

CLOUD NATIVE DEVELOPMENT

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May 17th - Riviera Dev



WHO

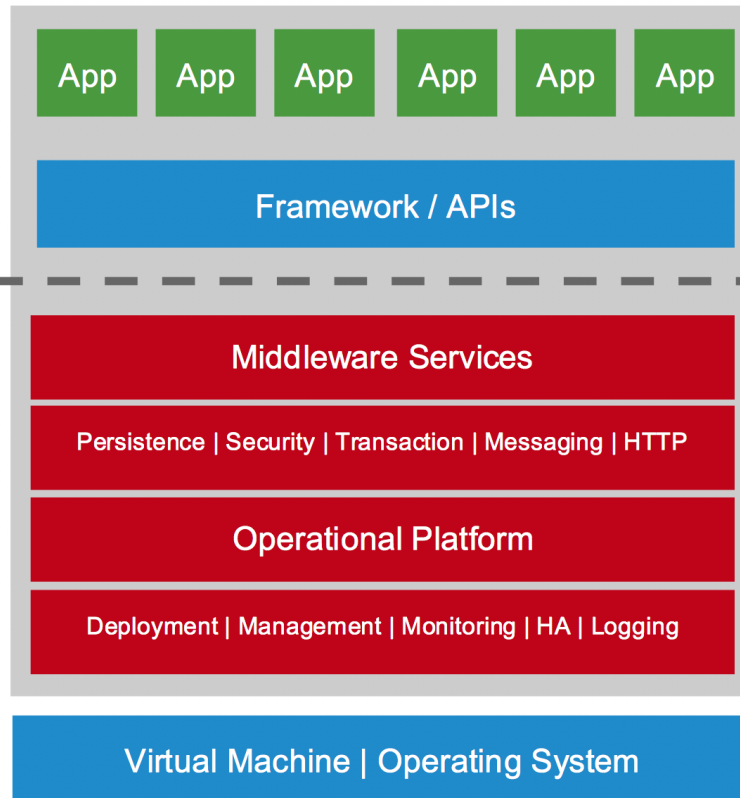
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AGENDA

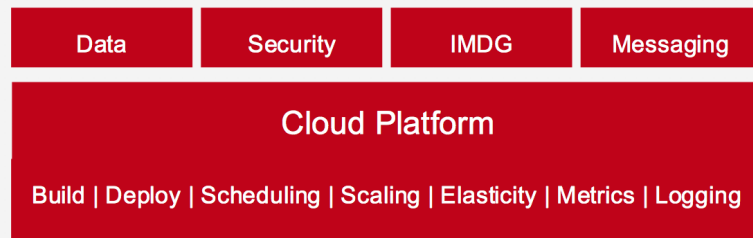
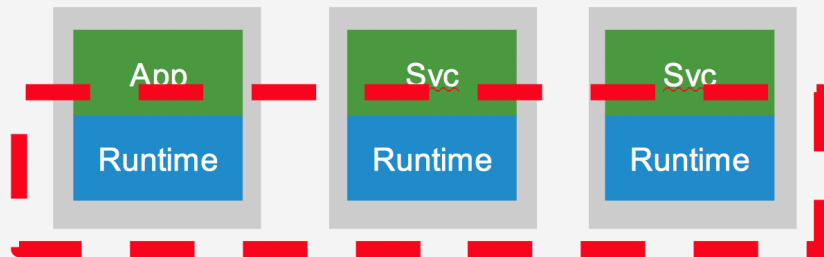
- Cloud Native Development
- Principles
- What do I expect as **C**oder
- Demo time

THE APPSERVER 2000-2014



WHY CLOUD ...

THE APPSERVER 2014-...



DEFINITION - CNCF

“distributed systems capable of scaling to tens of thousands of self healing multi-tenant nodes”

DEFINITION

“Cloud-native is an approach to building and running applications that can leverage the capabilities of the cloud platform”

GOALS

- Scalability
- Speed
- Agility
- Margin (cost)

PRINCIPE - 1

- **Linux Container**
- unit of packaging
- executable
- portable

PRINCIPE - 2

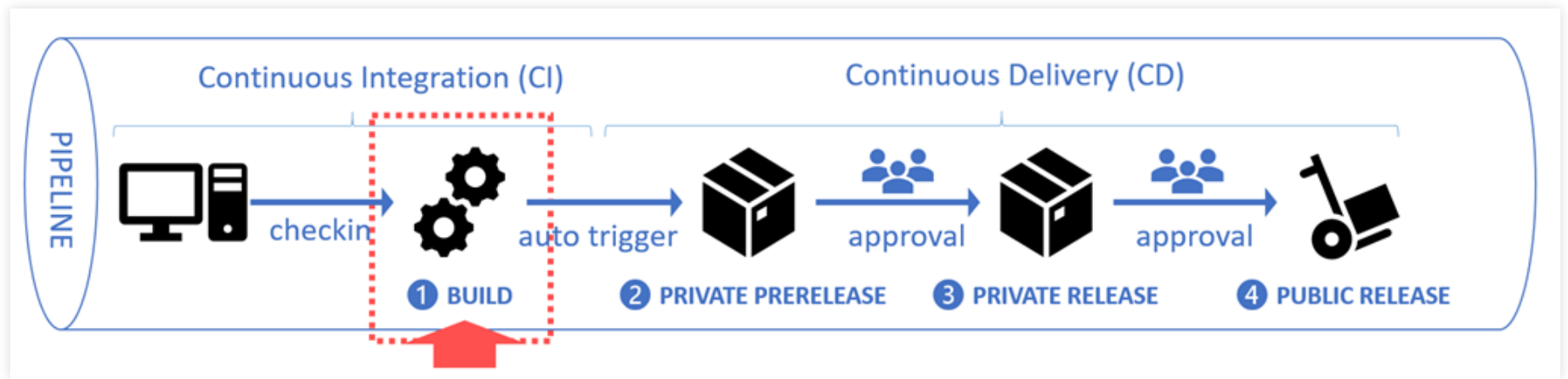
- **MicroService** based Architecture
- Isolation
- Health Check
- Circuit Breaker
- Scalability

PRINCIPE - 3

- Native features
- Access provisioned **MicroServices**
- RBAC & Security
- Consume Services from **Catalog**
- Routing, ACL, A/B testing

PRINCIPE - 4

- **DevOps** : Ci/Cd pipelines to automate the build/deployment process



WHAT DO I EXPECT AS CODER



TOOL - MANAGE

```
dabou@dabou ~$ oc -h  
OpenShift Client
```

This client helps you develop, build, deploy, and run your applications on any OpenShift or Kubernetes compatible platform. It also includes the administrative commands for managing a cluster under the 'adm' subcommand.

Basic Commands:

types	An introduction to concepts and types
login	Log in to a server
new-project	Request a new project
new-app	Create a new application
status	Show an overview of the current project
project	Switch to another project
projects	Display existing projects
explain	Documentation of resources
cluster	Start and stop OpenShift cluster

BUILD - DEPLOY

Build and Deploy Commands:

<code>rollout</code>	Manage a Kubernetes deployment or OpenShift deployment config
<code>rollback</code>	Revert part of an application back to a previous deployment
<code>new-build</code>	Create a new build configuration
<code>start-build</code>	Start a new build
<code>cancel-build</code>	Cancel running, pending, or new builds
<code>import-image</code>	Imports images from a Docker registry
<code>tag</code>	Tag existing images into image streams

TOOLBOX



LAUNCH

Continuous application delivery,
built and deployed on OpenShift.

LAUNCH YOUR PROJECT

Supported Runtimes



WildFly Swarm offers an innovative approach to packaging and running Java EE applications by packaging them with just enough of the server runtime to "java -jar" your application.

[Learn more](#)



Eclipse Vert.x is a tool-kit for building reactive applications on the JVM.

[Learn more](#)



Spring Boot makes it easy to create stand-alone, production-grade Spring based Applications that you can "just run".

[Learn more](#)



Red Hat® Fuse is a lightweight, flexible integration platform that uses Apache Camel at his core.

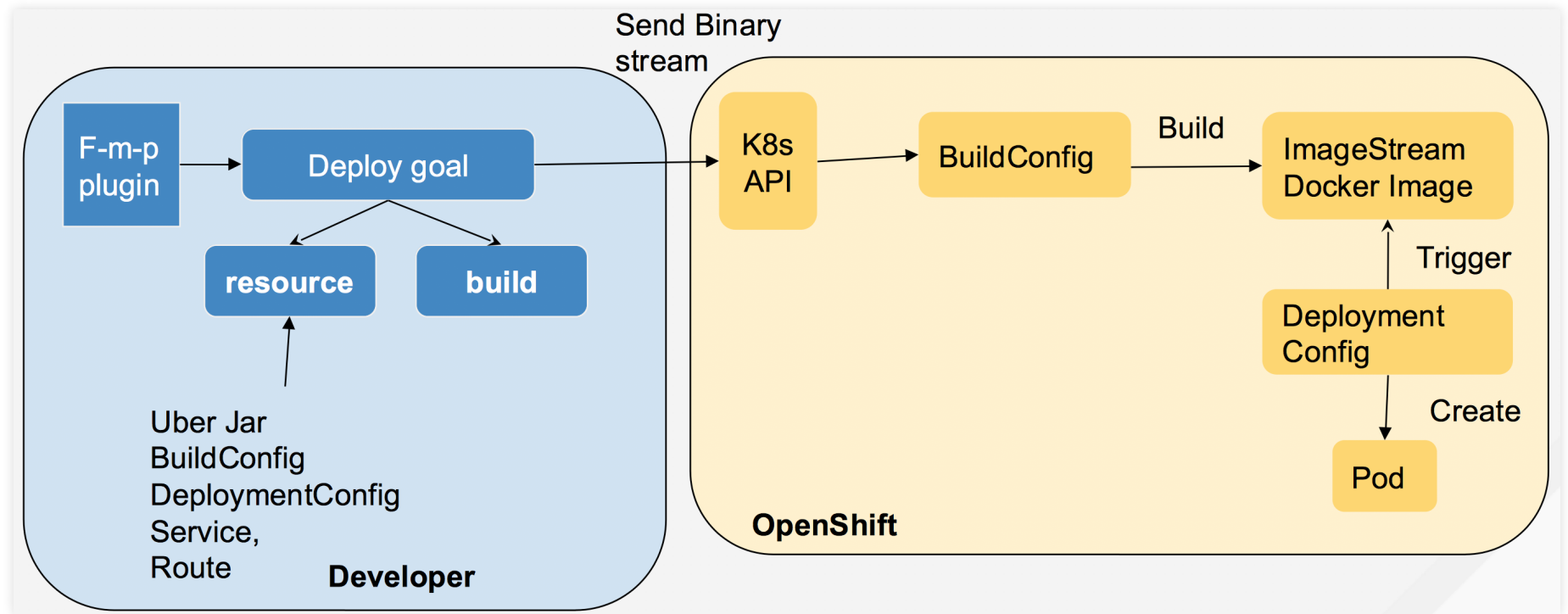
[Learn more](#)



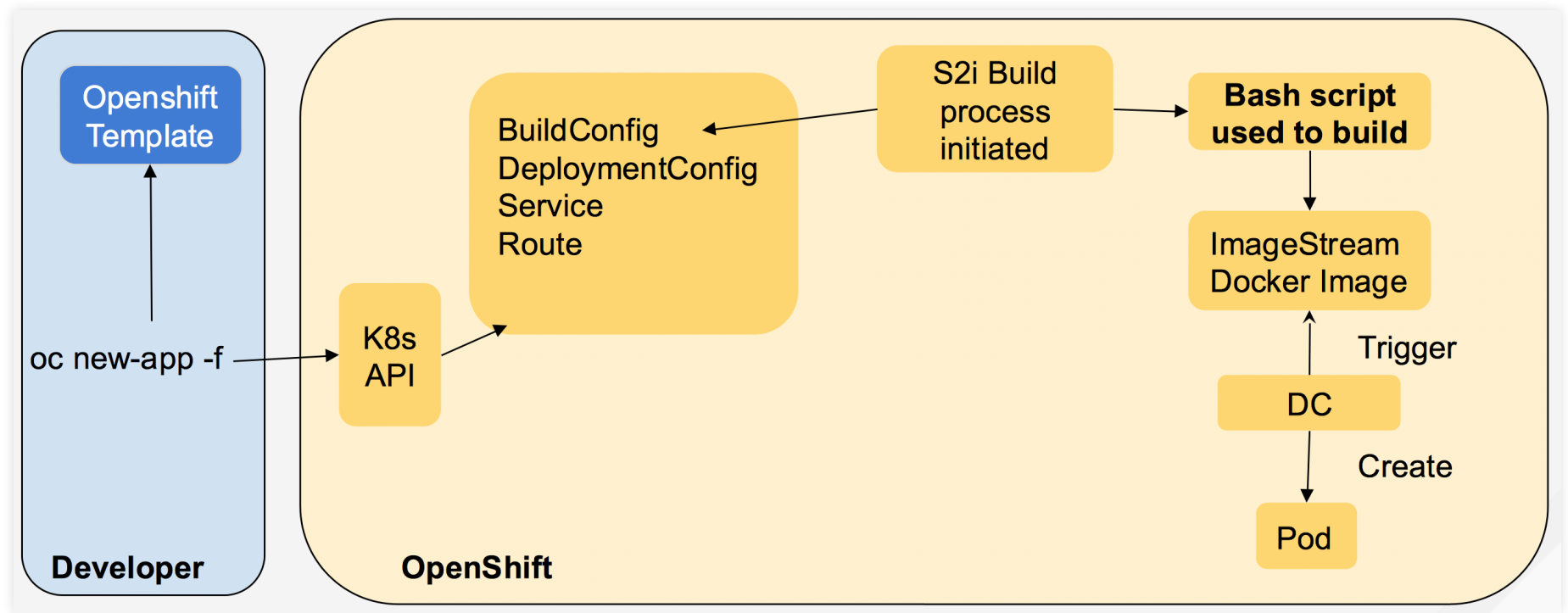
Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient.

[Learn more](#)

AUTOMATE - LOCAL



AUTOMATE - TEMPLATE



AUTOMATE - JENKINS

The screenshot shows the OpenShift Origin Jenkins console interface. The browser address bar indicates the URL <https://195.201.87.126:8443/console/project/user14/browse/pipelines>. The page header displays "OPENSIFT ORIGIN" and the user "user14". The left sidebar contains navigation links: Overview, Applications, Builds (selected), Resources, and Storage. The main content area is titled "Pipelines" and shows a pipeline named "cloud-native-backend-user14" created 16 hours ago. The source repository is <https://github.com/timothyvandenbrande/cloud-native-backend.git>. Under "Recent Runs", "Build #1" is listed as completed 16 hours ago. A progress bar visualizes the build stages: "Test" (17s), "Use appropriate name..." (0s), and "Deploy" (35s), all marked with green checkmarks. At the bottom, links for "View Pipeline Runs" and "Edit Pipeline" are provided.

← → ↻ ⚠ Not Secure | <https://195.201.87.126:8443/console/project/user14/browse/pipelines>

Apps RedHat Internal xpaas-qe maven-kubernetes-j...

OPENSIFT ORIGIN

user14

Overview

Applications

Builds

Resources

Storage

Pipelines [Learn More](#)

[cloud-native-backend-user14](#) created 16 hours ago

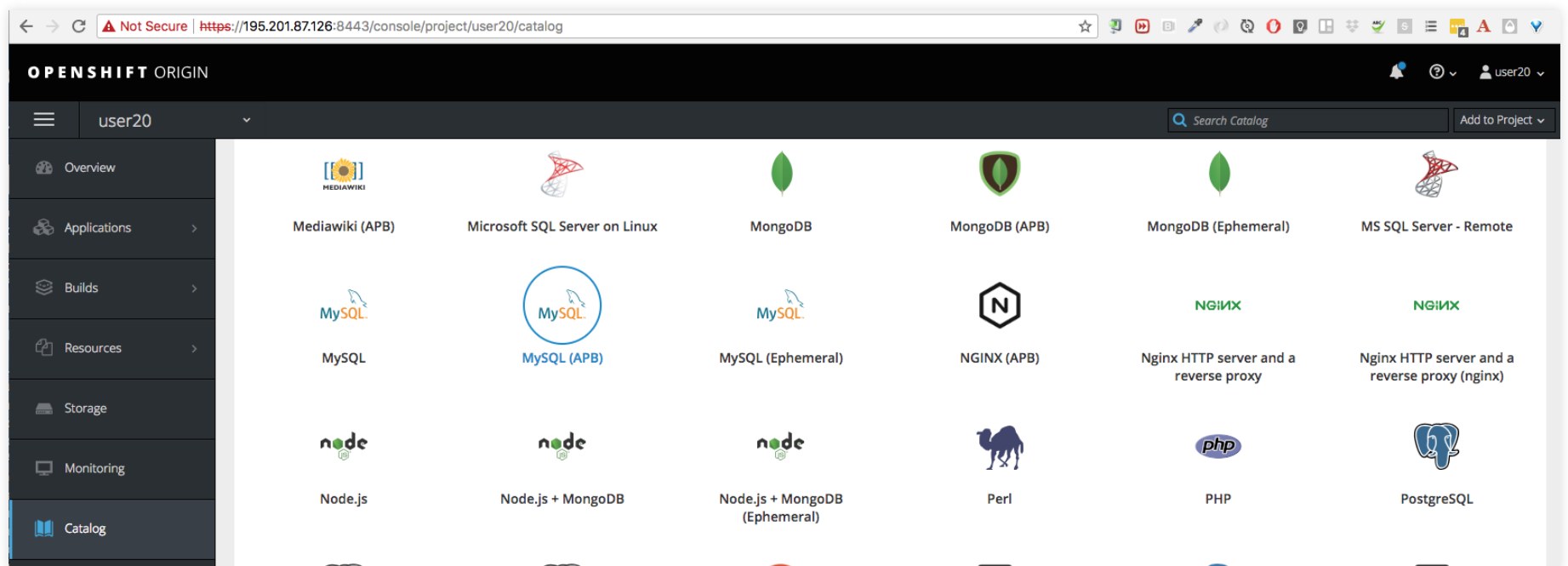
Source Repository: <https://github.com/timothyvandenbrande/cloud-native-backend.git>

Recent Runs

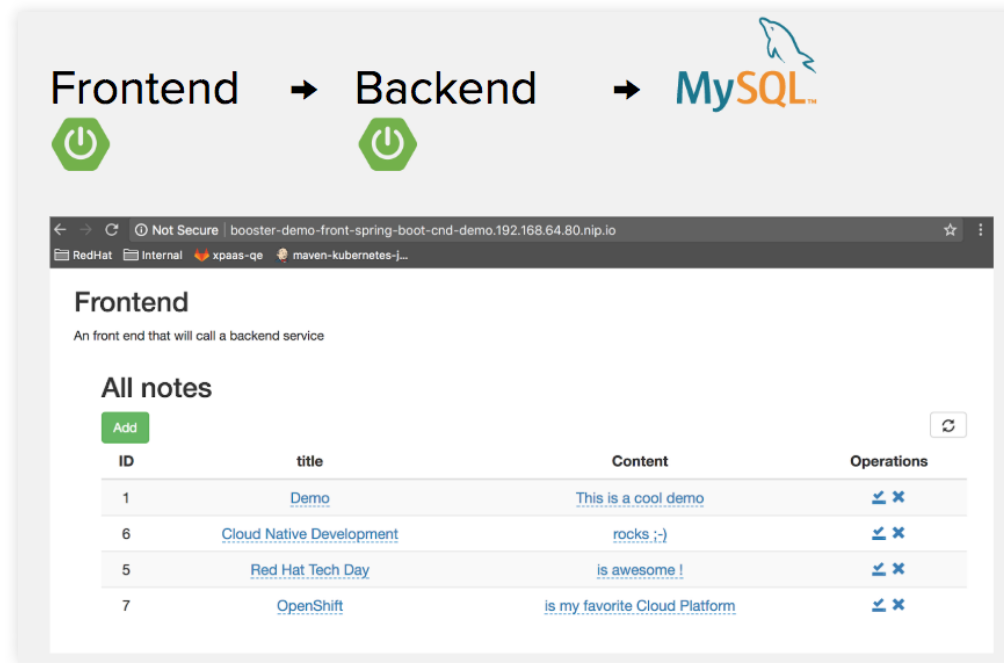
<div>✓ Build #1</div> <div>16 hours ago</div> <div>View Log</div>	<div>Test</div> <div>17s</div>	→	<div>Use appropriate name...</div> <div>0s</div>	→	<div>Deploy</div> <div>35s</div>
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[View Pipeline Runs](#) | [Edit Pipeline](#)

SERVICE CATALOG



DEMO



<https://github.com/snowdrop/cloud-native-lab>