Migrating to a container-based Cloud BPMS platform at BBVA

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Global Head BPM Architecture BBVA

Marcos Regidor
Principal Solution Architect, Red Hat

Kris Verlaenen
Senior Principal Software Engineer

May 10th, 2018
Presenters Intro

Antonio Valle, BBVA
Global Head BPM Architecture

In his current role he manages and lead the team that develop and maintain the BPM Platforms that serve the different countries where BBVA operates.

Marcos Regidor, Red Hat
Principal Solution Architect

In his current role he helps BBVA to achieve their Digital Transformation journey leveraging Red Hat Open Source culture, PaaS, IaaS and Middleware Solutions in the different countries where BBVA operates.

Kris Verlaenen, Red Hat
Senior Principal Software Eng.

Red Hat Business Automation product architect and jBPM community lead, is interested in everything related to business process management.
Schedule

01  BBVA Intro
02  Why change? BBVA Transformation
03  What was needed? BBVA Requirements
04  How we get there? Collaboration Set up
05  The journey till now: Collaboration model and results
06  How RHPAM v7 Cloud Ready looks like now and roadmap
07  Lessons learnt and future goals
08  Q & A
BBVA Transformation

The pillars of transformation in BBVA

Transform BBVA Technology = (New Tech Stack in new platform + Transform developers + Rebuild banking apps)
BBVA Platform

Discipline to enable a global platform to design, execute, document, measure, monitor and control business processes and rules inside BBVA Cloud Platform
What was needed?

The transformation...

Global **Multilocal** complex and heterogeneous products and platforms: lack of seamless experience

Manual processes loosely controlled with **ad-hoc measures**, reactive and slow with **poor agility** to launch new products or improvements rapidly

Know-how externalization, siloed local teams, no ‘Global Community’ approach

High **maintenance and operating cost**, non scalable, manual operation
What was needed? BBVA Requirements

Our objective is to build a platform to enable truly digital processes automation...

Global Cloud Platform

1. As global as possible, auto-provisioning, auto-scalable, with a high degree of reuse and same developer experience

Automated

3. Fully automated processes and self-served standard and interoperable (end-to-end operational alerts/metrics, logs and traces)

Lifecycle and API

5. Processes life cycle depending on the related app (devops embedded). Improve reuse with a Global API Catalog

Real time

2. Enable highly distributed monitoring for processes and tasks (event based) reducing time, costs and errors

Open Source

4. Leveraging open-source technologies based on subscription model to avoid vendor lock-ins. Low cost computing

Talent

6. Hyperskilled in-house Talent, Global communities, agile teams collaborations. Ninja Academy, Tech University
Advanced Process Automation Capabilities

Platform Overview
BPM Platform - Product RoadMap

New Organization

Build the vision

End to end processes transformation

Build and deploy the platform

Strategic partnership with REDHAT

Use Cases & Training

Use Cases

Go Live!

Production ready

Multidisciplinary Team

- BPE and BPA
- ARQ Tec.
- (Devops)
- Agile teams

- Detailed As-Is country by country
- BPMaaS in cloud: Detailed design
- Early Adopter Plan
- Delivery new capabilities
- Launch initiatives
- Training (Tech University, Ninja)
- Global enablement streams
- Intercept flow and migration plan
How we get there? Collaboration Set up

Product Manager visited BBVA on January 2017 with this outcomes:

1. Initial Functional Gaps Assessment
   - First set of functional requirements identified and defined as “Gaps” were explained and understood by Product Management

2. Initial Architecture Gaps Assessment
   - The requirement to deploy RH BPM on top the Openshift were initially assessed

3. FDE Role
   - Proposed to add a new role in the Project: Forward Deployed Engineer to act as the voice of BBVA in the Engineering team and enhance collaboration

4. LA Version and Releases plan
   - PM Delivered a releases plan with a Limited Availability Version special release to be used to start to develop processes.
Initial releases plan

April 27 2017
jBPM v7 Pre-Alpha
- BPMS v7 with all new features targeted

May 17 2017
jBPM v7 (CAP) Build 01
- ADMIN CONSOLE: Process instance list (Add new fields, new view and new fields in task lists), 360 view and new fields in jobs, The "Library" perspective is now completely replacing the old "Authoring" perspective, Mostly bug fixing and improvements (including the fix for the translation)
- ENGINE: The smart router is included in the Engine

June 07 2017
jBPM v7 (CAP) Build 02
- REST API: Advanced Queries Decoupled
- DESIGNER: Async default
- EVENTS: Technical Error Events features

July 3 2017
jBPM v7 Alpha 01
- ADMIN CONSOLE: Advanced Search, Green/red status, Drill down and advanced search in jobs

Sep 8 2017
jBPM v7 Alpha 03
- Containerized runtime image for Openshift Platform

October 31 2017
jBPM v7 LA
- V7.0 Limited Availability Release
Process automation platform - RoadMap

RHPAM v7

2017

RHBPM Pre-Alfa
RHBPM Cap 01
RHBPM Cap 02
RHBPM Alpha 01

APR '17
MAY '17
JUN '17
JUL '17
AUG '17
SEP '17
OCT '17
NOV '17
DEC '17
JAN '18
FEB '18
MAR '18
APR '18

Engineering Workshop

2018

RHBPM Beta 01
RHBPM Beta 02
RHBPM LA

RHBPM GA Alpha01
RHBPM GA Alpha 04
RHBPM GA Beta 01
RHBPM GA

MAY '18
JUN '18

BBVA BPMaaS: Release 1 July '18

- Delivering the Platform
- Support to Pilots
The Journey till now: Workshops Performed

June 2017 - Brussels, Belgium

September 2017 - Madrid, Spain

November 2017 - Madrid, Spain

November 2017 - Mexico City, Mexico

March 2018 - Madrid, Spain
Working together to build RHPAM v7

How we have done so far?

Pull Request Sent
+79
Pull request sent by BBVA

Pull Request Accepted
+71
Accepted and incorporated into the product

Enhancement highlights

- Better support of BPMN2.
- Management console improvements.
- Error management. Detailed information about errors.
- Additional info to the events API. Now a complete information about events is available at Process & Task listeners.
- New mappers and query builders for custom queries.
- Application templates for OpenShift deployments.

“FDE” Red Hat role working on-site at BBVA with process automation team

New “ADE” role in BBVA working with FDE and Red Hat engineering team

Focus on the resolution of critical gaps identified in line with Red Hat engineering team

Prioritization of new features and bugs with Red Hat engineering team

Workshops with Red Hat engineering team & product management ensuring product alignment

BBVA is involved with UX team to ensure product vision
Working together to build RHPAM v7

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What's next?

- Better coverage of BPMN2 standard.
- Improvement in collaborative work at design time.
- Enhance the capabilities of BPM designer. Provide a new wizard for gateway expressions.
- Extensions to the REST API for a complete environment automation.
- Projects templates: a customized default project to meet basic corporate.
## Gaps “Bite”: Design and Development Tools

<table>
<thead>
<tr>
<th>GAP</th>
<th>Open</th>
<th>Assigned to</th>
<th>BBVA Requir</th>
<th>Analysis</th>
<th>Design</th>
<th>BBVA Valid</th>
<th>Impl</th>
<th>Status</th>
<th>Jira</th>
<th>Included version (Draft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>jBPM does not support Reusable Event Definitions</td>
<td>3 Oct</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-802</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>BPMN swimlanes (Autoclaim)</td>
<td>16 Oct</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-808</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>BPMN swimlanes import</td>
<td>11 Oct</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>It will be resolved in the new designer. Meanwhile, using RHAMT/Saxon with old Designer</td>
<td>BAPL-803</td>
<td>Pending</td>
</tr>
<tr>
<td>Improvements in the graphical constraint editor</td>
<td>08/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-912</td>
<td>7.1 GA</td>
</tr>
<tr>
<td>M I: Mapping automatically from MI data to I/O assignments (Human tasks)</td>
<td>08/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-895</td>
<td>7.0 GA</td>
</tr>
<tr>
<td>Adding support for multi instance: parallel or sequentially</td>
<td>08/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-910</td>
<td>7.1 GA</td>
</tr>
<tr>
<td>Enrich compilation error messages</td>
<td>15/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>--</td>
<td>Pending</td>
</tr>
<tr>
<td>Collaborative work</td>
<td>15/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>--</td>
<td>Pending</td>
</tr>
<tr>
<td>It is not possible to delete a project.</td>
<td>08/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>AF-984</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Pom.xml when creating a project with quick setup is different than pom.xml with advanced configuration</td>
<td>15/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-914</td>
<td>7.1 GA</td>
</tr>
<tr>
<td>Rules: Rules service task does not detect a ruleflow-group defined in xslx rule file.</td>
<td>15/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-915</td>
<td>7.1 GA</td>
</tr>
</tbody>
</table>
## Gaps “Bite”: Real time monitoring

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<thead>
<tr>
<th>GAP</th>
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<th>Jira</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Not Available fields in TaskLifeCycleEventListener</td>
<td>11/11</td>
<td>Red Hat</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done.</td>
<td>BAPL-819</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Required events that don’t exist in the User Task event listener</td>
<td>10/11</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-813</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Status completed in nodes when the process is aborted</td>
<td>26/1</td>
<td>Red Hat</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-877</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Information not available in NodeInstance event listener</td>
<td>26/1</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-876</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Information is not available in ProcessEventListener</td>
<td>10/11</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done. Waiting for BPMS release.</td>
<td>BAPL-814</td>
<td>Beta 01</td>
</tr>
</tbody>
</table>
Gaps “Bite”: API processes and tasks

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</tr>
</thead>
<tbody>
<tr>
<td>Advanced Queries</td>
<td>Add filter Potential Owner for Adv. Queries (Group Search)</td>
<td>21 Aug</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-781</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Operations</td>
<td>Business Data (Advanced Queries)</td>
<td>4 Sept</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-835</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Operations</td>
<td>Forward task to a list of potential owners</td>
<td>12 Sep</td>
<td>Red Hat</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>Done</td>
<td>BAPL-589</td>
<td>Alpha 03</td>
</tr>
<tr>
<td>Model</td>
<td>Not Exists customTaskId Field</td>
<td>25 Sep</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>100%</td>
<td>100%</td>
<td>Done. Waiting for BPMS release.</td>
<td>BAPL-801</td>
<td>Beta 01</td>
</tr>
<tr>
<td>Error Messages</td>
<td>Enrich error messages from API REST</td>
<td>08/03</td>
<td>Red Hat</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Waiting for Red Hat solution</td>
<td>BAPL-911</td>
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BPMaaS: Technologies

Stages
- Definition
- Design
- Automatization & CI/CD
- Execution
- Monitoring

Capabilities
- Processes Catalog
- Local Designer
- Repository
- Lifecycle

Technologies
- ARIS Platform
- VirtualBox
- Maven
- Eclipse
- SourceTree
- Git
- Bitbucket
- Jfrog Artifactory
- Red Hat OpenStack Platform
- Red Hat Enterprise Linux
- Red Hat JBOSS BRMS
- Spark
- Scala
- Kafka

Applications
INBOX

BPMaaS
- Groups/Users Management
- API
- Business Rules
- Runtime BPM
- Business Console
- Monitoring KPI
- Console

INBOX
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Business KPIS

ARIS Platform
Red Hat JBoss BPM Suite
Maven
Apache Kafka
Apache Spark
Scala
Neo4j
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**Definitions**
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- Local Designer
- Repository
- Lifecycle
- Applications
- INBOX

**Tools**
- eagleEye
- Jira
- JFrog Artifactory
- neo4j
- Bitbucket
- jboss BRMS
- Apache Stack
- SourceTree
- git
- JBoss 7
- Haproxy
BPMaaS: Technologies

- Stages
- Definition
- Design
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- Monitoring

Capabilities
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- Technologies
- ARIS Platform

Technologies
- Jenkins
- BBVA_Global_BPM
- BBVA_Global_Catalog

Business Console
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Business KPIS
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Technologies
- ARIS Platform
- VirtualBox
- MAVEN
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Global-Processes

The following APIs are Processes Extended Services.

- Apis
- BPM_USERS
- BUSINESS_PROCESS
How RH BPM looks like now and roadmap

Red Hat BPM Suite v 6.x
- Includes Process Execution as a service

Red Hat Process Automation Manager 7.0
- Case management
- Process and task administration
- Cloud
- Authoring and getting started experience
Controller

- Keeping track of server instances
- Server configuration
  - Capabilities (Rule, Process, Planning, etc.)
  - Deployed containers, for example
    - Project A – v1.0
    - Project A – v2.0
    - Project B – v1.1
- Update existing server configurations
  - Add containers
  - Remove containers

Smart Router

- Acts a server instance
- Delegate requests to the right server instance
  - Across different server configurations
  - Based on minimal information
- Aggregate data
  - From different server instances
Cloud images

The Open-Source Way

- Layered
- Configurable
  - Out-of-the-box configuration
  - Security + SSO
  - JMS, timers, etc.
- Customizable
Process automation platform - RoadMap

RHPAM v7
Lessons learnt and future goals

Our objective is to build a platform to enable truly digital process automation...

1. Communication for Use Cases common understanding: Workshops all together

2. There is always area for improvement: new gaps and how to deal with it

3. Designer and Process Modeling requirements first, runtime after that: Process Lifecycle

4. Engage end user/customer since the beginning

FUTURE

Improve/Industrialize processes migration from other tools and platforms

BPM Platform as source of lots of event types to be processed in the Analytic platform.
Advanced Process Automation Capabilities

BBVA Platform Overview

Corporate Designer

- Bitbucket
  - Project 1
  - Project 2
  - Project n

Repository Git

Jenkins

- Checkout Code
- Build KJar

Jenkins Server

Global devtools

Artifactory

Developing & CI

BBVA Platform

API Proxy

API Server

BC Controler (DeploymentManager)

Namespace A
  - KieServer 1
  - KieServer 2
  - KieServer.. N

Namespace B
  - KieServer 1
  - KieServer 2
  - KieServer.. N

Namespace.. N
  - KieServer 1
  - KieServer 2
  - KieServer.. N

WM 1

WM 2

WM 3

BMaaS

Logging

Tracing

Alerts

Atenea

Atenea console shows all the information related to log traces, service executions and delays and Alerts

SEMaaS provides tools to trace (Rho) and log (Omega) code executed in BPM runtime