



Serverless Workflow and Kogito

Orchestrating Your Serverless Application
on Any Cloud

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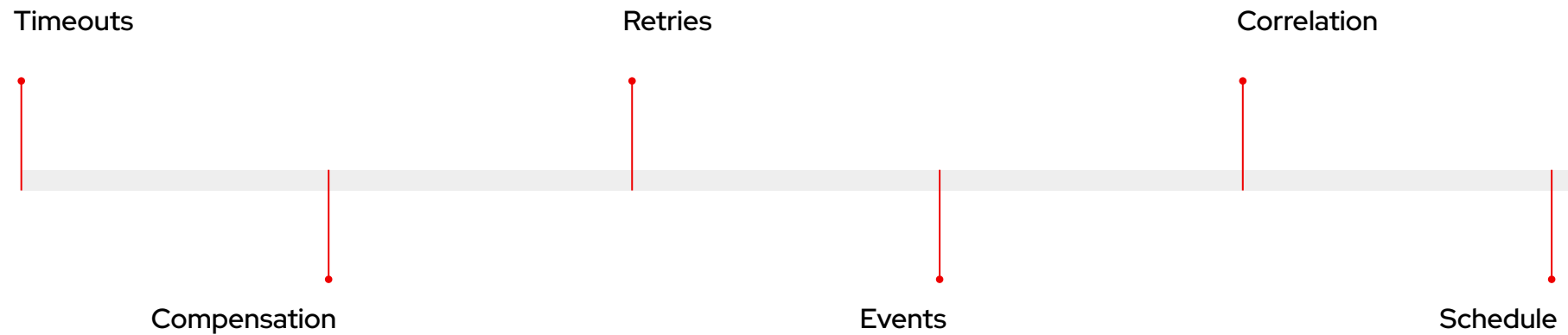


What we'll discuss today

- ▶ Serverless Applications and Workflows
- ▶ CNCF Serverless Workflow
- ▶ Kogito
- ▶ Demo

Serverless Applications

Boilerplate



Serverless Applications

Workflows

Provide out-of-the-box features to make your applications resilient, reliable, and simple.



Step Functions

Amazon Web Services



Google Cloud Platform

Workflows

Google Cloud Platform



Durable Functions

Microsoft Azure



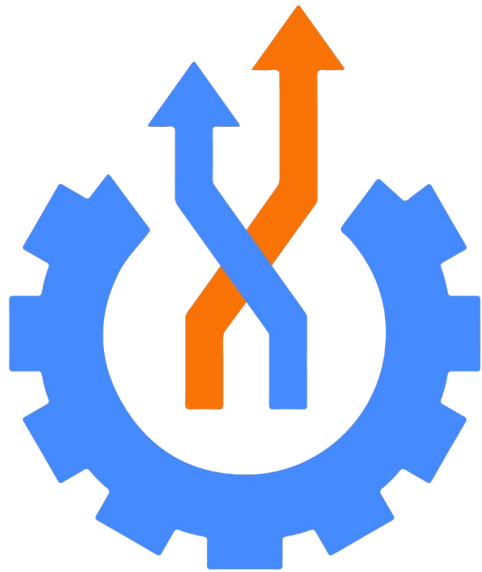
Conductor

Netflix



CNCF Serverless Workflow Specification

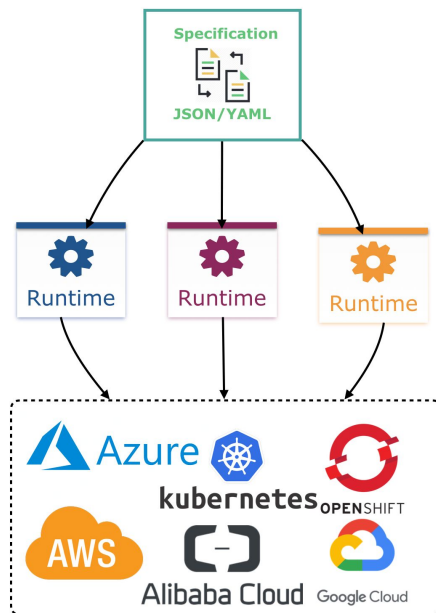
One standard rather than all custom solutions



*"A specification focused on defining a **declarative workflow language** that targets the serverless computing technology domain."*

CNCF Serverless Workflow Specification

One standard rather than all custom solutions



- ▶ Workflows can capture and organize business requirements in a unified manner
- ▶ Vendor-neutral, platform-independent and declarative workflow language
- ▶ Increases the potential for common libraries, tooling and infrastructure
- ▶ Being vendor-neutral, increases portability, productivity and learning curve

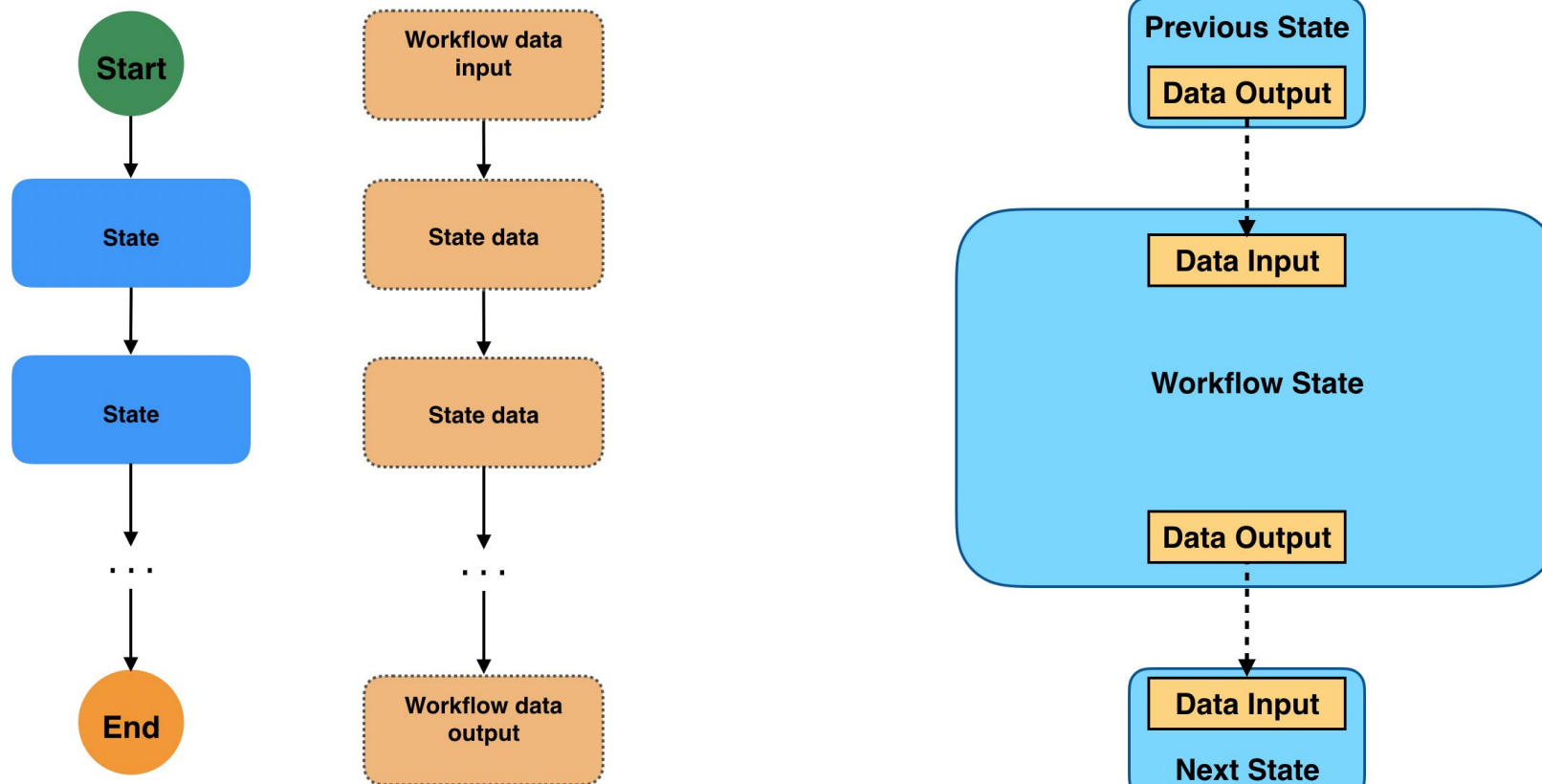
CNCF Serverless Workflow Specification

Takes advantage of well-established and known standards



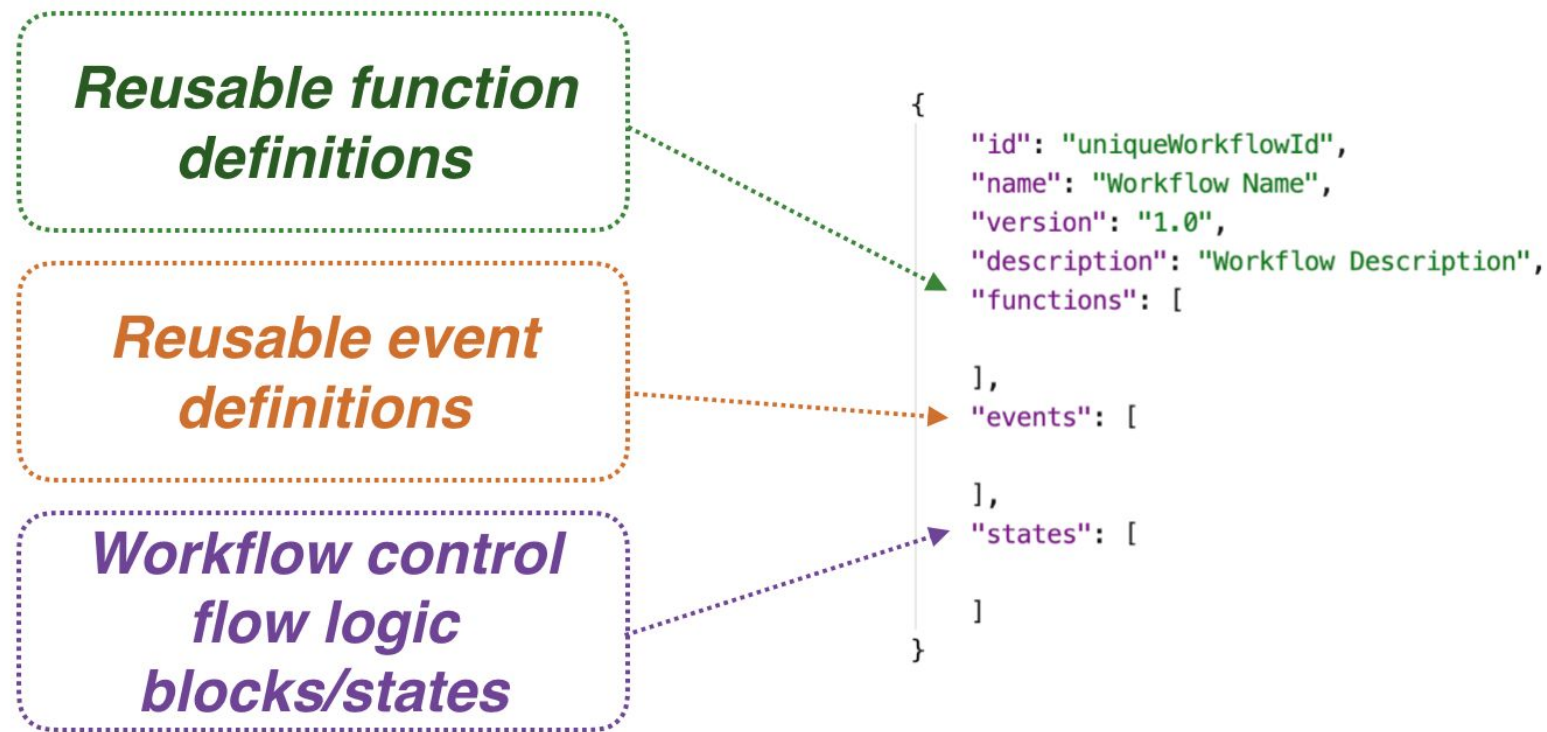
Workflow Data Handling

Data is represented in JSON format



Workflow Definition Structure

Main workflow definition blocks



Serverless Workflow Definition Example

```
{
  "id": "onboardcustomer",
  "version": "1.0",
  "specVersion": "0.8",
  "name": "Onboard Customer",
  "description": "Onboard a Customer",
  "start": "Onboard",
  "states": [
    {
      "name": "Onboard",
      "type": "operation",
      "actions": [
        {
          "subFlowRef": {
            "invoke": "async",
            "onParentComplete": "continue",
            "workflowId": "customeronboardingworkflow",
            "version": "1.0"
          }
        }
      ]
    }
  ],
  "end": true
}
```



```
id: onboardcustomer
version: '1.0'
specVersion: '0.8'
name: Onboard Customer
description: Onboard a Customer
start: Onboard
states:
- name: Onboard
  type: operation
  actions:
  - subFlowRef:
    invoke: async
    onParentComplete: continue
    workflowId: customeronboardingworkflow
    version: '1.0'
end: true
```



Meet Kogito

Kogito is a work in progress implementation of the CNCF Serverless Workflow specification



 Knowledge is everything!



KIE

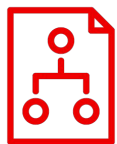


<https://kie.org>

Kogito Capabilities

- ▶ Rules: Describe business rules in specific domain-driven DSL
- ▶ Decisions: Design complex decisions with DMN
- ▶ Serverless Orchestration: Execute workflows based on CNCF Serverless Workflow specification
- ▶ Business Process: Design, execute and track business-driven process based on BPMN
- ▶ Cloud native: Tools to model and run business applications for cloud-native architectures

The Kogito Project



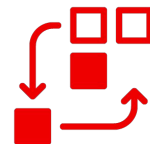
Editors

VSCode plugins, online and standalone editors



Engine

Based on battle tested frameworks such as Drools, jBPM and OptaPlanner



Supporting Services

Cloud-native services to support your business applications



Cloud Tools

Kubernetes Operator and a CLI to deploy and manage Kogito services



Quarkus Support

A Kogito Serverless Workflow application is a Quarkus application

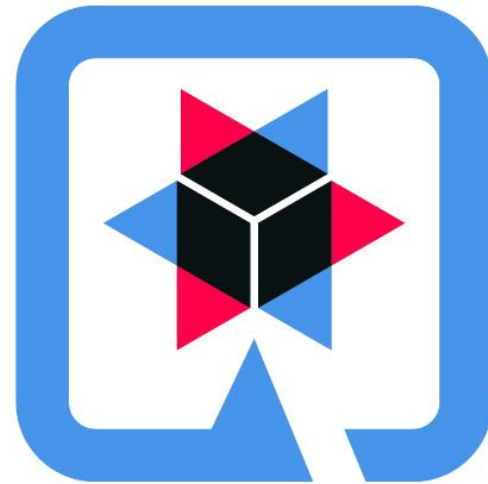


Supersonic Subatomic Java

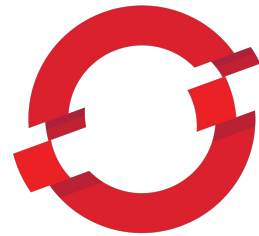
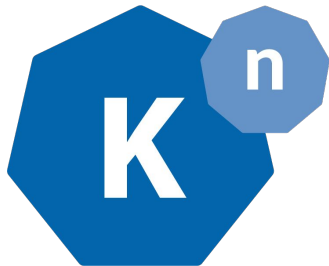
Quarkus Support

A Kogito Serverless Workflow application is a Quarkus application

GraalVM™



kubernetes



OPENSIFT



JAKARTA™ EE

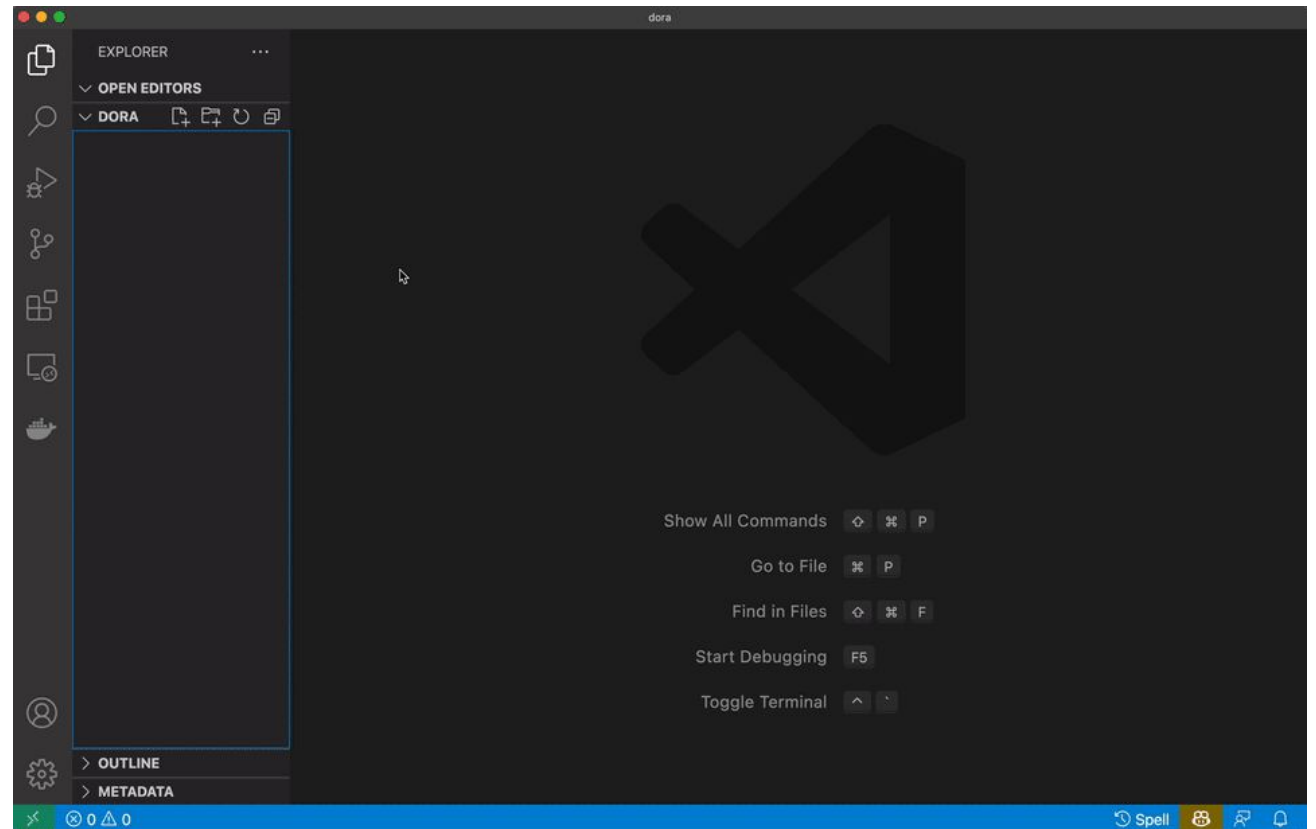


MICROPROFILE™

Red Hat Serverless Workflow Editor

Visual Studio Code Extension

- ▶ Create and edit CNCF Serverless Workflow v0.8 definition files
- ▶ Real-time diagram preview rendering
- ▶ Contextual autocomplete
- ▶ OpenAPI autocomplete to your functions
- ▶ Automatically export diagram to SVG



Show Time!



Demo Sources

<https://github.com/hbelmiro/getting-started-with-serverless-workflow>



What Now?

Use

- ▶ Serverless Workflow Specification
<https://serverlessworkflow.io/>
- ▶ Kogito
<https://kogito.kie.org/>
- ▶ Kogito Examples
<https://github.com/kiegroup/kogito-examples>
- ▶ KIE Blog
<http://blog.kie.org/>

Get Involved

- ▶ Serverless Workflow Repositories
<https://github.com/serverlessworkflow>
- ▶ Kogito Repository
<https://github.com/kiegroup/kogito-runtimes>
- ▶ Kogito Issue Tracker
<https://issues.redhat.com/projects/KOGITO>

Thank you

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