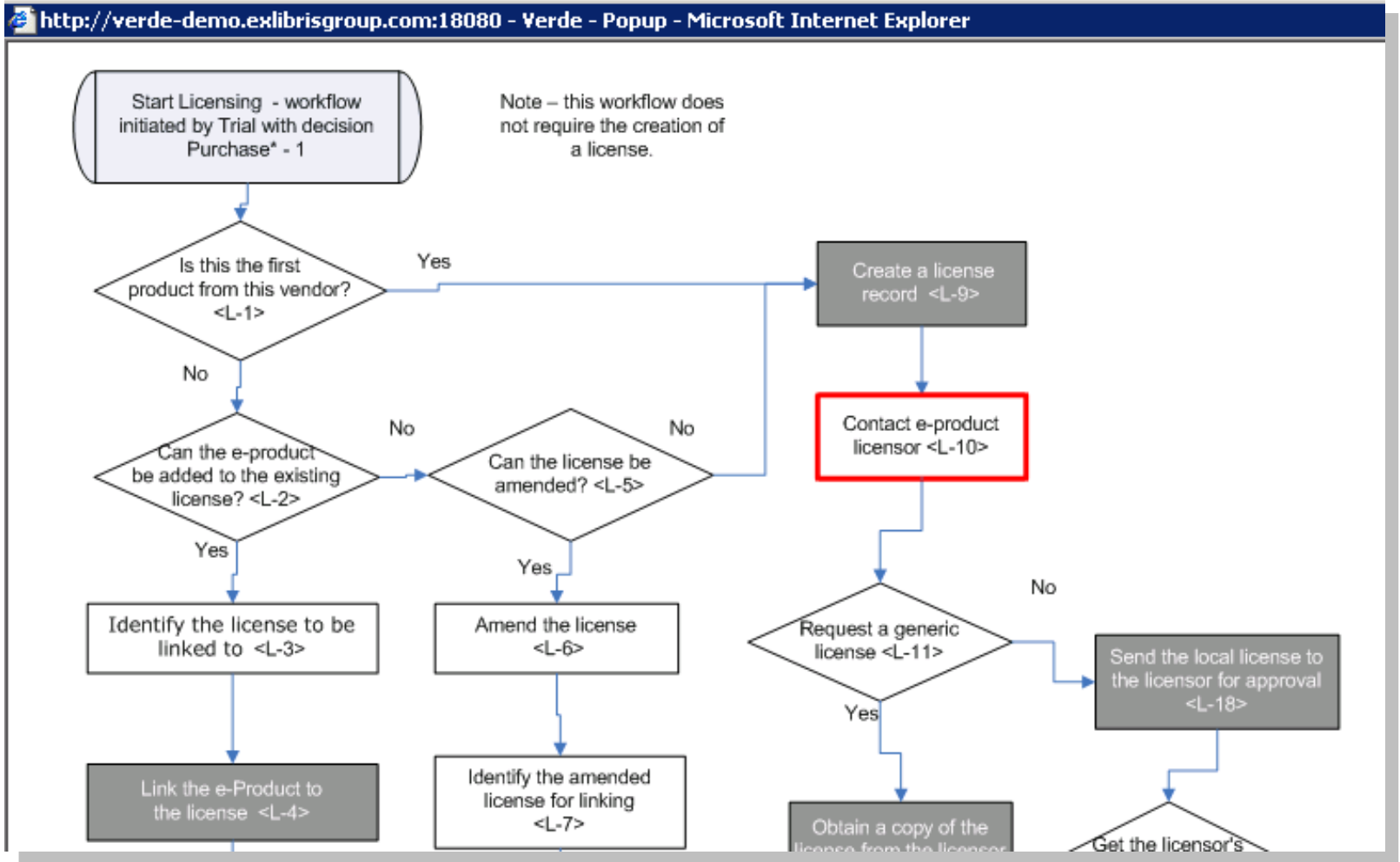▶ Give users the ability to skip tasks

There are risks!

▶ Only single transition tasks can be skipped

▶ Special handler is called when Task is starting to relate to its activity

Current Location

▸ Give a visual glance on where we are in the workflow

▸ Dynamic diagram was too hard to implement

▸ Compromise: Gif for each Task

» Based on workflow documentation

» Gif name = process_name.task_name (a unique path)

» Each Gif has a task node painted in Red

» Appropriate gif according to active Task

Next: screenshots

Questions

Personal Observations

▶ JBPM is good for software BPM but less for workflows

» No infrastructure to display users tasks in a friendly way

» Lack of users management functionality (assignment, retrieval)

▶ Yung product

▶ Good potential

» Easy to understand

» Good documentation

» Generic framework, many hooks available

» Today, part of JBOSS

Thank you