Streaming decisions with DMN and Kafka

Guilherme H. Caponetto

Software Engineer

Business Automation @ Red Hat

bit.ly/caponetto

What is this presentation about?

Content

Developer Sandbox for Red Hat OpenShift

red.ht/dev-sandbox

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Red Hat OpenShift Streams for Apache Kafka
red.ht/tryKafka

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How to connect them both with DMN
learn-dmn-in-15-minutes.com

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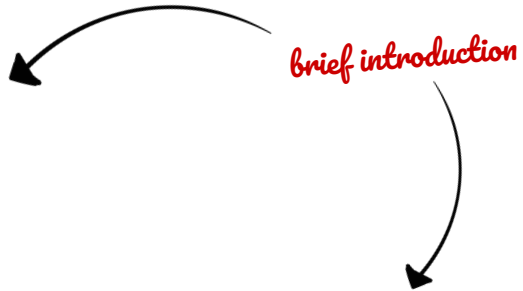

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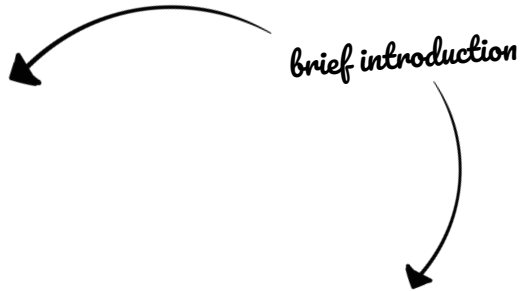

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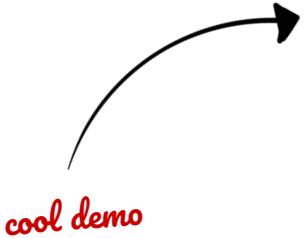

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Developer Sandbox for Red Hat OpenShift

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Developer Sandbox for Red Hat OpenShift

"*The sandbox provides you with a **private OpenShift environment** in a shared, multi-tenant OpenShift cluster that is **pre-configured** with a **set of developer tools**. You can easily **create containers** from your source code or Dockerfile, **build new applications** using the samples and stacks provided, **add services** such as databases from our templates catalog, deploy Helm charts, and much more.*"

red.ht/dev-sandbox

during this presentation

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Red Hat OpenShift Streams for Apache Kafka

*"**Based on the open source Apache Kafka** project, Red Hat OpenShift Streams for Apache Kafka **enables development teams** to more **easily incorporate streaming data** into their applications."*

*"As a **fully-managed and hosted Kafka service**, Red Hat OpenShift Streams for Apache Kafka enables developers to **focus on building better applications** more quickly, **without** having to **worry about the underlying requirements** of data collection and processing."*

(reference)

red.ht/tryKafka

Demo

Goals

1. **Show around** the Sandbox and Kafka
2. **Integrate** them both with **DMN**
3. Do not require **anything** installed

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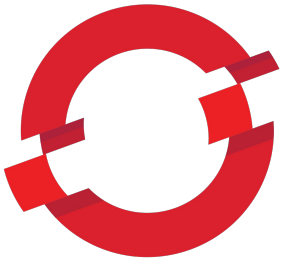
A summary of our demo



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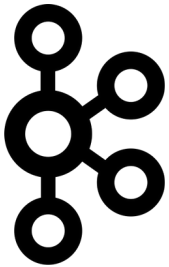
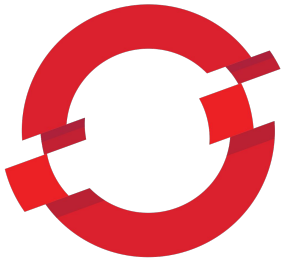


Kafka

A summary of our demo

Producer

Consumer



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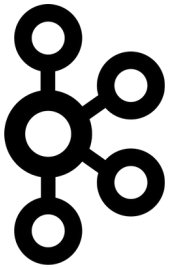

Kafka

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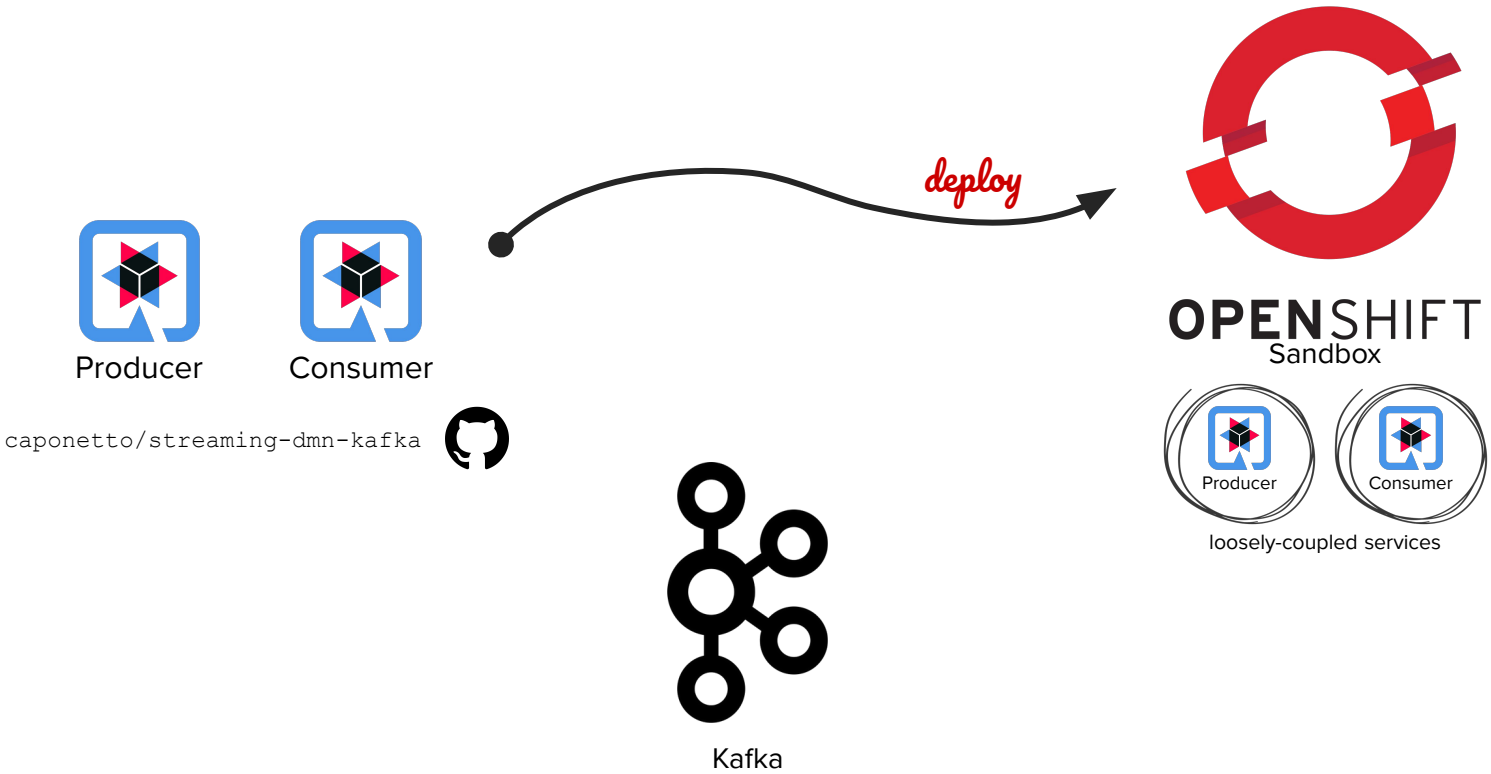

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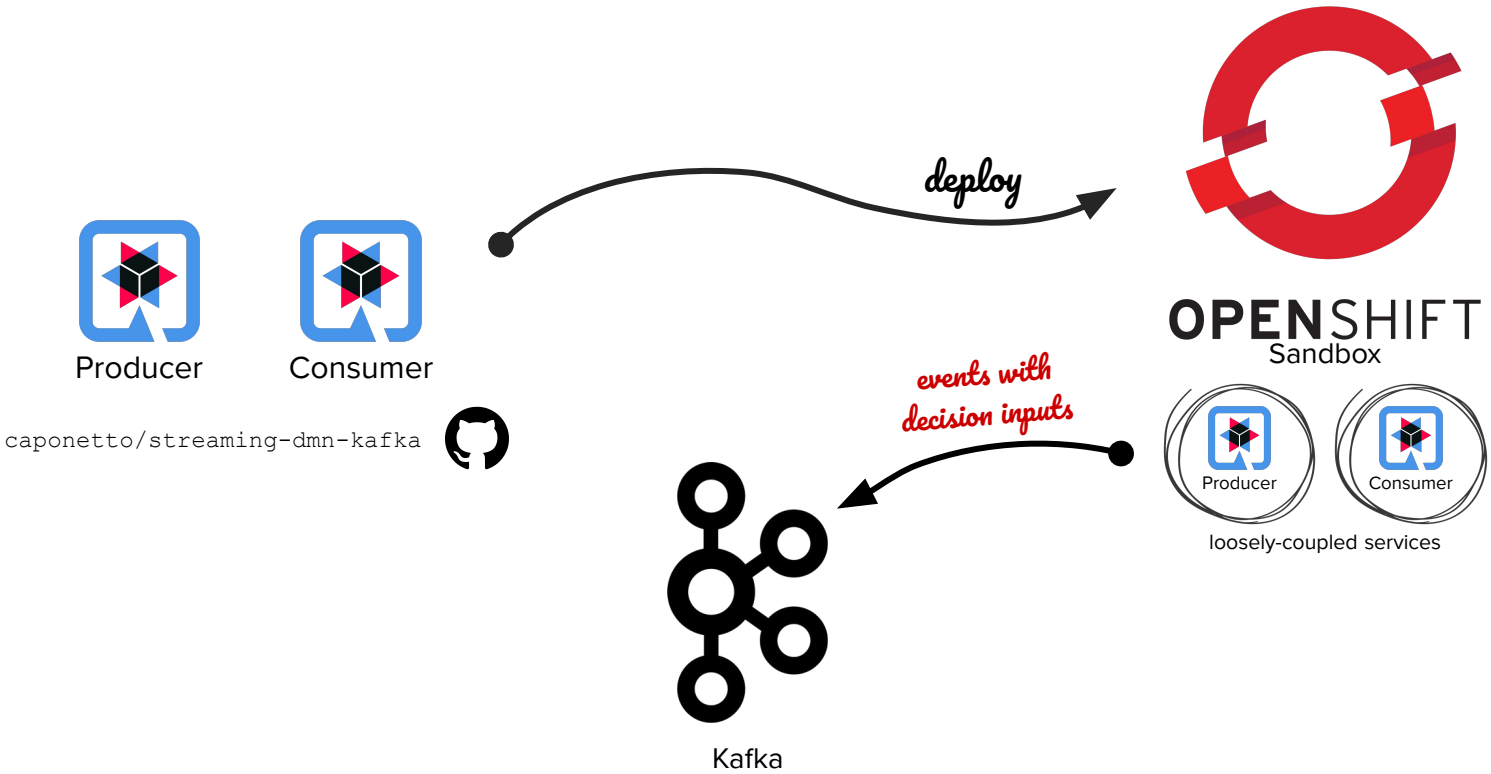

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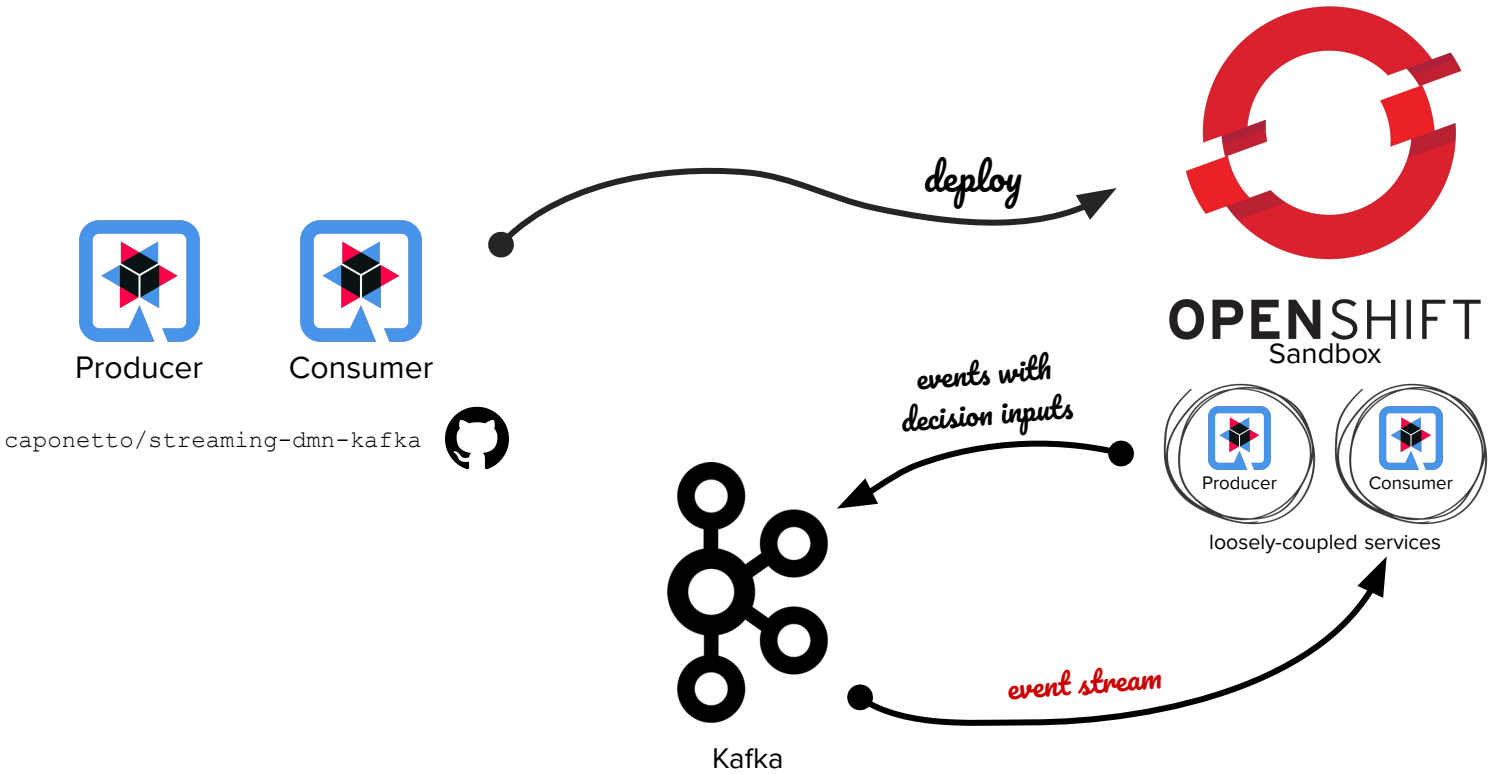

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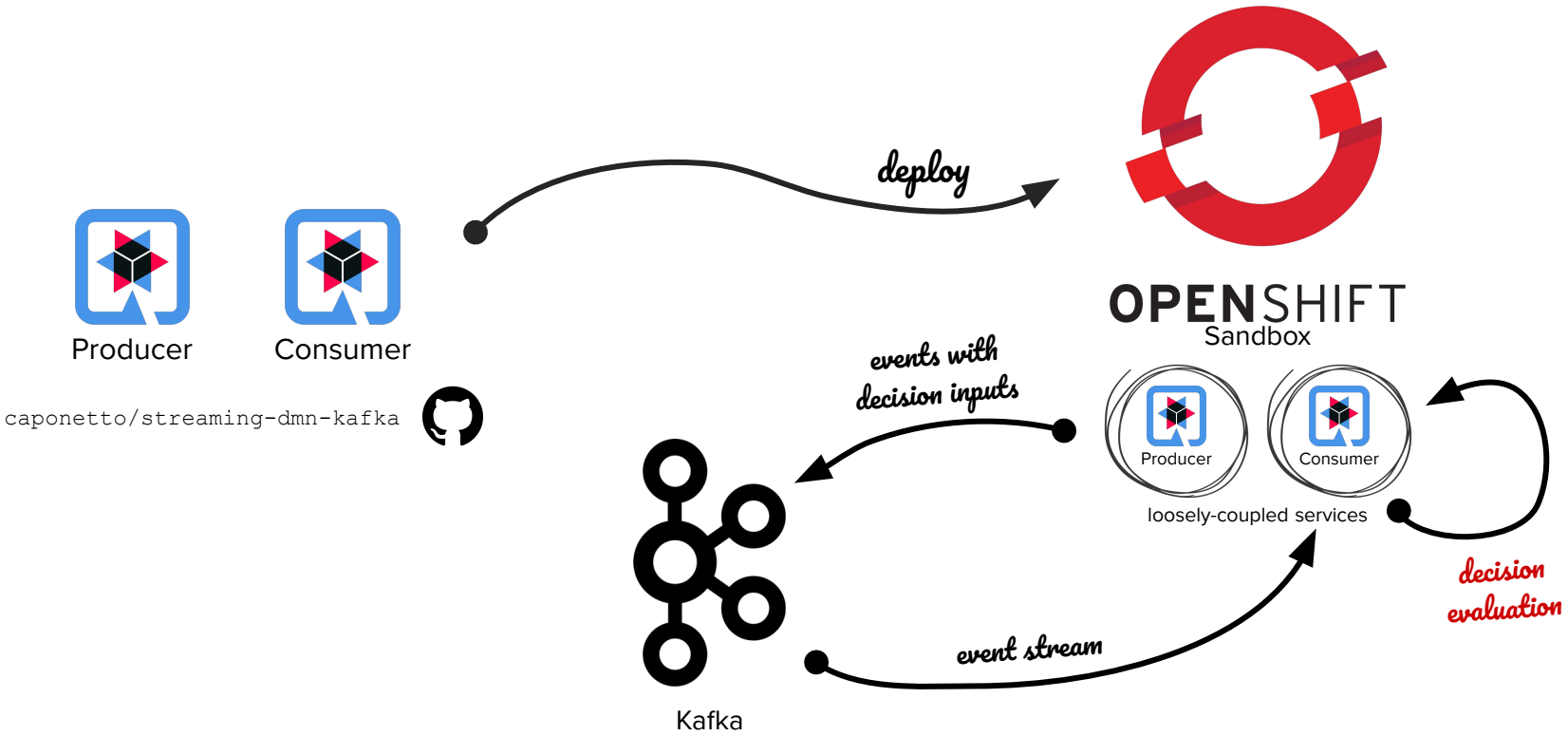

A summary of our demo

a closer look

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Let's **inspect** our DMN

Traffic Violation.dmn

caponetto/streaming-dmn-kafka

A summary of our demo

a closer look

Producer

1 ... n

Send **cloud events** every x seconds to a particular topic.

The payload contains **decision inputs**.

Some of the inputs are **randomly** generated.

A summary of our demo

a closer look

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1 ... n

Send **cloud events** every x seconds to a particular topic.

The payload contains **decision inputs**.

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Driver and Violation data


```
{
  "specversion": "1.0",
  "id": "a89b61a2-5644-487a-8a86-144855c5dce8",
  "source": "SomeEventSource",
  "type": "DecisionRequest",
  "subject": "TheSubject",
  "kogitodmnmodelname": "Traffic Violation",
  "kogitodmnmodelnamespace": "https://github.com/kiegroup/drools/kie-dmn/_A4BCA8B8-CF08-433F-93B2-A2598F19ECFF",
  "data": {
    "Driver": {
      "Age": 25,
      "Points": 13
    },
    "Violation": {
      "Type": "speed",
      "Actual Speed": 115,
      "Speed Limit": 100
    }
  }
}
```


Payload example taken from this repository.

A summary of our demo

a closer look

Consumer 1 ... n

Receive cloud events from the **subscribed topic**.

Include the **Traffic Violation** decision model.

Using Kogito, **evaluate** the decision.

A summary of our demo

a closer look

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Receive cloud events from the **subscribed topic**.

Include the **Traffic Violation** decision model.

Using Kogito, **evaluate** the decision.

Fine data and whether or not the driver should be suspended


```
{
  "specversion": "1.0",
  "id": "d54ace84-6788-46b6-a359-b308f8b21778",
  "source": "Traffic+Violation",
  "type": "DecisionResponse",
  "subject": "TheSubject",
  "kogitodmnmodelnamespace": "https://github.com/kiegroup/drools/kie-dmn/_A4BCA8B8-CF08-433F-93B2-A2598F19ECFF",
  "kogitodmnmodelname": "Traffic Violation",
  "data": {
    "Violation": {
      "Type": "speed",
      "Speed Limit": 100,
      "Actual Speed": 115
    },
    "calculateTotalPoints": "function calculateTotalPoints( driver, fine )",
    "Driver": {
      "Points": 13,
      "Age": 25
    },
    "Fine": {
      "Points": 3,
      "Amount": 500
    },
    "Should the driver be suspended?": "No"
  }
}
```


Payload example taken from this repository.

A summary of our demo

a closer look

```
BOOTSTRAP_SERVER

CLIENT_ID

CLIENT_SECRET

OAUTH_TOKEN_ENDPOINT_URI

TOPIC
```

It’s hands-on time!

Final Remarks

Additional references

- Event-driven decisions with Kogito
- Introducing Red Hat OpenShift Streams for Apache Kafka
- Sending and Receiving Cloud Events with Kafka
- Learn Quarkus faster with quick starts in the Developer Sandbox for Red Hat OpenShift

Thank you!

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