Integration Track | Analysing data

Collecting metrics from your Business Processes

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07/05/2019

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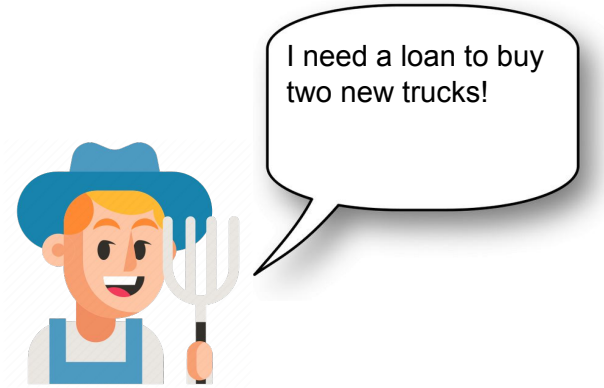
What problem am I solving?

1. Fast feedback for my business
2. Collect business metrics
3. Deliver customer metrics to different systems
4. Data patterns to support business decisions

Use Case

Agricultural Claim Fund Application form



Tyrion Lannister

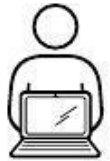
Sansa Stark

Use Case

Agricultural Claim Fund Application

Our example is government grant fund. In our pretend country we want to give money to farmers based on our central government budget per region

We care about funding distribution per geographical regions



Sending a few farm fund applications data to kick off Claim Fund processes.

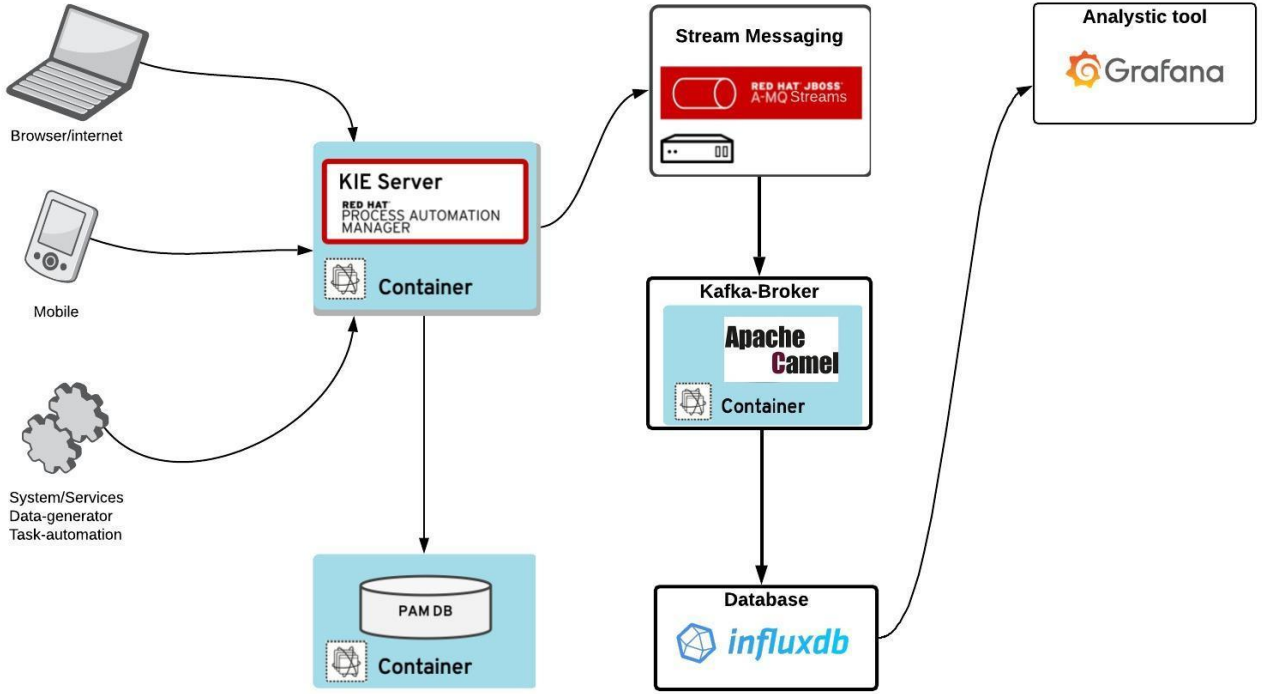
PAM task will be created with status Pending, then the staff members will decide if the loan will be approved or rejected.

Business information was sent to Apache Kafka during the application process which will be displayed via Grafana for analysis.

Analysing data

- CUSTOM METRICS
- COLLECT VALUABLE DATA
- FEED EXTERNAL SYSTEMS
- DISPLAY METRICS FOR ANALYSIS
- FACTS TO SUPPORT DECISIONS
- IMPROVED BUSINESS PROCESSES

Overview solution diagram



Deploying on OpenShift Container Platform

OpenShift Container Platform

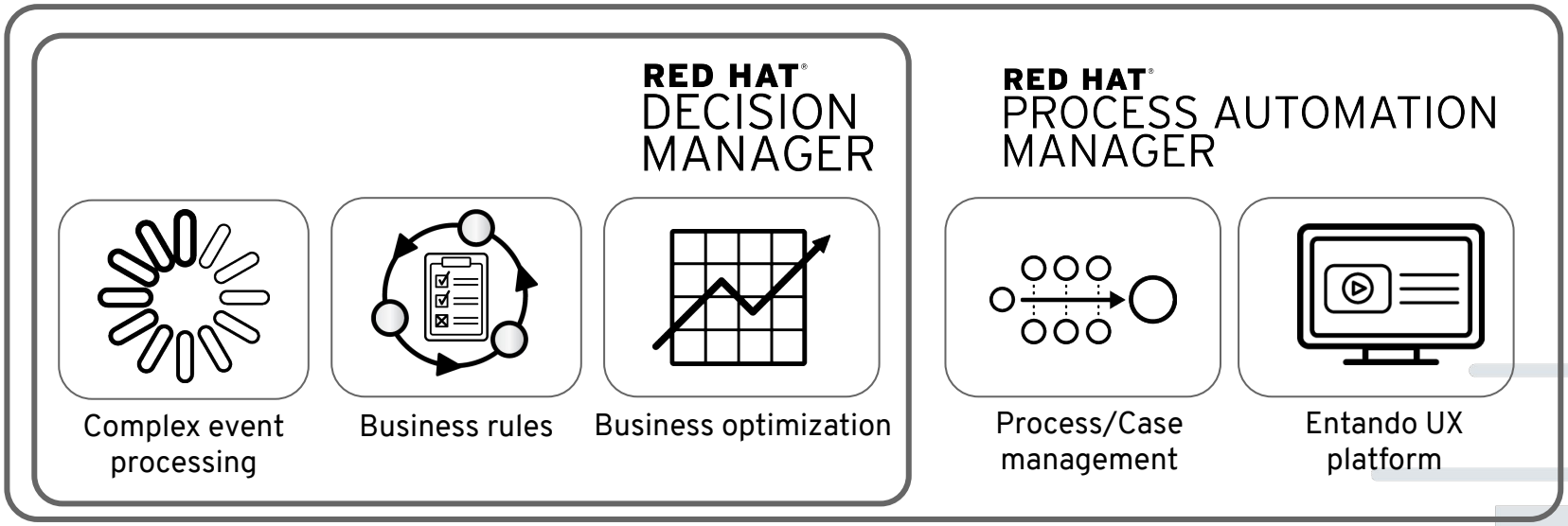
- Platform as a Service tooling
- Foundation to deploy our application
- We will deploy Red Hat Process Automation Kie Server, Red Hat AMQ Streams, Grafana and other components

https://drive.google.com/open?id=1O08HNSqvvukHBdQj4UxKq7IjuIWF9lZf

RED HAT® OPENSHIFT Container Platform

PROCESS AUTOMATION MANAGER

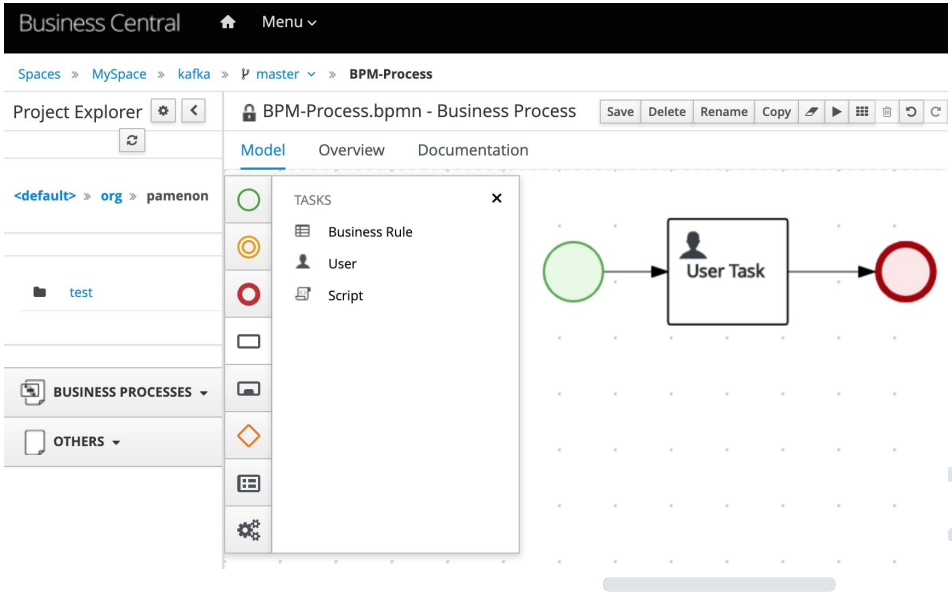
Business Automation Portfolio



PROCESS DESIGNER

Seamless process modeling

- Based on BPMN v2 spec
  - Process Execution compliant
- Extensible Palette with custom services
- Case Management extensions
  - Case file
  - Case roles
  - Milestone task
- Form generation
- Export to PNG, PDF, SVG, BPMN2



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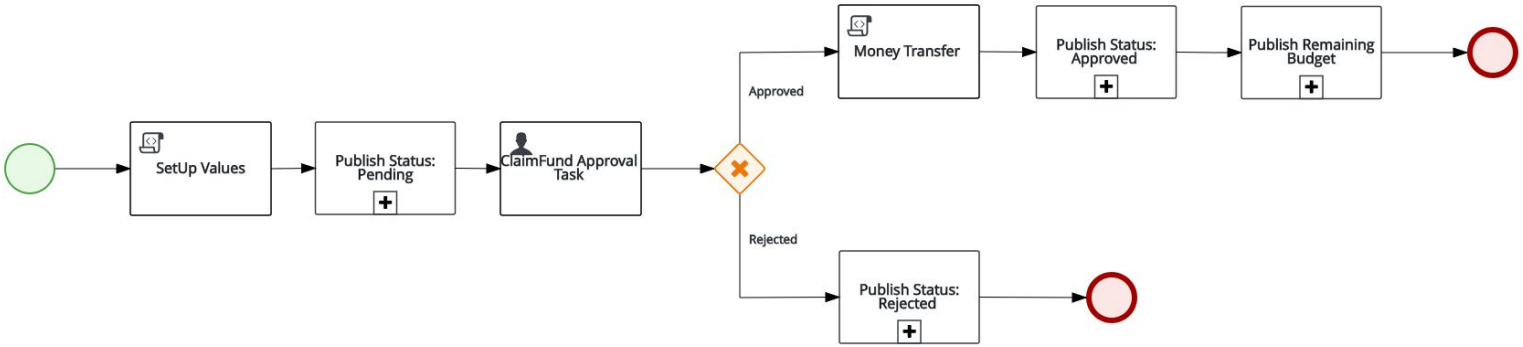
PROCESS AUTOMATION MANAGER

Claim Fund Process

Main process model



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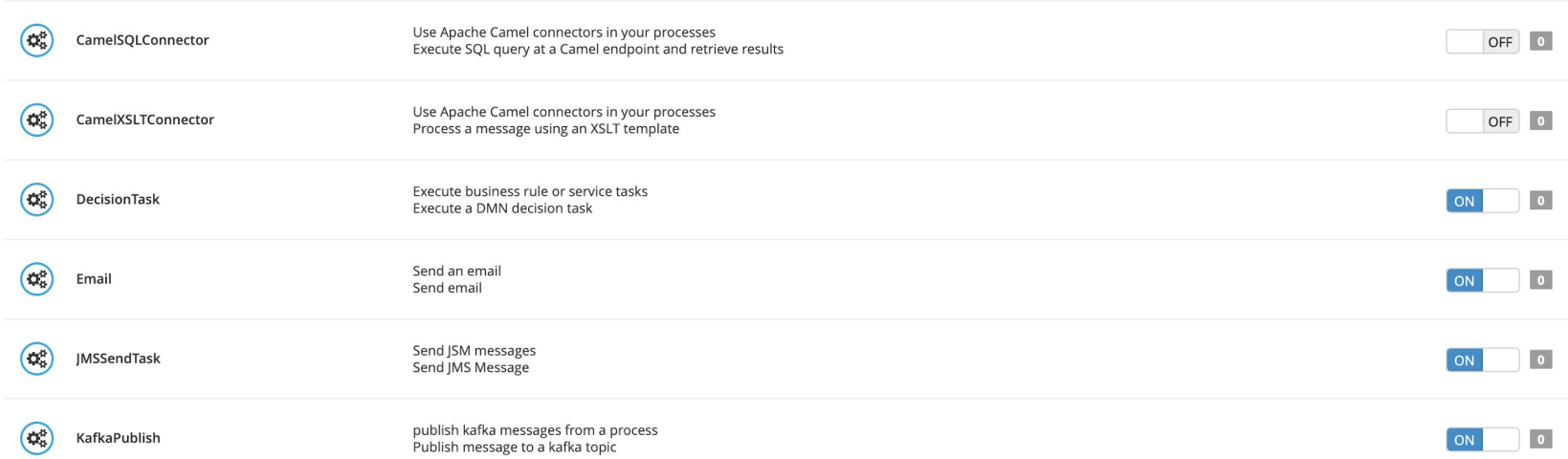
PROCESS AUTOMATION MANAGER

PROCESS AUTOMATION

Integration using Work Item Handler (Publish Kafka Messaging node)

Service task component list



More...

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PROCESS AUTOMATION MANAGER

PROCESS AUTOMATION

Integration using Work Item Handler (Custom node)

- Available as maven archetype jbpm-workitems-archetype
- You can change names, implement your own code, build it
- Install the jar file on Business Central
- It will be ready to use on your process

```
* Copyright 2018 Red Hat, Inc. and/or its affiliates.
package org.pamenon.custom.workitem;

import java.util.HashMap;

@Wid(widfile="MyWorkIteamDefinitions.wid", name="MyWorkIteamDefinitions",
        displayName="MyWorkIteamDefinitions",
        defaultHandler="mvel: new org.pamenon.custom.workitem.MyWorkIteamWorkItemHandler()",
        documentation = "custom-workitem/index.html",
        category = "custom-workitem",
        icon = "icon.png",
        parameters={
            @WidParameter(name="SampleParam", required = true),
            @WidParameter(name="SampleParamTwo", required = true)
        },
        results={
            @WidResult(name="SampleResult")
        },
        mavenDepends={
            @WidMavenDepends(group="org.pamenon", artifact="custom-workitem", version="1.0.0-SNAPSHOT")
        },
        serviceInfo = @WidService(category = "custom-workitem", description = "${description}",
                keywords = "",
                action = @WidAction(title = "Sample Title"),
                authinfo = @WidAuth(required = true, params = {"SampleParam", "SampleParamTwo"},
                        paramsdescription = {"SampleParam", "SampleParamTwo"},
                        referencesite = "referenceSiteURL")
        )
)
public class MyWorkIteamWorkItemHandler extends AbstractLogOrThrowWorkItemHandler {

    public void executeWorkItem(WorkItem workItem,
                                WorkItemManager manager) {
        try {
            RequiredParameterValidator.validate(this.getClass(),
               workItem);

            // sample parameters
            String sampleParam = (String) workItem.getParameter("SampleParam");
            String sampleParamTwo = (String) workItem.getParameter("SampleParamTwo");

            // complete workitem impl...
```

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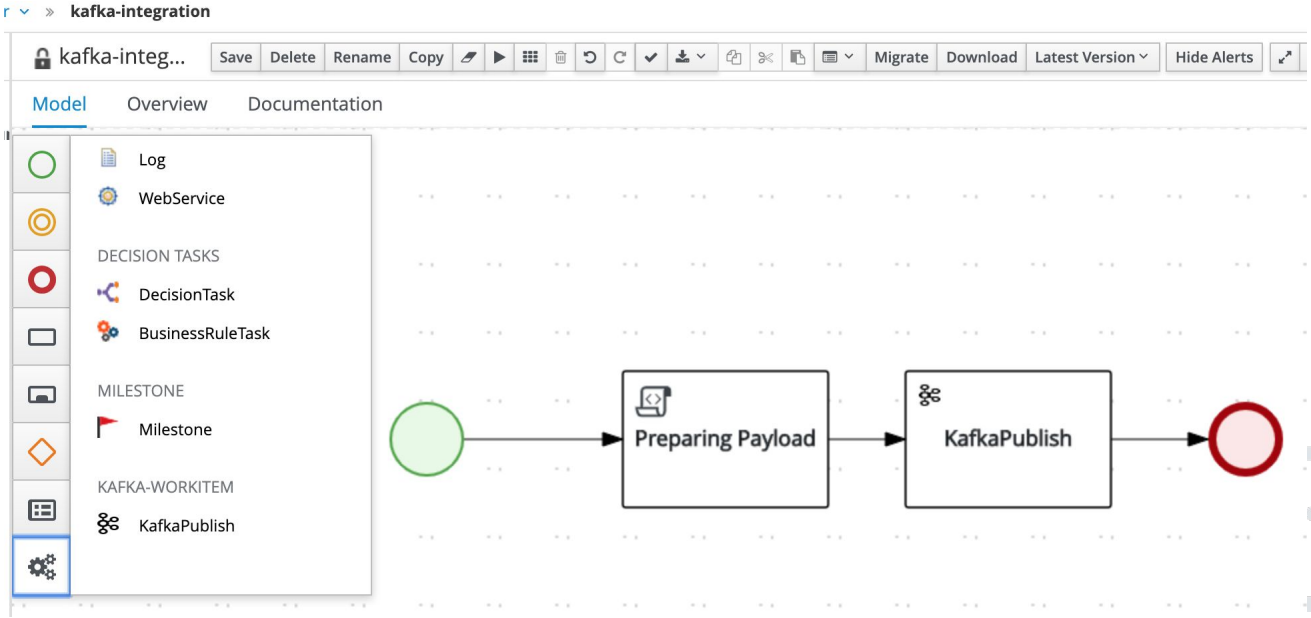
PROCESS AUTOMATION MANAGER

Kafka Process Integration

- Part of services task list
- Reusable integration node
- Configurable way to publish messaging



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PROCESS AUTOMATION MANAGER

Apache Kafka

- Publish/Subscribe messaging system
- Deployed using Red Hat AMQ Streams
- Topics are defined as objects inside of OpenShift
- Cluster is formed of brokers and zookeeper. Messaging entity operator deploys topics into the cluster

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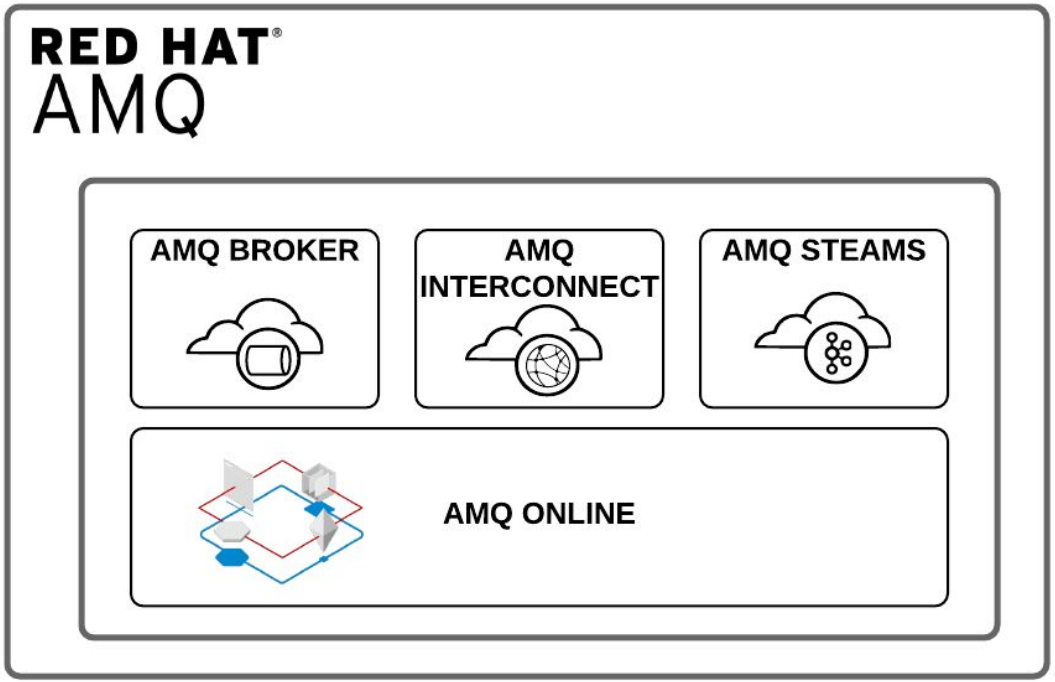
AMQ

Red Hat AMQ



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AMQ

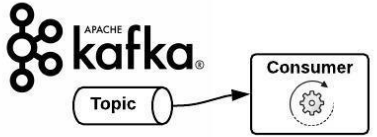
InfluxDB

- Time series data store, this is our “external” system for metrics
- Two series of data: loan_updates and budget_updates
- It is FAST and easy to use with Grafana

Other components

kafka-broker

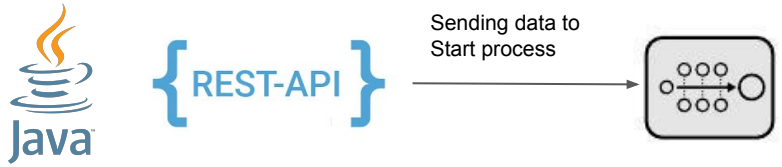
Deployed on Openshift



Kafka-broker listens to the message queues and updates influxdb

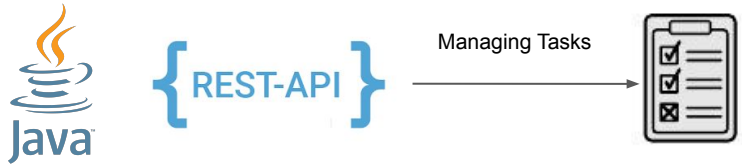
Other components

Data-generator
Running local



Generate random data sets to send into PAM claim fund process via rest

Task-automation
Running local



Simulate user task completion which may approve or reject the customer application

Grafana

- Visualisation of our data
- Real-time feedback from our process
- Fast, client side rendering
- Open source analytic tool

DEMO

Conclusion

- Red Hat PAM is flexible, configurable, microservice, cloud supported
- Red Hat AMQ Stream is faster, easy to integrate, cloud supported
- Collect valuable business data from your process to improve business decisions
- Real time data analyses

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