

# Events in Action With Spinnaker, Jenkins, Tekton and Keptn



Jalander Ramagiri

- Senior Software Engineer at Ericsson Software Technology
- Member of CDEvents

Adam Kenihan

- Software Engineer at Ericsson Software Technology

# Agenda



Continuous integration and Deployment



CDEvents a common vocabulary for CD



Eiffel Events



Events in Action



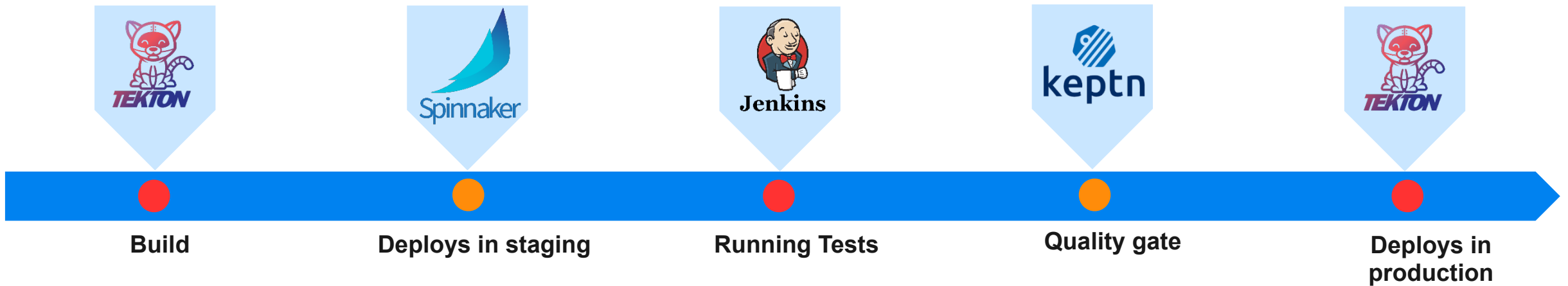
Demo



References

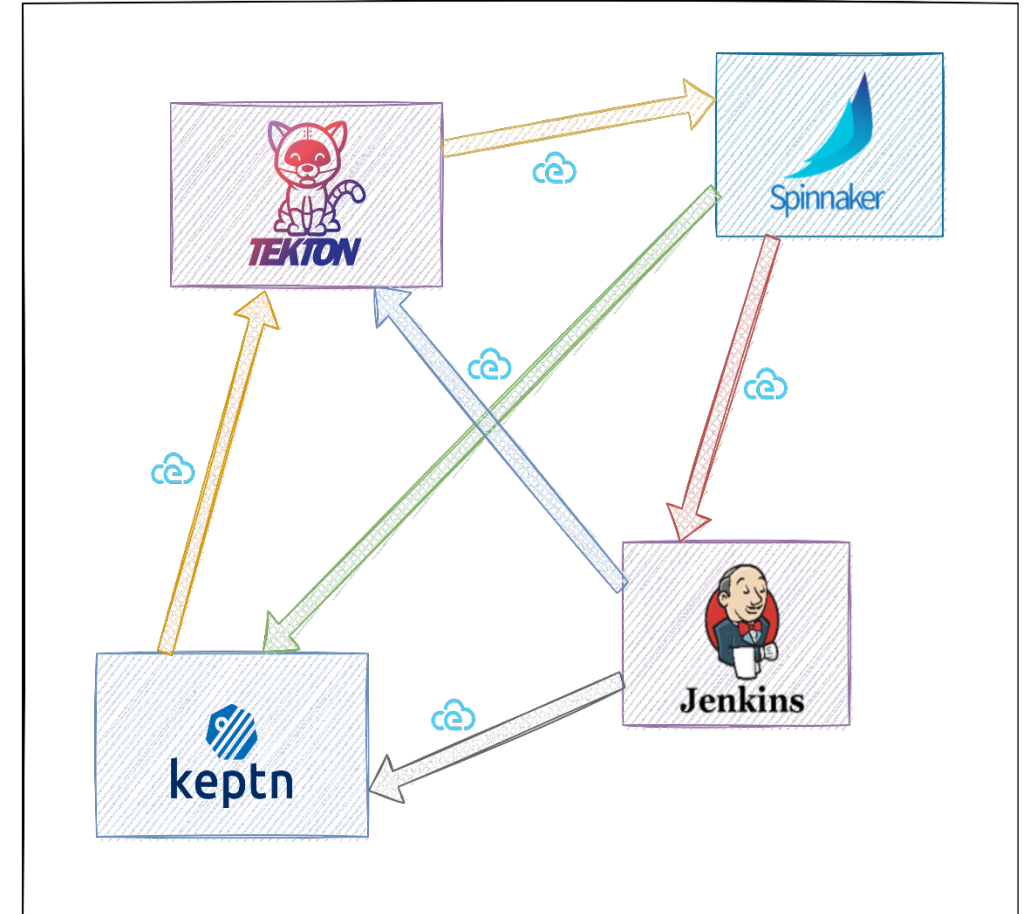
# Continuous Integration and Deployment

- CDF hosts projects/tools related to continuous integration and delivering applications



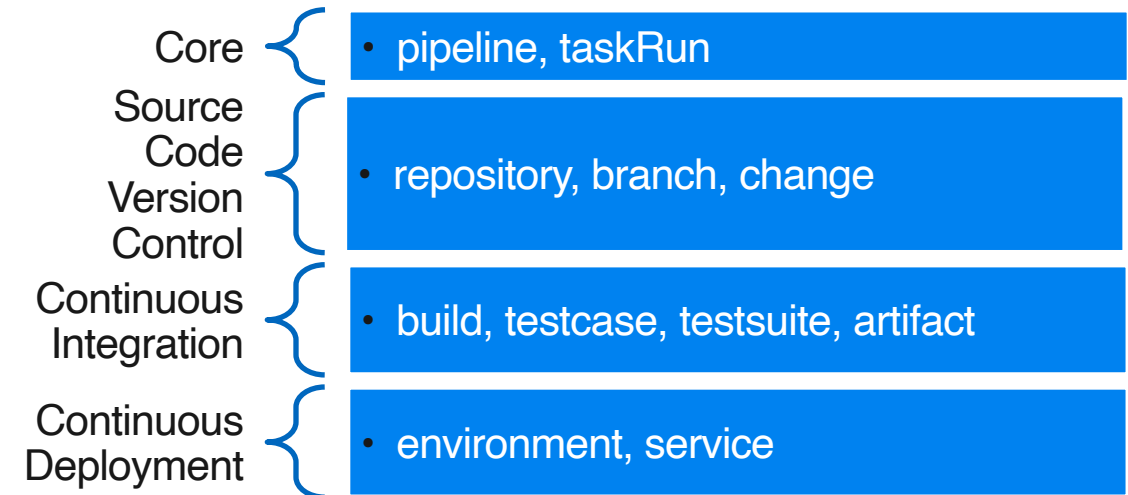
# Events

- Integrate using CloudEvents
- A specification for describing event data in a common way
  - Consistency
  - Accessibility
  - Portability
- But has different formats and Inconsistent Semantics to share between the CI/CD tools



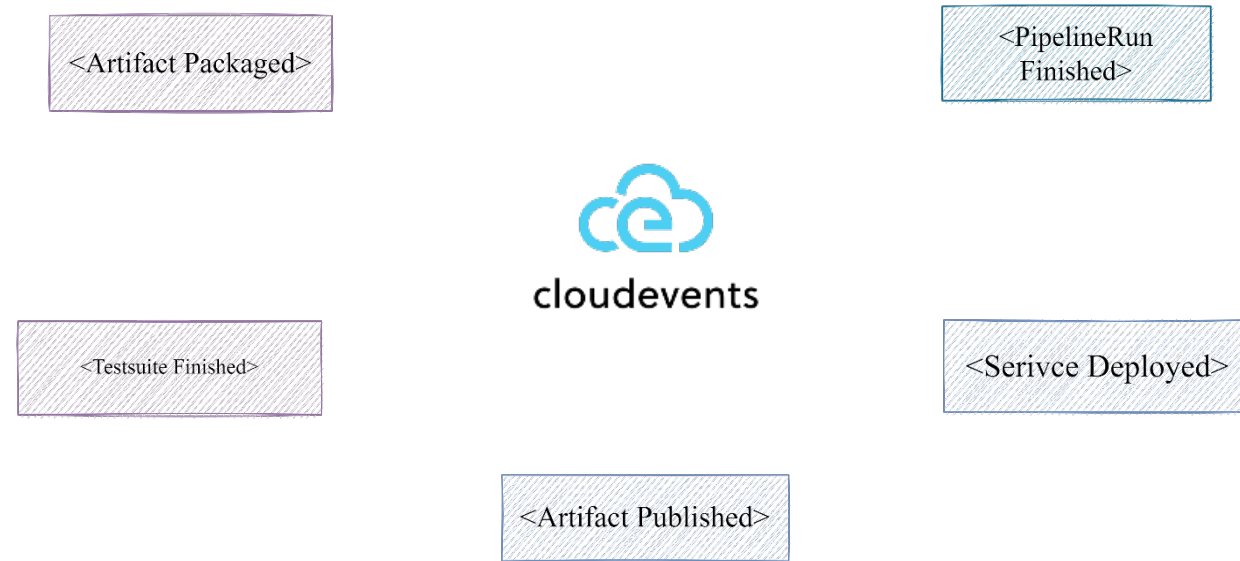
# CDEvents

- A common specification for Continuous Delivery events
- Enables interoperability within a CI/CD eco system
- Using CloudEvent Binding for CDEvents
- SDKs supported to various cloud native CI/CD technologies
  - Go-SDK
  - Java-SDK
- CDEvents Special Interest Group formed to focus on creating Common Vocabulary for CD



# What is an Event?

An “event” is a data record expressing an occurrence and its context.



- Different platforms can be integrated through Events
- Community/Companies engaged with Events



# Eiffel Events

- A protocol for machine-to-machine communication. Focused on CI/CD use cases
- Decouples the tools and process
- Event-translator maps different Eiffel event types to CDEvents

EiffelActivityStartedEvent ↔ dev.cdevents.taskrun.started

EiffelSourceChangeCreatedEvent ↔ dev.cdevents.change.created

EiffelTestCaseStartedEvent ↔ dev.cdevents.testcase.started

E EiffelEnvironmentDefinedEvent ↔ dev.cdevents.environment.created

- Easy to communicate with the Eiffel tools which are in production already with the CDEvents supported tools

# Events in Action with CI/CD tools

- CI/CD tools communicate with each other using CDEvents
- Projects involved in Demo



- Cloud-native solution for building CI/CD systems
- Runs as an extension on a Kubernetes cluster



- Life-cycle management for Cloud-native applications
- Orchestrate the tools related to CD



- Multi-Cloud continuous delivery platform
- Supports pipeline management with the major cloud providers



- Enterprise-level solution to build Serverless and Event Driven Applications
- Extends Kubernetes with Consumers and Producers

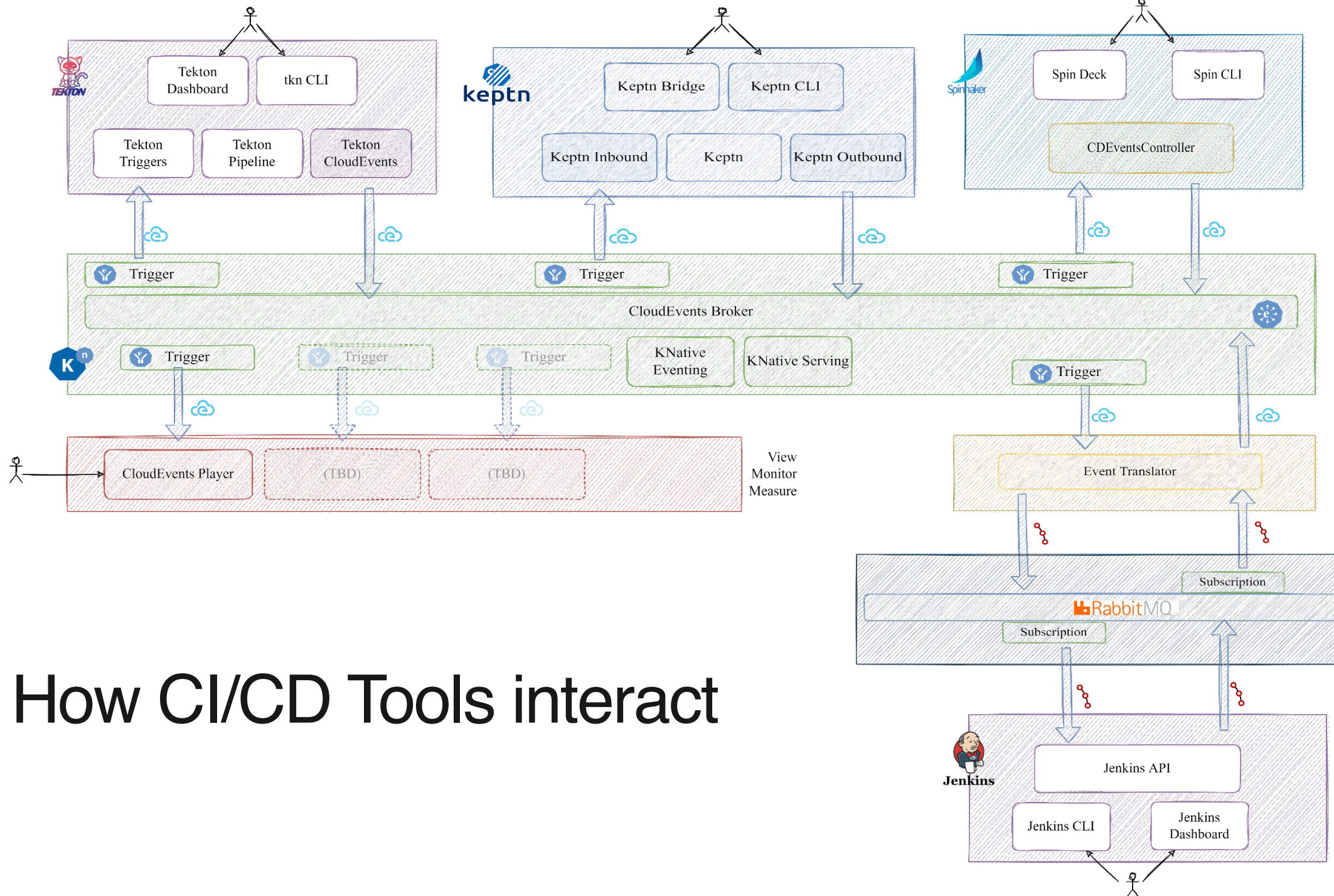


- Self-contained, open-source automation server
- Provides plugins to support building, deploying and automating project

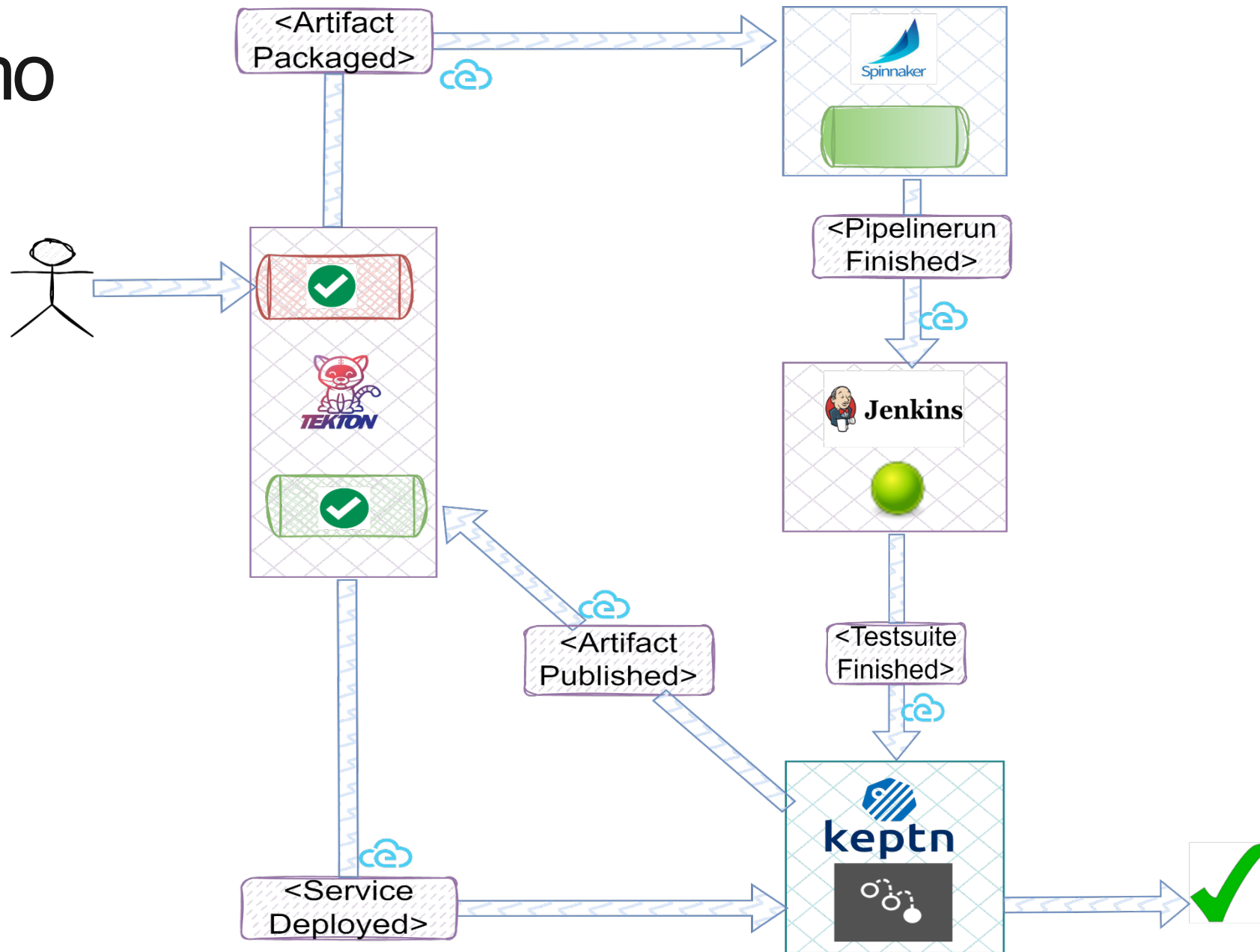


- Message Queueing Software - an intermediary for messaging
- RabbitMQ Queue takes messages from the publisher and sends them to the consumer





# Demo



# Demo

SPINNAKER

Search

Projects

Applications

Pipeline Templates

Search

cdevents-poc

PIPELINES

CLUSTERS

LOAD BALANCERS

FIREWALLS

TASKS

CONFIG

Filters

Group by Pipeline

Show 10 executions per pipeline

stage durations

Create

Configure

Start

POC-K8S-ACCOUNT

deploy-spinnaker-poc

Configure

Start

MANUAL START

anonymous

12 minutes ago

Status: SUCCEEDED

Duration: 00:45

Execution Details

Deploy (Manifest)

STAGE DETAILS: DEPLOY (MANIFEST)

Duration: 00:45

✓ DEPLOY (MANIFEST)

Step Started Duration Status

Deploy (Manifest) 2022-09-08 10:16:52 PDT 00:45 SUCCEEDED

Deploy Status Task Status Artifact Status

keptn / cde

Filter by

Service

poc

Stage

production

Sequence

delivery

delivery of poc succeeded

production

Started today at 18:17 and took 6 minutes 55 seconds

Last task: delivery

delivery succeeded

Context: 41f5db24-6003-4052-a0a8-626327cd14cb

poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03

18:17

18:17 delivery

Jenkins

5

search

Jenkins

Eiffel\_ActF\_From\_CDEvents\_PoC

#1

## Console Output

```
Started by user admin
Running as SYSTEM
[EnvInject] - Loading node environment variables.
Building in workspace /var/jenkins_home/jobs/Eiffel_ActF_From_CDEvents_PoC/workspace
[workspace] $ /bin/sh -xe /tmp/jenkins170815650019622632.sh
+ echo {"parameter":[{"name":null,"value":{"meta":{"id":"8545a7af-fe4e-4194-a00e-b49173087586"},"type":{"EiffelActivityFinishedEvent"},"version":"3.0.0"},"time":"1662657412218","tags":[],"source":{"serializer":{"pkg:maven/com.github.eiffel-community/eiffel-remrem-semantic@2.0.13"},"data":{"outcome":{"conclusion":"SUCCESSFUL","description":"Activity execution is success"},"persistentLogs":[],"customData":{"key":{"artifactId"},"value":{"kind-registry:5000/cdevent/poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03"},"key":{"artifactName"},"value":{"poc"},"links":[{"type":"ACTIVITY_EXECUTION"},"target":{"db2fd23-a64f-43e6-8952-18d7e86a309e"},"Template":{"name":"Event_copy"}}}}}}}}
+ grep -o '[^']*'$
+ grep -o '\\value\\':'[\\']*'$
+ grep cdevent
+ export artifactId=kind-registry:5000/cdevent/poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03
```

Tekton Dashboard

Tekton resources

Pipelines

PipelineRuns

PipelineResources

Tasks

ClusterTasks

TaskRuns

EventListeners

Triggers

TriggerBindings

ClusterTriggerBindings

TriggerTemplates

ClusterInterceptors

build-artifact-run-s6mqg

Last updated 11 minutes ago

Succeeded

Tasks Completed: 3 (Failed: 0, Cancelled 0), Skipped: 0

clone-repo

image-build

export-results

create-results

build-artifact-run-s6mqg-export-results

Succeeded

Duration: 40s

Parameters

Results

Status

Pod

Name

Value

artifactId

poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03

artifactName

poc

artifactVersion

v1.0

Tekton Dashboard

Tekton resources

Pipelines

PipelineRuns

PipelineResources

Tasks

ClusterTasks

TaskRuns

EventListeners

Triggers

TriggerBindings

ClusterTriggerBindings

TriggerTemplates

ClusterInterceptors

deploy-artifact-b778m

Last updated 16 hours ago

Succeeded

Tasks Completed: 1 (Failed: 0, Cancelled 0), Skipped: 0

deploy

deploy

ingress

deploy

Completed

Duration: 7s

Logs

Status

Details

ment poc --image localhost:5000/cdevent/poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03

ated

loyment/poc +=localhost:5000/cdevent/poc@sha256:b4e82740850cf316f5ce1ec664c676906500481cf1856d92704e39fb20cdeb03 -n

ment/poc --port 8080 --target-port 80 -n production

Step completed successfully

# References

- [Future of CD Trends by CDF Ambassadors](#)
- Interoperability
  - [CDF](#)
  - [CDF SIG Interoperability](#)
- Events
  - [SIG Events](#)
  - [CD Events Website](#)
  - [CD Events GitHub Org](#)
  - [CloudEvents](#)
  - [Eiffel](#)
  - [Knative](#)
  - [RabbitMQ](#)
- CI/CD Tools
  - [Tekton](#)
  - [Spinnaker](#)
  - [Jenkins](#)
  - [Keptn](#)

# Thank you