Smooth Sailing with the Keptn Lifecycle Toolkit

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	@ https://github.com/keptn/lifecycle-toolkit
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CLOUD NATIVE COMPUTING FOUNDATION

INCUBATING PROJECT

New Pathways

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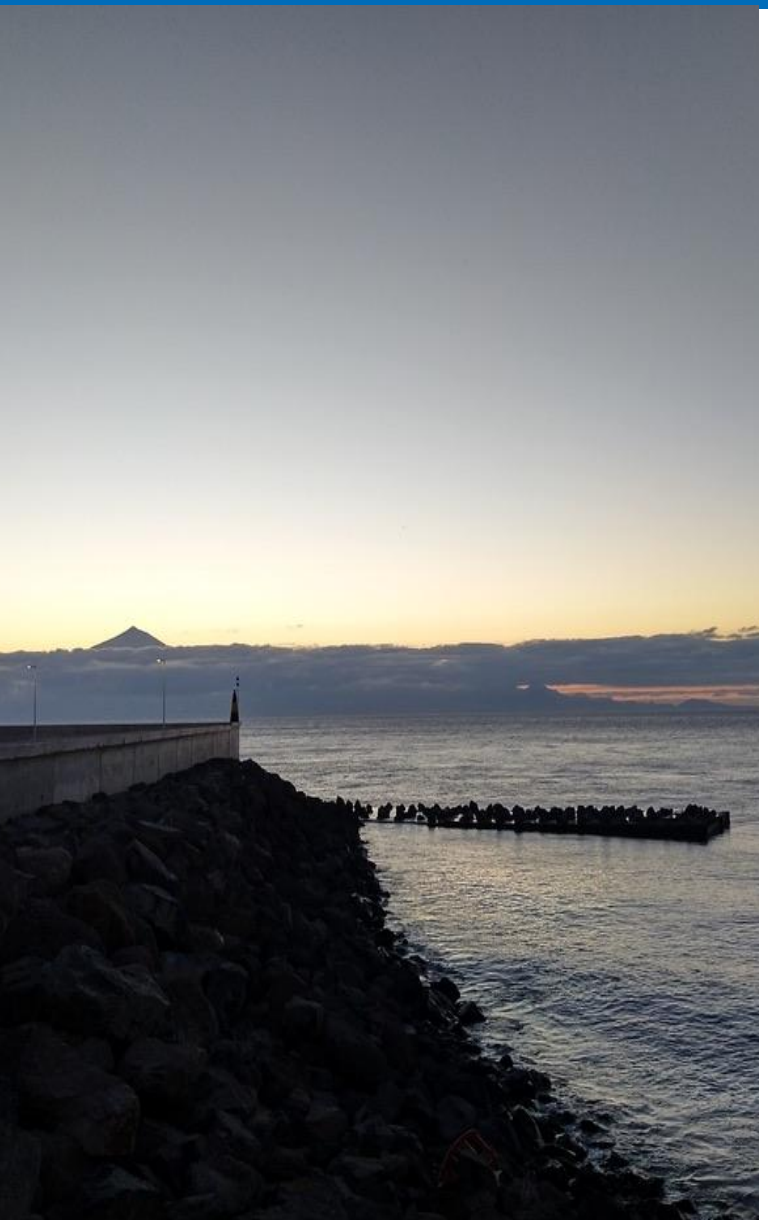

- Kubernetes the leading Platform for Cloud Native Apps
- GitOps is the dominant approach to deliver them
- Keptn standardizes Task Definitions, Evaluations and Application Lifecycle Events
- Keptn shifts your delivery processes to the Platform, cloud-native and pipeline-less

The Keptn Lifecycle Toolkit ensures that your Application Deployment is stable and observable

- cloud-native, application-aware control over your deployments
- deep insights into your deployment process
- easy integration of external tools, control planes
- GitOps-aware, Pipeline-less Delivery
- **with minimal configuration effort**

Built-In Observability

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Metrics

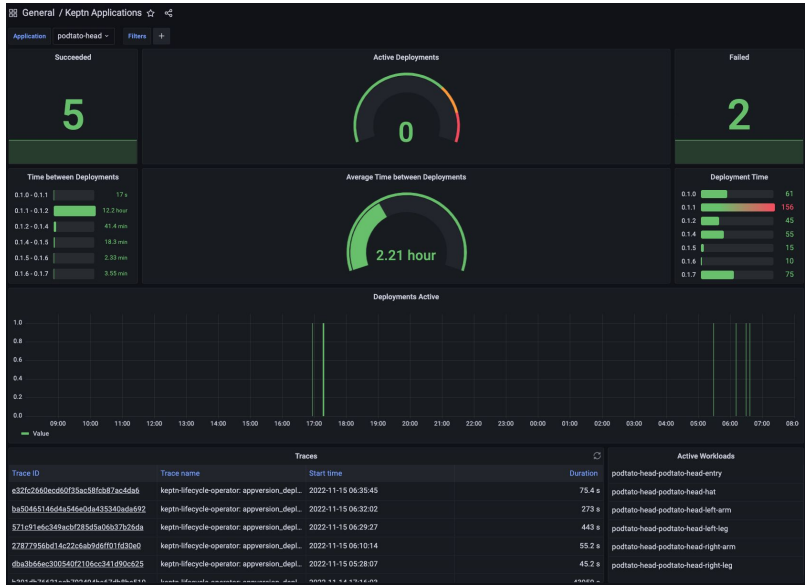
- Success Rate of Deployments
- Velocity related (DORA)
- Current State

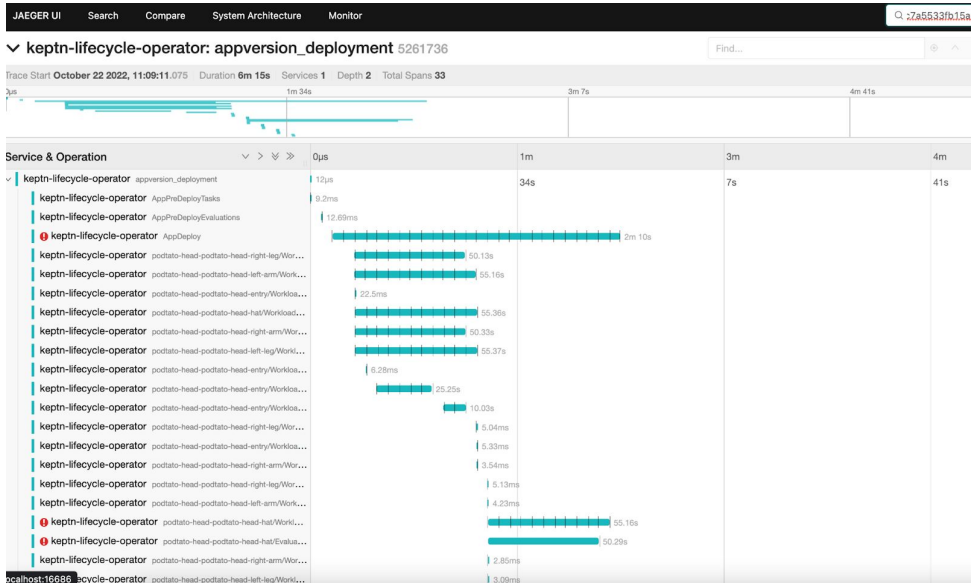
Traces

- Find issues (what is blocking?)
- Which service took how long?
- How long did my evaluations take?

Out-of-the-Box

- Lifecycle Toolkit utilizes recommended labels
- Get observable without touching code





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Pre- & Post-Deployment Tasks and Evaluations

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Pre-Deployment

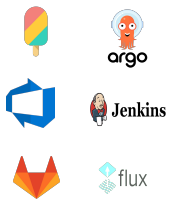
- Check for Error Budgets
- Infrastructure Readiness
- Run preparation Tasks

Extensibility with Custom Functions

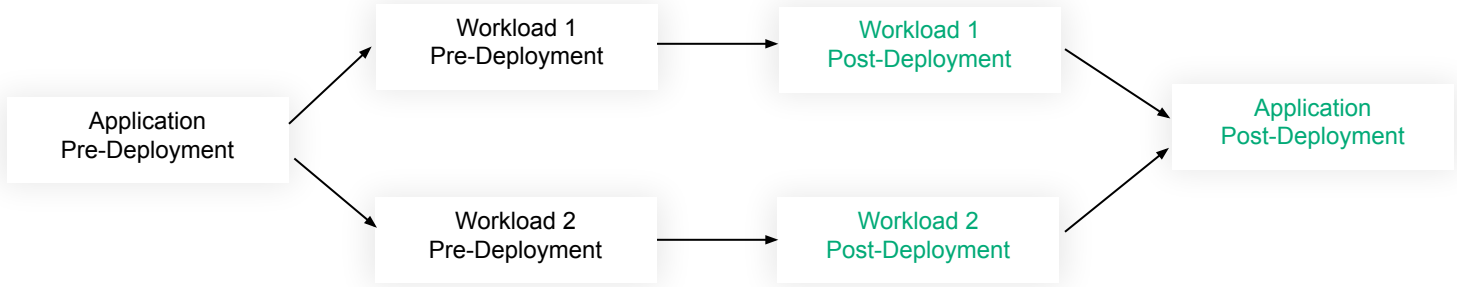
- Bring your own function
- Easy to write and easily shareable
- Without writing operator code

Post-Deployment

- Check for Health Metrics (aka SLOs)
- Run Tests
- Promotion Steps



apply




```
let text = Deno.env.get("DATA");
let data;
data = JSON.parse(text);

try {
   let resp = await fetch(data.url);
}
catch (error){
   console.error("Could not fetch url");
   Deno.exit(1);
}
```

```
apiVersion: lifecycle.keptn.sh/v1alpha1
kind: KeptnEvaluationDefinition
metadata:
 name: postdeploy
 namespace: podtato-kubectl
spec:
 source: prometheus
 objectives:
   - name: available-cpus
     query:
"sum(kube_pod_container_resource_limits{resource='cpu'}) -
sum(kube_node_status_capacity{resource='cpu'})"
     evaluationTarget: "<1"
```

Demo Application

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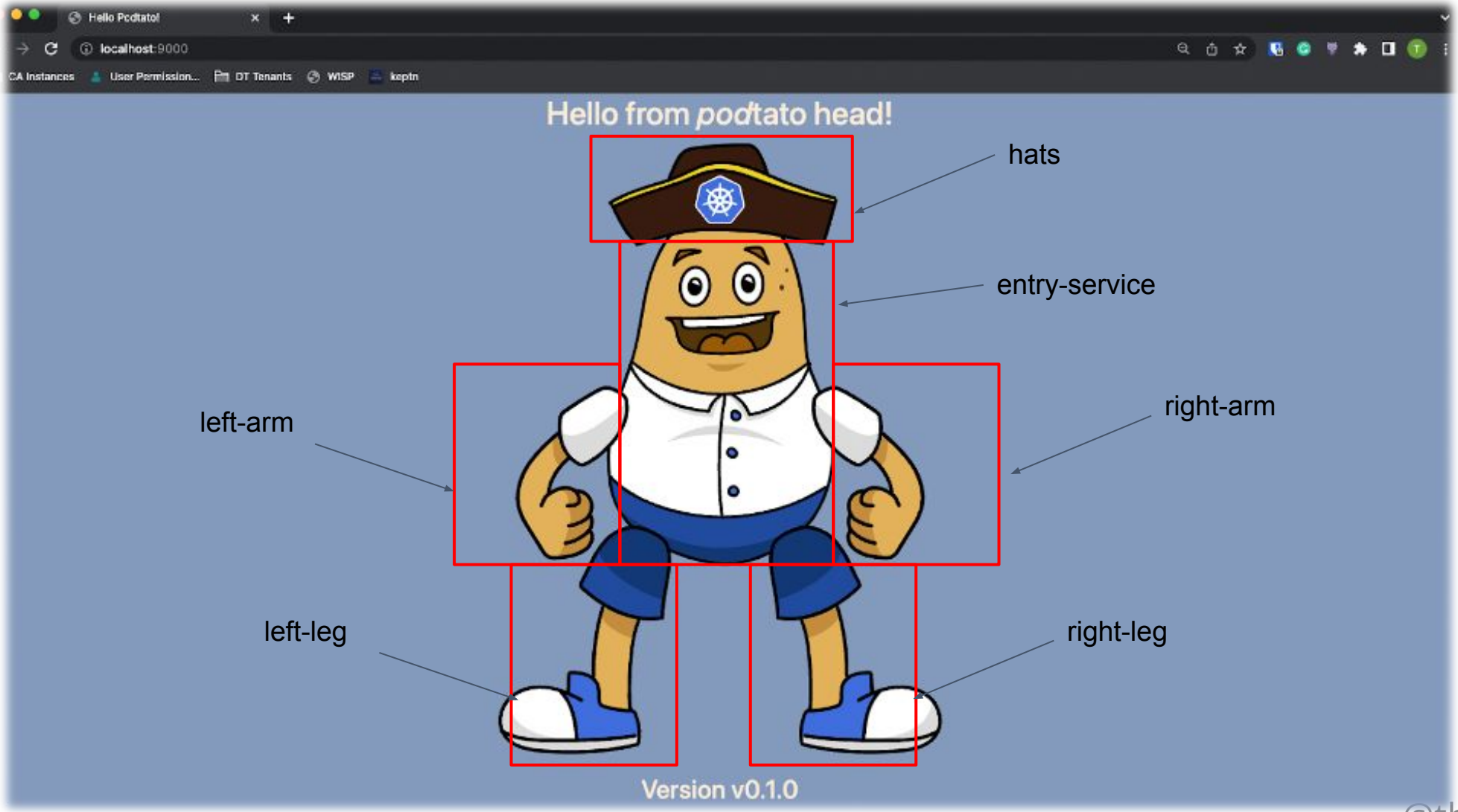

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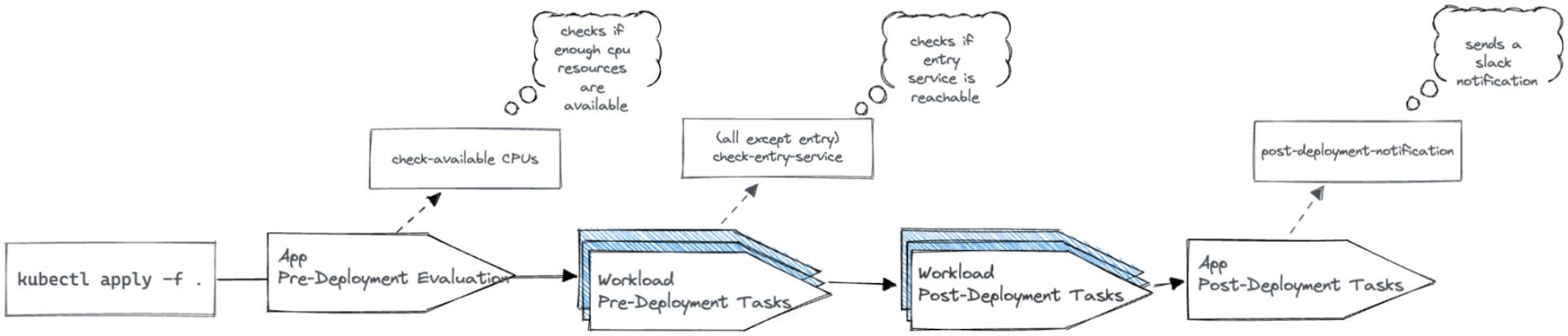
Demonstration



Day 2 Operations

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Application Health

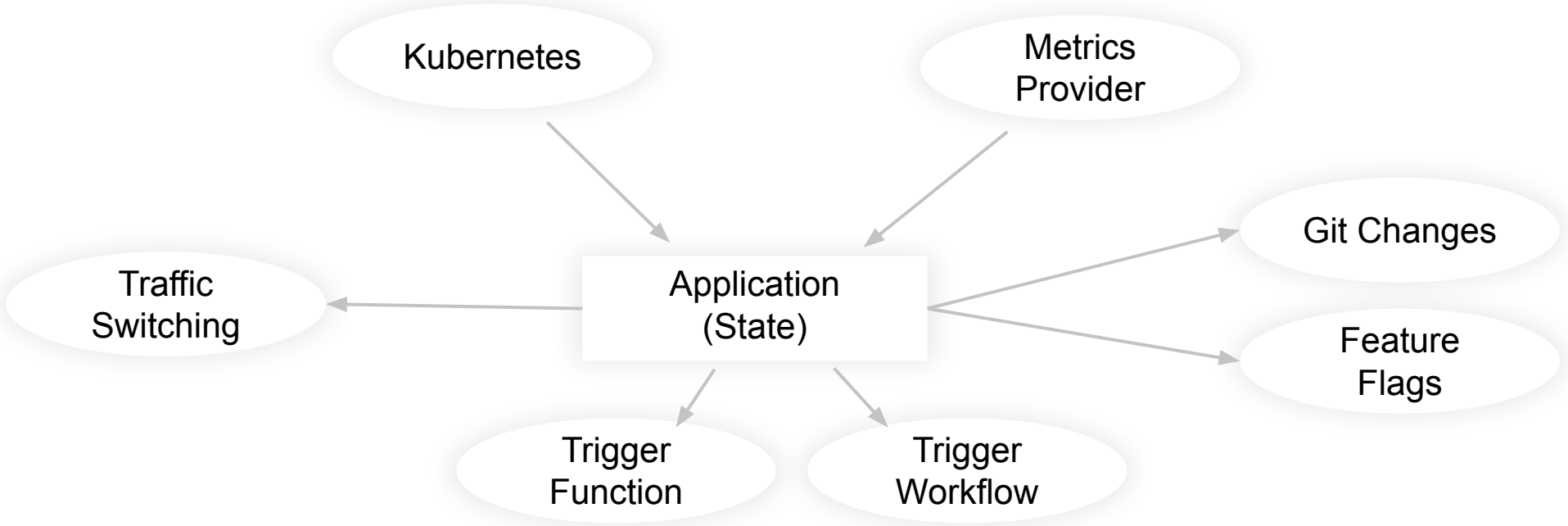
- Internal and external
- Stored in Kubernetes

Actionable State

- Run functions based on events
- Non-opinionated, you decide what should be done

Configuration Changes

- Git Promotions
- Feature Flagging



Recap

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- ✓ Application aware deployment
- ✓ Vendor-neutral observability included
- ✓ Integration of external tools is very easy
- ✓ Easy installation and configuration

Getting in touch

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Links and star us:

- Repository: https://github.com/keptn/lifecycle-toolkit
- App Lifecycle WG: https://github.com/keptn/wg-app-lifecycle

Share your thoughts!

- What would you like to see in Keptn?
- Ping us on the CNCF Slack
- #keptn

Meet the Team and contribute!

- PRs accepted!
- #keptn-lifecycle-controller-dev: Development related discussions

Thank you!

Thomas Schuetz

Keptn Maintainer

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🌐 https://keptn.sh

⭐ https://github.com/keptn/keptn

👫 https://github.com/keptn/community