



RED HAT
OPEN SOURCE DAY

Europe, Middle East & Africa



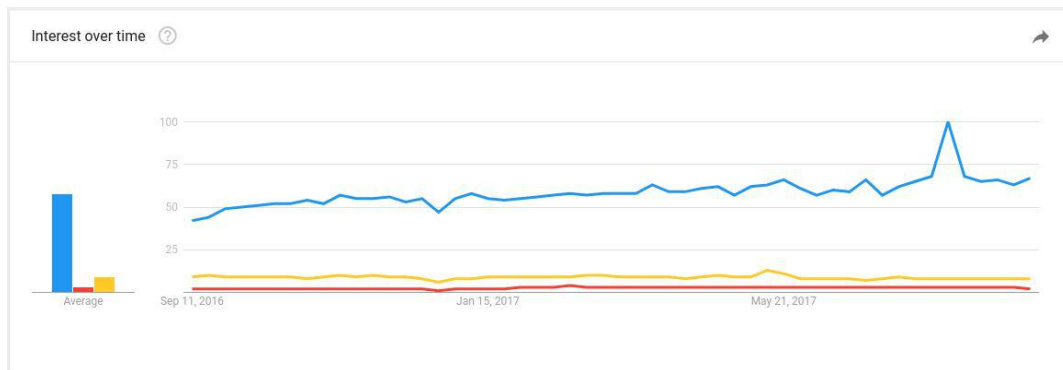
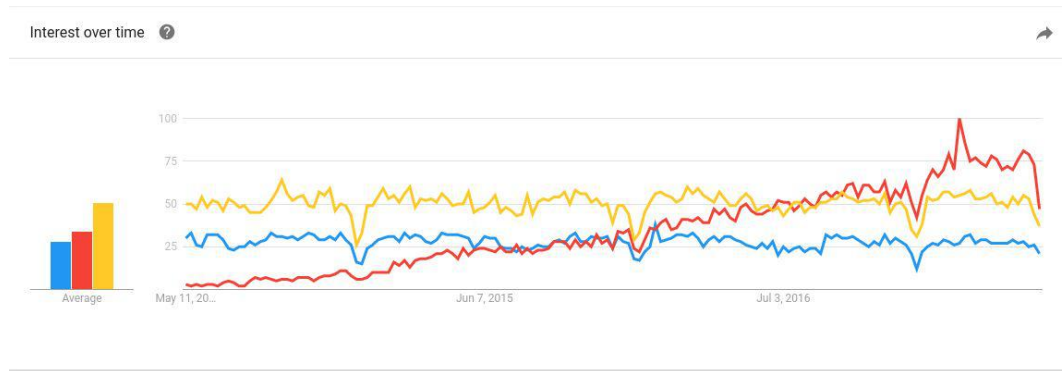
BUSINESS AUTOMATION

Process Driven Application, Decisions & Resource Planning

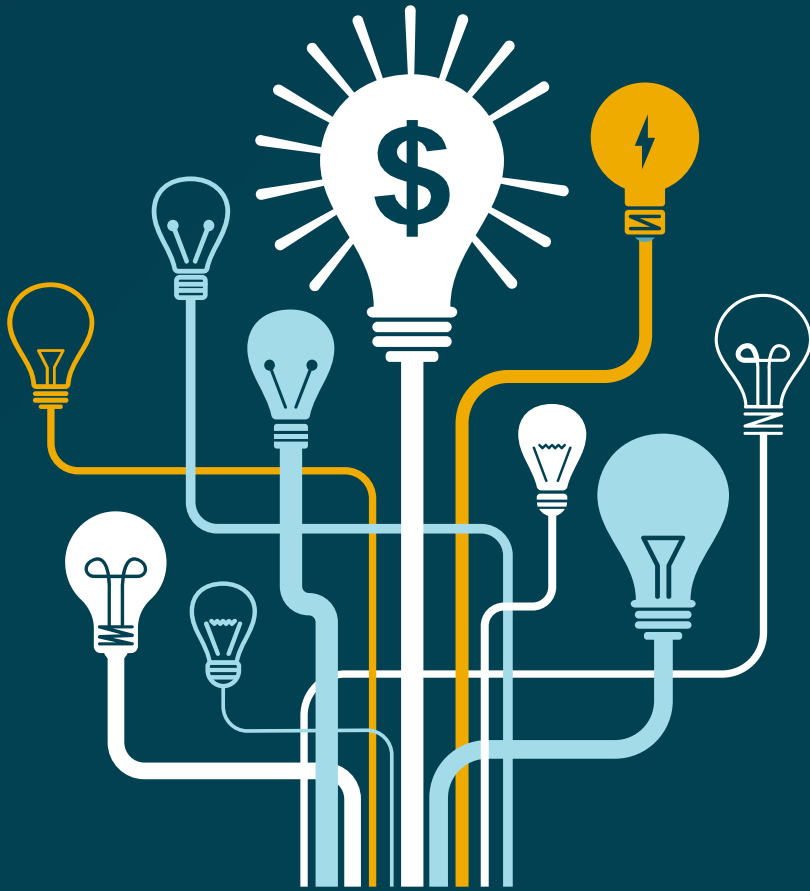
Donato Marrazzo
Specialist Solution Architect

Who cares? Let's ask to Google Trends!

- Business Process Management
- Business Rules
- Microservices



- Artificial Intelligence
- Cloud Computing
- Microservices



Treating
**business processes as
assets** that can be
adapted,
automated and
re-designed
is key to
**innovation and digital
transformation.**

Only about 37% of most typical business processes have been digitized.

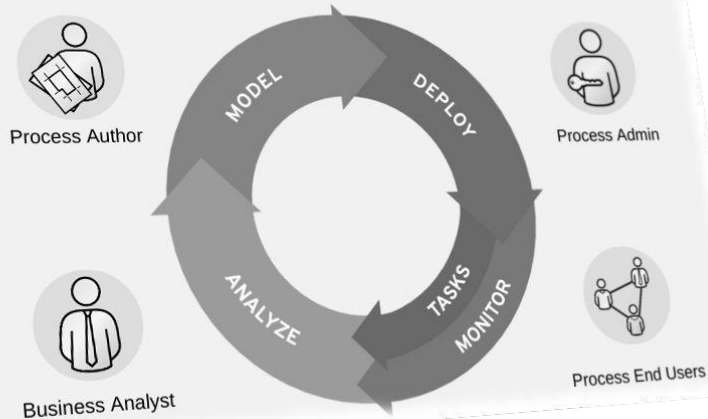
[Source: McKinsey](#)

BUSINESS PROCESSES



Process Driven Application

Traditional BPM Lifecycle



GOAL

Reimagine processes for digital participation

HOW

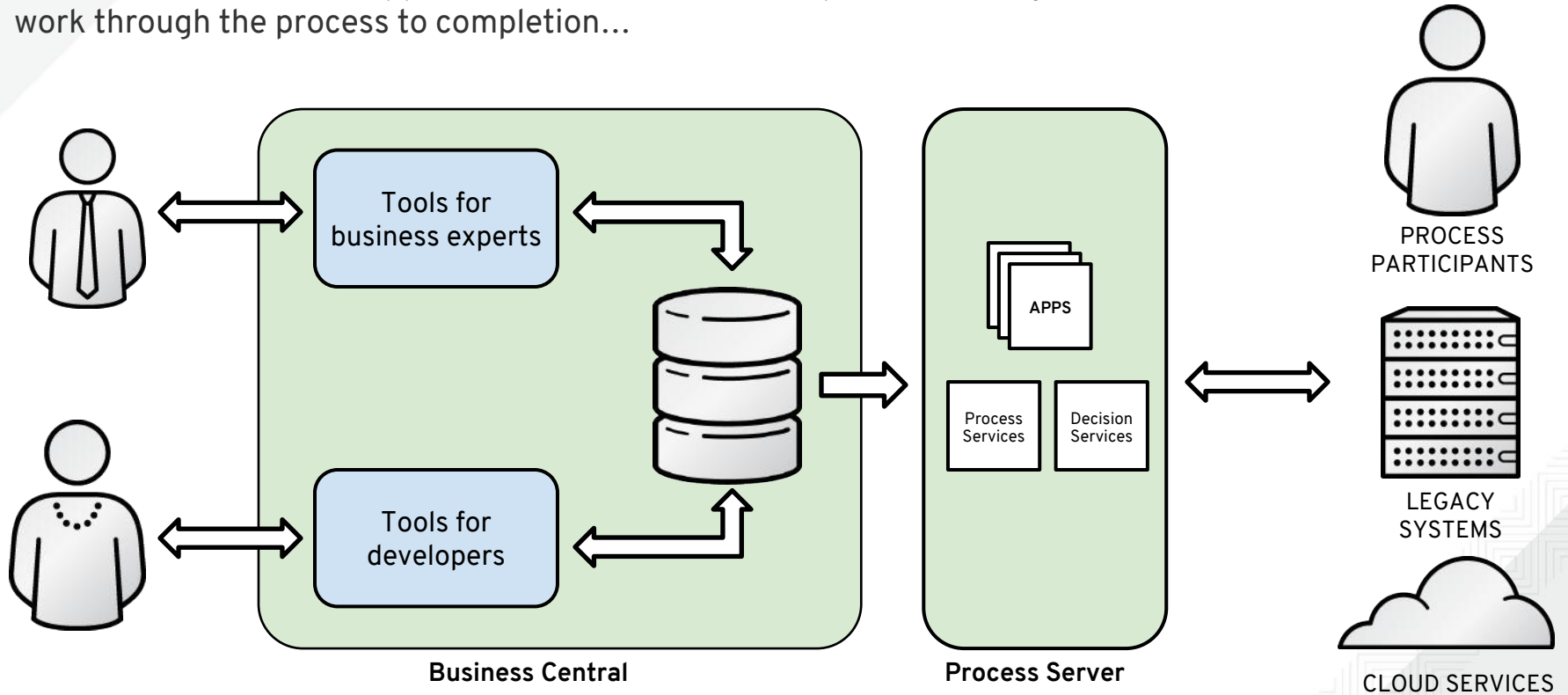
Shift from BPM to **low code** process apps

MANIFESTATION

Process applications

RED HAT JBOSS BPM SUITE

Enables construction of apps that automate a business process - using a model to drive work through the process to completion...



BPMS v7

Major themes

- More convenient and pleasurable for citizen developer
- Extended Case Management support
- Improving collaborative Team work
- First class support for OpenShift

CITIZEN DEVELOPER



CITIZEN DEVELOPER PROFILE

Cameron

Citizen Developer

I don't have time for anything that slows me down.



Cameron is a Senior Policy and Rules Analyst who works in Financial Services. He has a Finance Degree from Princeton. He's familiar with DMN and BPA concepts.

He always has ideas for business improvements, and he'll use any tools he can easily access and use (like Excel) to carry them out.

Cameron wants quick results from anything he spends his time on. When a tool is too slow or difficult, he'll move on to another tool without hesitation.

Goals

What is he trying to achieve?

- 1 Build Rule-based solutions quickly, without any training.
- 1 Avoid going through IT.
- 1 Drive competitive advantage for his company. The faster they move, the more money he makes.

Motivations

What drives his behavior?

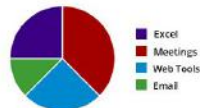
- 1 Likes a challenge, diving into something he knows little about.
- 1 To appear highly capable and in control.

Pain Points

What slows him down?

- 1 Spreadsheet-based tools that don't work like Excel hamper his ability to work quickly.
- 1 His peers don't deliver on time and budget. He needs to take control to get the job done.
- 1 Excel only takes him so far. He really wants a tool that will make modeling, app design and integration easy for him.

Average Workday



Colleagues

Almee: Process Associate...
Deepak: Integration Developer
Paula: Process Manager

Tech Comfort Level



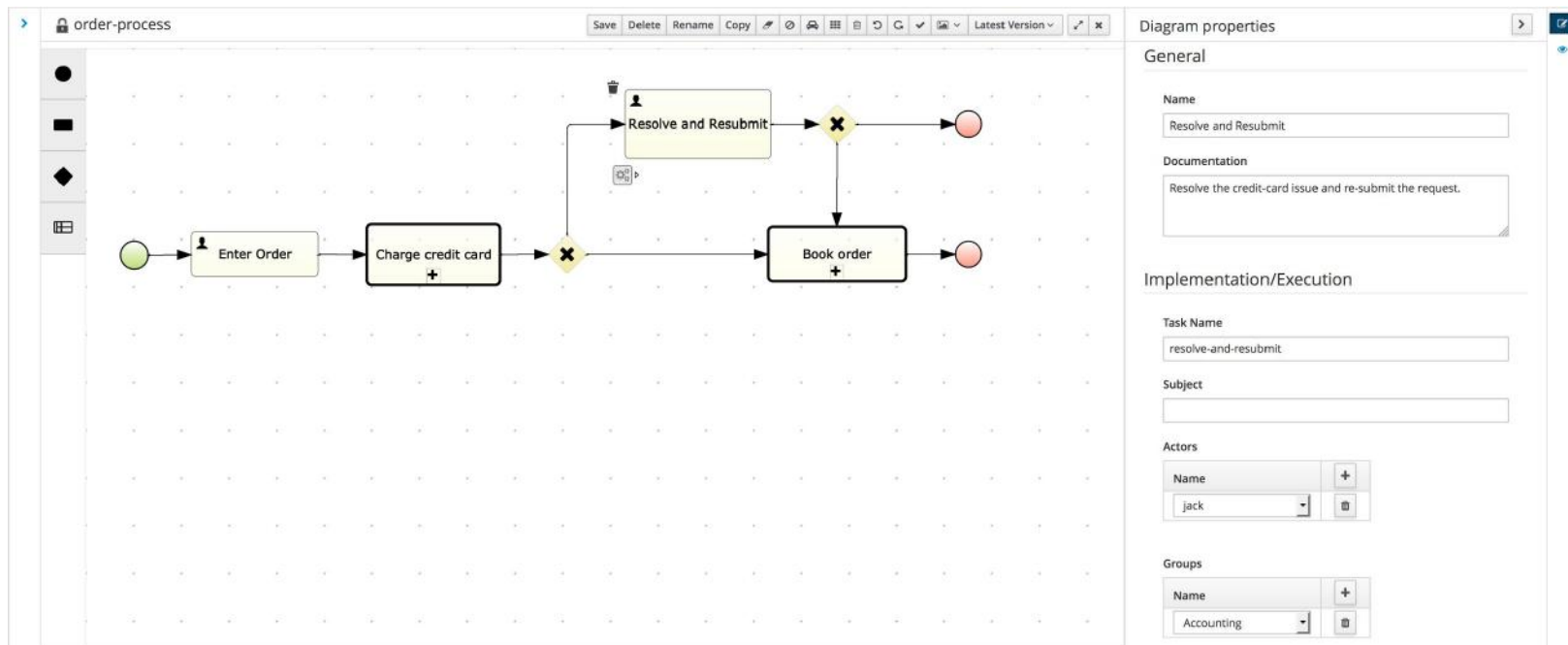
Top Tools Used



Rarely _____ Daily

BPMN2 MODELER

Stunner



App Former

The screenshot displays the App Former interface. At the top, the title bar reads "Form Modeler [case-mgmt-project.my-process-taskform]" and includes buttons for "Save", "Delete", "Rename", "Copy", and "Latest Version". Below the title bar, there are tabs for "Editor" and "Overview". The main workspace shows a form design with a Red Hat logo and the text "redhat." at the top. Below this is a section titled "My Cool Process Start Form". The form contains four input fields: two "TextBox" fields, a "Birthday" field with the placeholder text "Please enter your birthday", and a "Social Security Number" field with the placeholder text "Please enter your social security number...". On the right side, there is a "Components" panel with a "Tools" section containing a list of components: HTML Component, TextBox, TextArea, CheckBox, DatePicker, Slider, ListBoxField, RadioGroup, Picture, Document, AssigneeEditor, and SubForm.

Dashbuilder

AppFormer-based

Displayer Editor

Displayer Editor

Type

Data

Display

Displayer Editor

x

Type

Data

Display

Bar

Pie

Line

Area

Bubble

Meter

Metric

Map

Table

Selector



Type

Data

Display

View as table

Data Set

hr-employee

Filters

[Add New](#)

Categories

name

Values

id

Sum

name	id
Duncan	1.00
Jason	2.00

Bar

Pie

Line

Area

Bubble

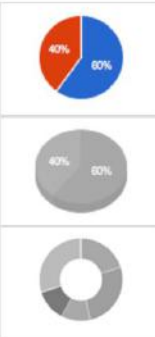
Meter

Metric

Map

Table

Selector



Entando

Partnership

The image displays two screenshots of the Entando dashboard interface. The left screenshot shows a user profile for David Williams (Art Director) and a dashboard for Amelia. The dashboard includes a welcome message, a notification list, a line chart for 'Daily mortgage progress', and three summary cards for mortgage requests: Monthly (120), Annual (14,400), and Today (5) with a total value of \$400,000. The right screenshot shows a detailed view of mortgage requests with a table listing entries, a search bar, and a 'Messages' sidebar with notifications and statistics.

ID	Name	Status	Created	Complete	Diagram
1	Patrick Smith	Ready	Jul 14, 2013, 11:06:39 AM	Complete	Diagram
2	Alice Jackson	Reserved	Jul 14, 2013, 11:06:39 AM	Complete	Diagram
3	John Smith	Ready	Jul 14, 2013, 11:06:39 AM	Complete	Diagram
4	Anna Jordan	Reserved	Jul 14, 2013, 11:06:39 AM	Complete	Diagram
2	Alice Jackson	Ready	Jul 14, 2013, 11:06:39 AM	Complete	Diagram
1	Patrick Smith	Reserved	Jul 14, 2013, 11:06:39 AM	Complete	Diagram

entando

CASE MANAGEMENT



BPM Usage spectrum

Straight Through

Human Intensive

Case Management

The BPM engine “choreographs” a sequence of automated activities, it involves humans by exception

- Trading processes (Capital Market, Banking, Energy ...)
- Automatic claims processing
- Automatic reordering
- Inventory reduction / rebalancing
- Order to cash automation

The BPM says to humans which is the next action in a quiet pre-ordered manner.

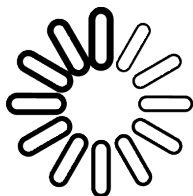
- Order fulfillment
- Claims processing
- Loan approvals
- Mortgage origination
- Travel requests
- Purchase requests
- Mobile workforce support

BPM suggests possible next steps, Humans decides the next best action eventually overriding with and ad hoc activity. Users look at the BPM as a task and document organizer

- Investigation solution
- Incident management solution
- Next-Gen customer onboarding
- Customer retention program
- Personalized customer service
- Omni-channel engagement marketing

Case Management

Engine Support



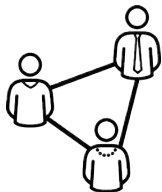
Runtime Strategy

PER_CASE provides a single KIE-Session for all process instances within a case.



Case Files

Live in session's "WorkingMemory" (as opposed to process variables).
Case-scoped, so accessible to all process instances in a given case



Case Roles

Per-case mapping of users and groups to case-users and case-groups
People can have different roles in different case instances.
Mapping provided when case is created (and can be changed afterwards)

Focus on Stages At glance:

- Data
- Task
- Milestones
- Roles
- Activities
- Documents

APPLICATION NAME

Back to Case List > Case0200b

Case0200b (Robert Frost)

Step 1 - Completed Step 2 Step 3 Step 4 Step 5 - Active Step 6 - Not Reached Step 7 - Not Reached Step 8 - Not Reached Step 9 - Not Yet Reached Complete Refresh

Overview Activity Documents

Case Details

Case ID
Case0200b

Case Name
Development case instance.

Status
Active

Owner
Cami

State
Started on 2016-11-07

Task Actions

Available 12

- Review Document
Unassigned
- Collect documents
Unassigned
- Approve document
Unassigned

In-Progress 1

- Review other documents
2 seconds ago (Aimee)

Completed

- Reconcile payments
2 days ago (Deepak)

Milestones

- ✓ A Milestone Name that is completed
- Compliance Checkpoint for Updated FINRA 2017 Rules
- ✓ Representative Item that is term'd
- Renew More Documents

Comments

Add a comment.

- Katie Person (kw-01)** 2 days ago
@aimee: Any updates to Case#0000000000 (Jane Person)?
- Aimee Person (admin)** 3 days ago
I posted the intake data for Case#0000000000 (Jane Person). Follow-up with somebody about something.
- Cami Person (owner)** 4 days ago
@katie: Any updates to Case#0000000000 (Jane Person)?

Roles

- Case Owner**
Aimee
- Compliance**
Cami
- Reviewers**
Cami, Paula

Activities

All Activities

- 4 seconds ago
Milestone1 reached
- 1 minute ago
admin added a document
- 5 days ago
Milestone1 ready
- 10 minutes ago
Aimee added a comment
- 9 days ago

Documents

- Contract 1.2
Sales contract for New Jersey
3 seconds ago, by aimee
- Warranty_2017
Updated product warranty.
7 minutes ago by keithwarring
- Pricing-sheet_2017_06
Updated prices for 2017, they might be lower or they could be higher, it's really anyone's guess.

DEPLOYMENT



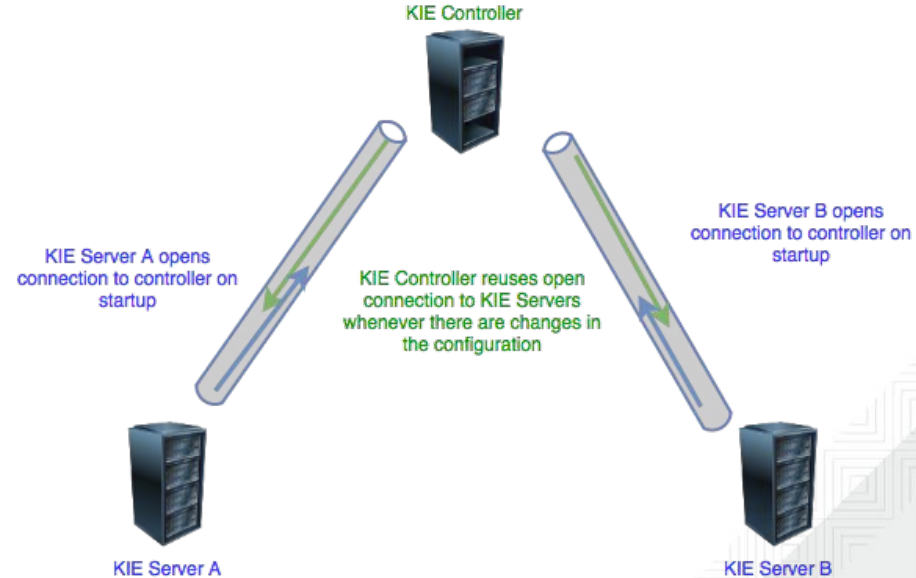
CONTROLLER

Websocket communication

KIE Server initiate the communication at startup and the controller reuse it.

Previously, for managed KIE Server configuration, both controller and kie server need to know how to communicate with each other

- This was particularly complex to manage in OpenShift environments, where pod can be created and destroyed frequently



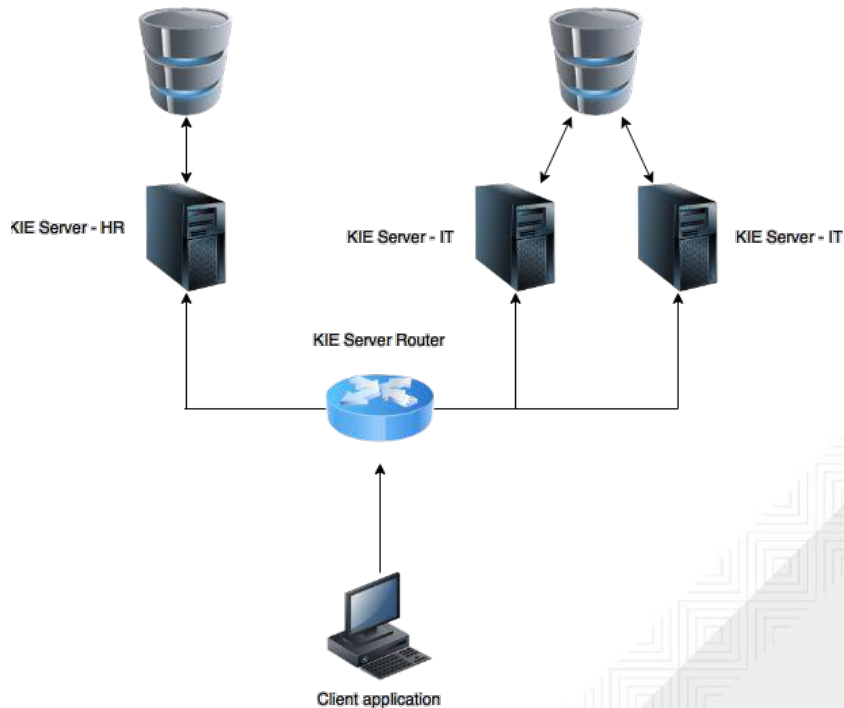
SMARTER ROUTER

Hide configuration complexity

Main goals:

- Hide the complexity of many KIE Server instances hosting different projects (kjars)
- Aggregate information from different KIE Servers regardless if they share the same DB or host the same projects (kjars)

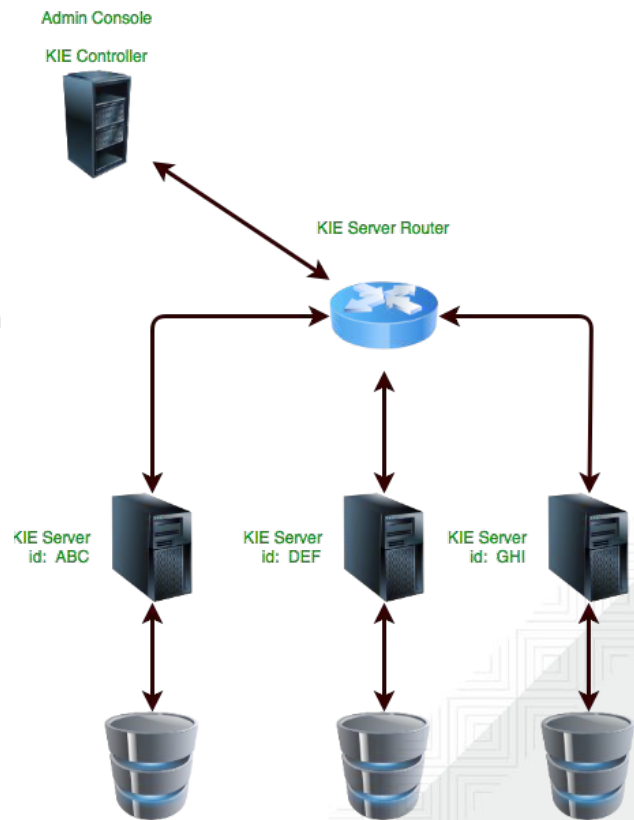
KIE Server send notifications to Smarter Router when configuration is changed: *container start / stop, instance start/ stop*



CLOUD ARCHITECTURE

Immutable Unmanaged KIE Servers with Smart Router and Admin Console

- Users interact with KIE Servers always via Smart Router
- KIE Servers can come and go at anytime and register/unregister in the Smart Router
- Smart Router will dynamically update Controller with new containers coming in
- Admin Console knows existing KIE servers



ERROR HANDLING

The Execution Errors view shows a list of errors

User can acknowledge errors

Quick search

Filter by fields

- Process Instance Id
- Job Id
- Type

Execution Errors

Search All New Acknowledged

Id Filter By Error Id... Type Acknowledged

Active filters:

Search Results Bulk Actions

Id	Type	Process Instance ID	Error Date	Deployment Id	Actions
1	Task	1	08-Jun-2017	evaluation_1.0.0-S...	Acknowledge
2	Task	2	08-Jun-2017	evaluation_1.0.0-S...	Acknowledge
3	Task	3	08-Jun-2017	evaluation_1.0.0-S...	Acknowledge
4	Task	4	08-Jun-2017	evaluation_1.0.0-S...	Acknowledge

10 items 1-4 of 4



2 - evaluation_1.0.0-SNAPSHOT

Error Details

Id: 2
Tipo: Task
Deployment Id: evaluation_1.0.0-SNAPSHOT
Process Instance ID: 2
Process Id: Evaluation
Activity Id: 220
Activity Name: 2_Act_name
Job Id: 2
Message: User '[Userimpl:salaboy]' was unable to execute operation 'Claim' on task id 2 due to a no 'current status' match
Acknowledged: Yes
Acknowledged By: Katy
Acknowledged At: 08-Jun-2017
Error Date: 08-Jun-2017

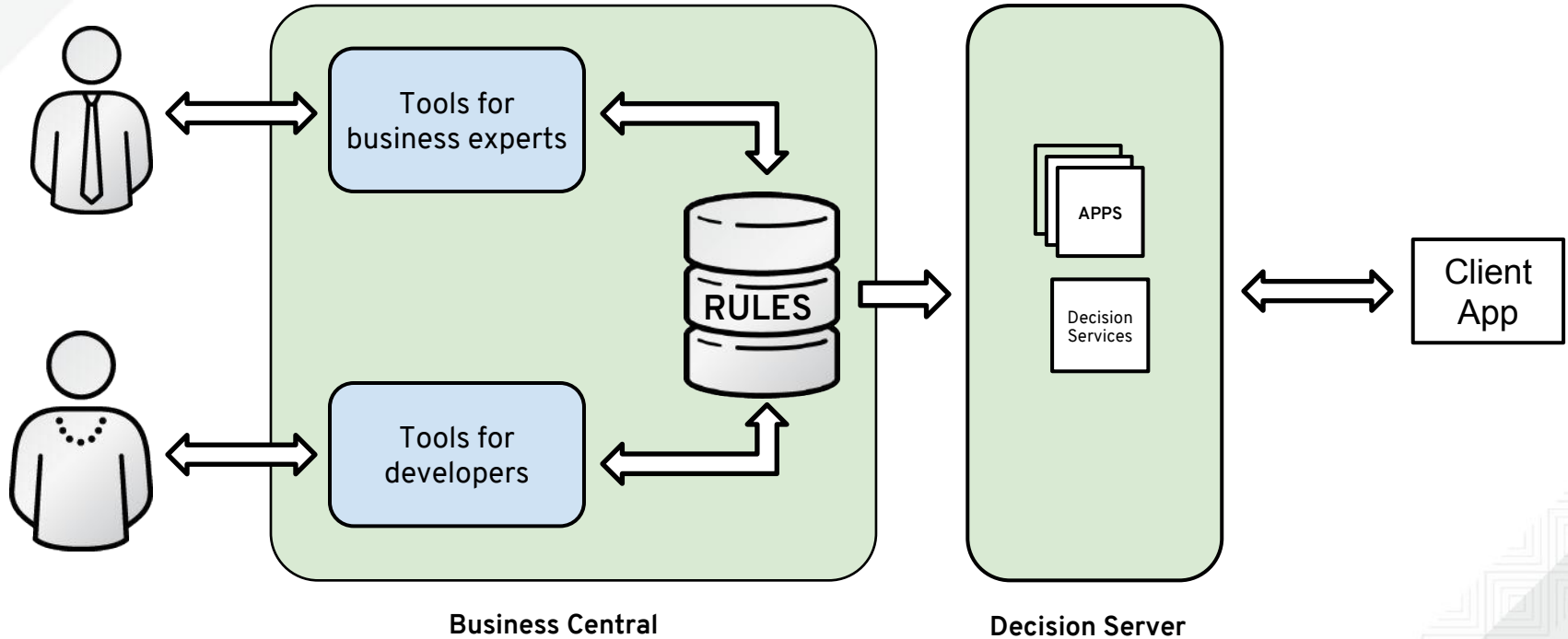
Error: 11:08:47,932 WARN [org.jboss.services.task.persistence.TaskTransactionInterceptor] (default task-114) Could not commit session: org.jboss.services.task.exception.PermissionDeniedException: User '[Userimpl:salaboy]' was unable to execute operation 'Claim' on task id 2 due to a no 'current status' match at org.jboss.services.task.internals.Lifecycle.MVELLif

BUSINESS DECISIONS



RED HAT JBOSS BRMS

Enables construction of apps that automate business decisions, guided by business rules...



Decision Tables

loan-application-decision-table						
#	Description	scs: CreditScore		sI : Loan		sI
		Minimum Credit Score	Maximum Credit Score	Minimum Amount	Maximum Amount	Approved
1	Credit Score to low	0	200	0		<input type="checkbox"/>
2	Credit Score low	201	400		4000	<input checked="" type="checkbox"/>
3		201	400	4001	5000	<input type="checkbox"/>
4		401			5000	<input checked="" type="checkbox"/>

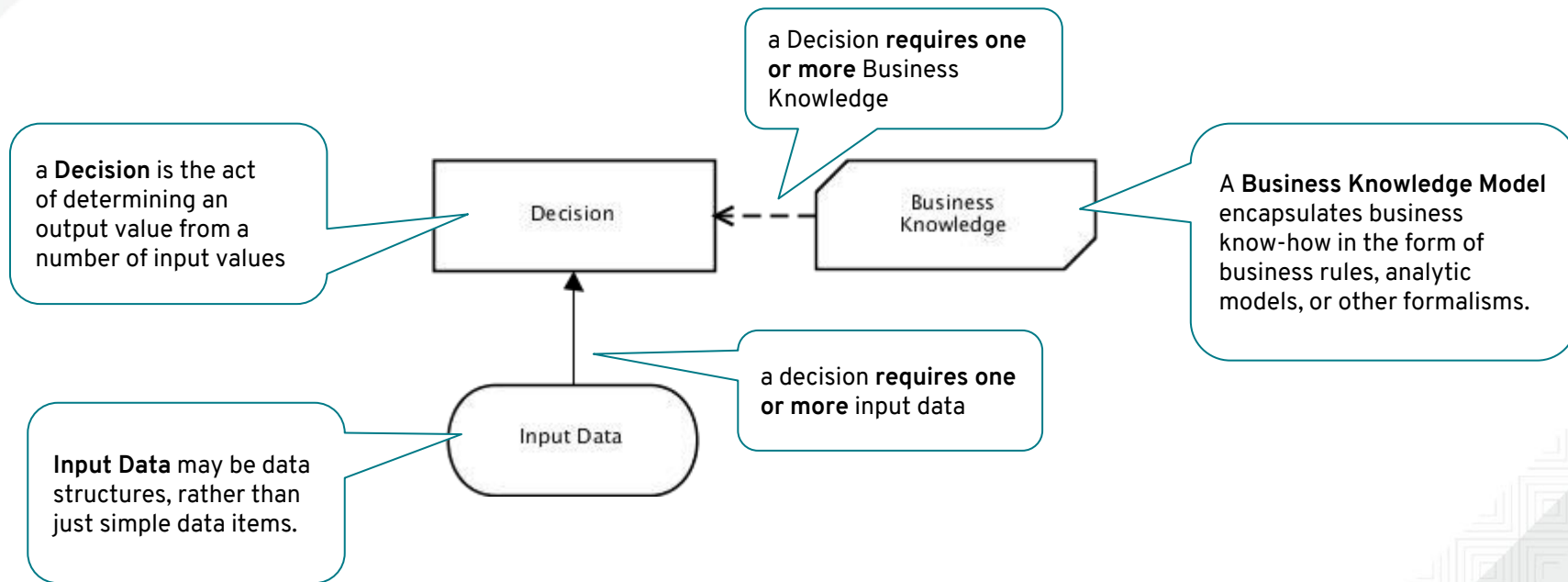
creditscore-decision-table				
#	Description	Credit Ratio		cs : CreditScore
		GreaterThan	LessThanOrEqualTo	Credit Score
1	Credit Score high	0	0.3	450
2	Credit Score medium	0.3	0.7	250
3	Credit Score low	0.7	1	50

“DMN, which stands for Decision Model and Notation,

is a relatively new standard managed by OMG, the organization behind BPMN. It is trying to do for Business Decision Management what BPMN did for Business Process Management a decade ago: empower the business to take charge of the logic that drives its operations, through a vendor-independent diagramming language.” (*Bruce Silver*)

- Version 1.1 released in June 2016
- Defines among other things:
 - a graphical language for business decision modelling
 - a standard notation for **decision tables**
 - an **expression language called FEEL** (which stands for Friendly Enough Expression Language)
 - a metamodel and an interchange format (XML)
 - 3 conformance levels for tool implementations

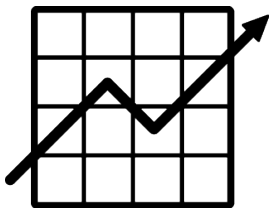
Basic concepts



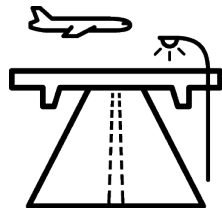
BUSINESS RESOURCE PLANNING



BUSINESS RESOURCE PLANNING



Optimize **Goals**

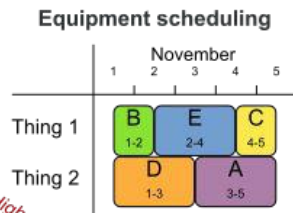
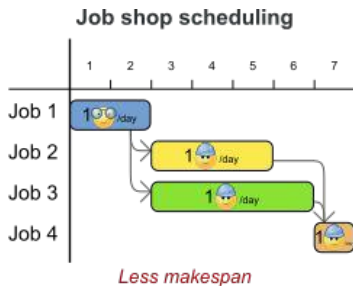
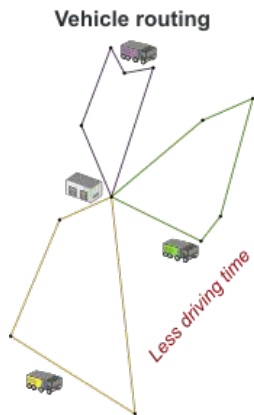


With limited **Resources**

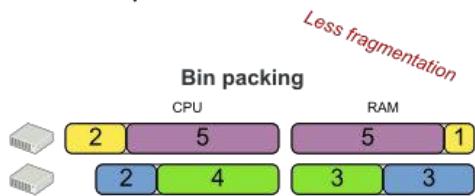


Under **Constraints**

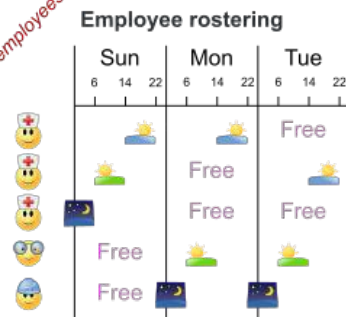
EXAMPLES



OptaPlanner
Do more business
with less resources



Happier employees



BUSINESS RESOURCE PLANNER

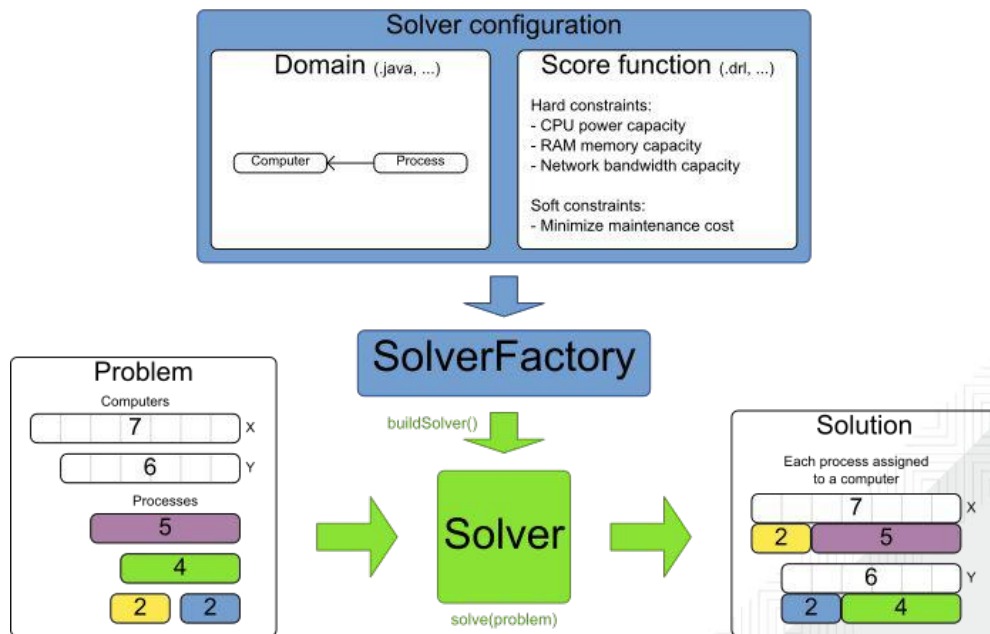
Business Resource Planner is an “optimization engine” (or “constraint satisfaction solver”) platform that runs on JBoss BRMS

It enables **regular Java developers** to create solvers for complex planning problems using a variety of out-of-the-box provided algorithms

It adds unique value to a JBoss BRMS and/or JBoss BPM Suite subscription

Input/Output overview

Use 1 SolverFactory per application and 1 Solver per dataset.



QUESTIONS?





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