

Breaking Barriers

Bringing Application Developers Closer to the CNCF

Mauricio Salatino & Thomas Vitale
KubeCon+CloudNativeCon Europe
April 4th, 2025

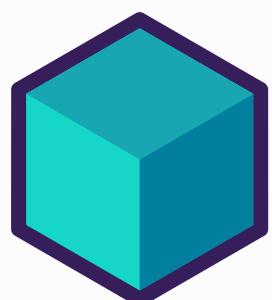


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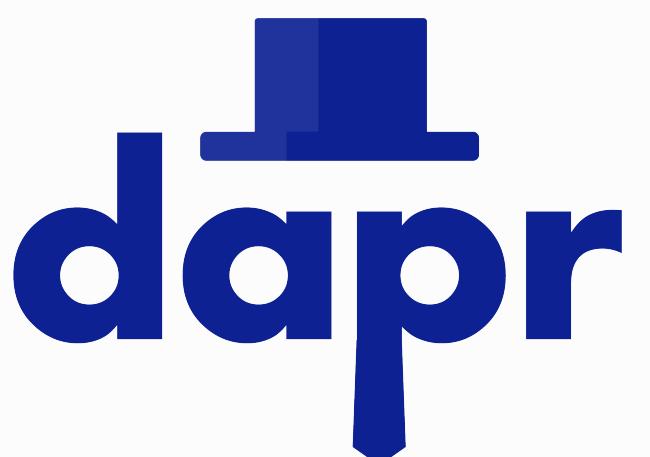
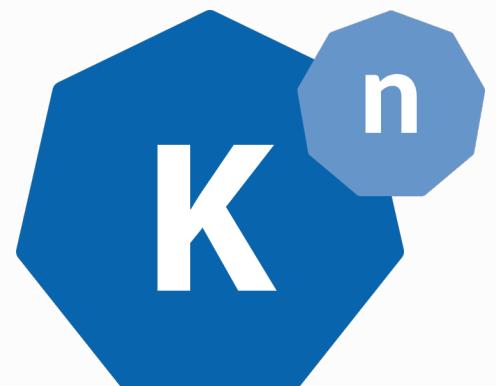
Mauricio Salatino



- Software Engineer and CNCF Ambassador.
- Author of “Platform Engineering on Kubernetes” (Manning).



Testcontainers®



TAG
App Delivery



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Platform Engineering on Kubernetes

Mauricio Salatino



Thomas Vitale

Systematic



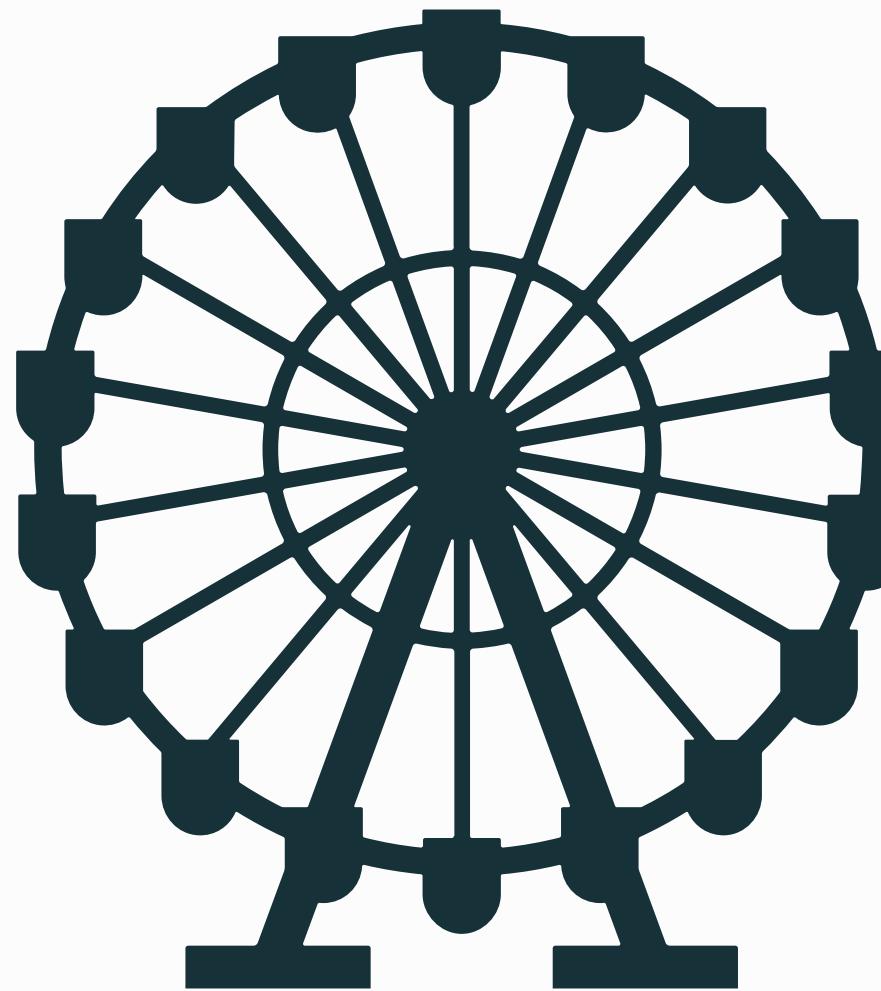
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Cloud Native
Spring
IN ACTION
With Spring Boot and Kubernetes

Thomas Vitale
Foreword by Josh Long

MANNING



Developer Experience on Kubernetes

Mauricio Salatino
Thomas Vitale

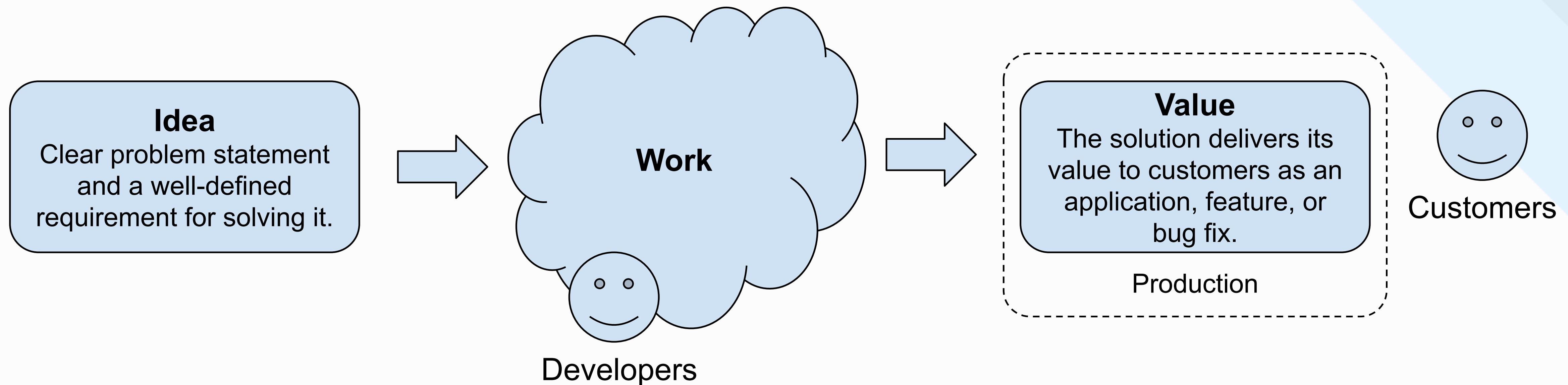
 MANNING



KubeConEU25

Delivering Value

From Idea to Production

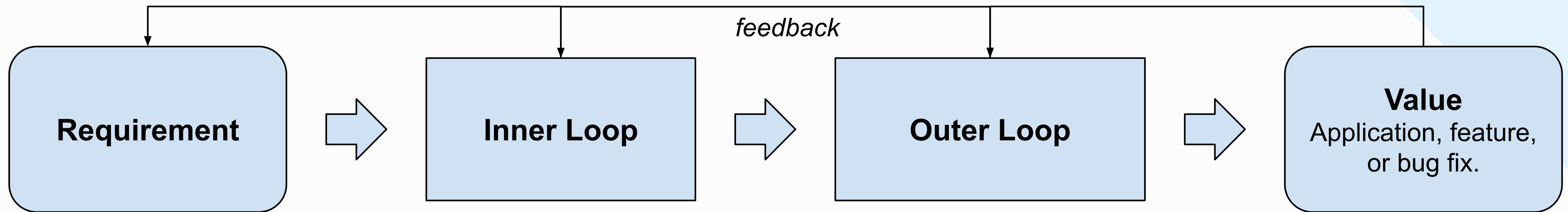


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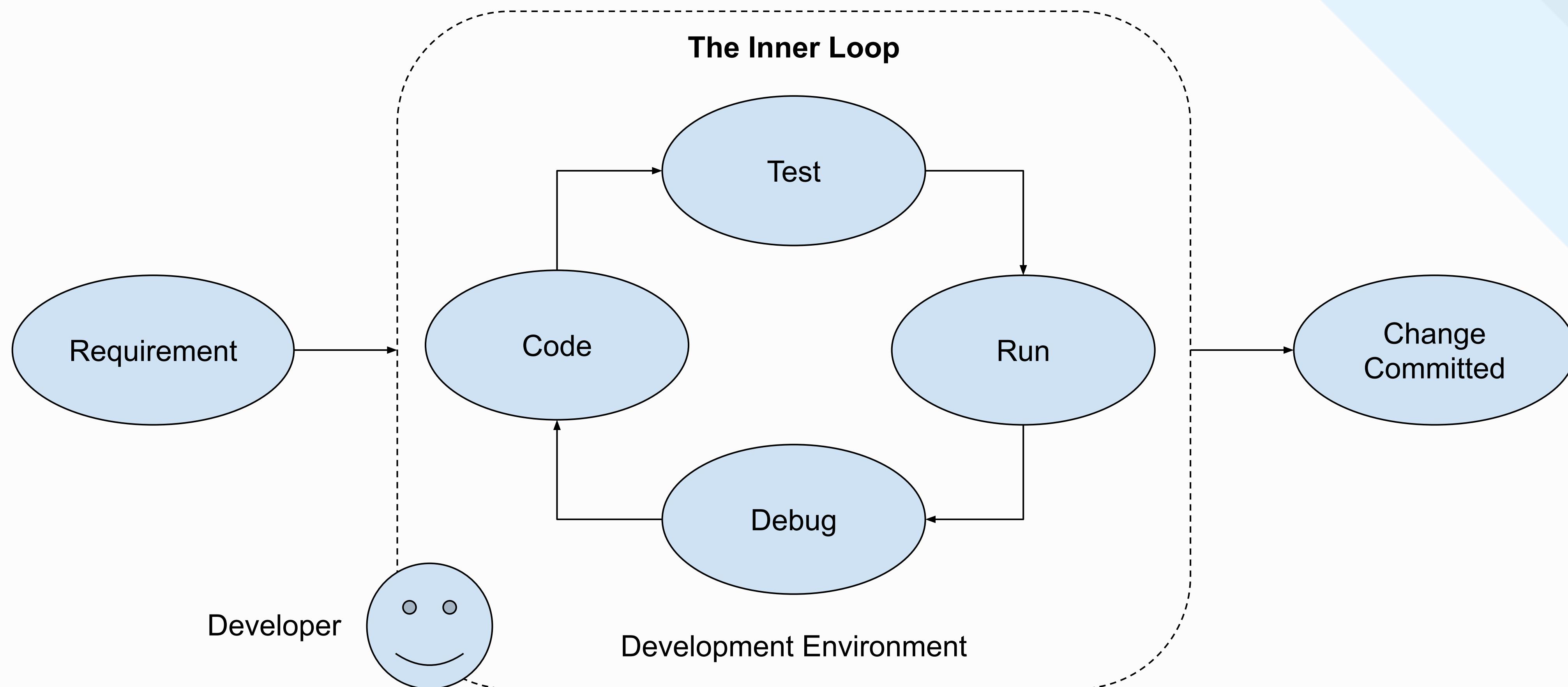
Delivering Value

Inner Loop & Outer Loop



Inner Loop

From Requirement to Change Pushed



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Development Environments

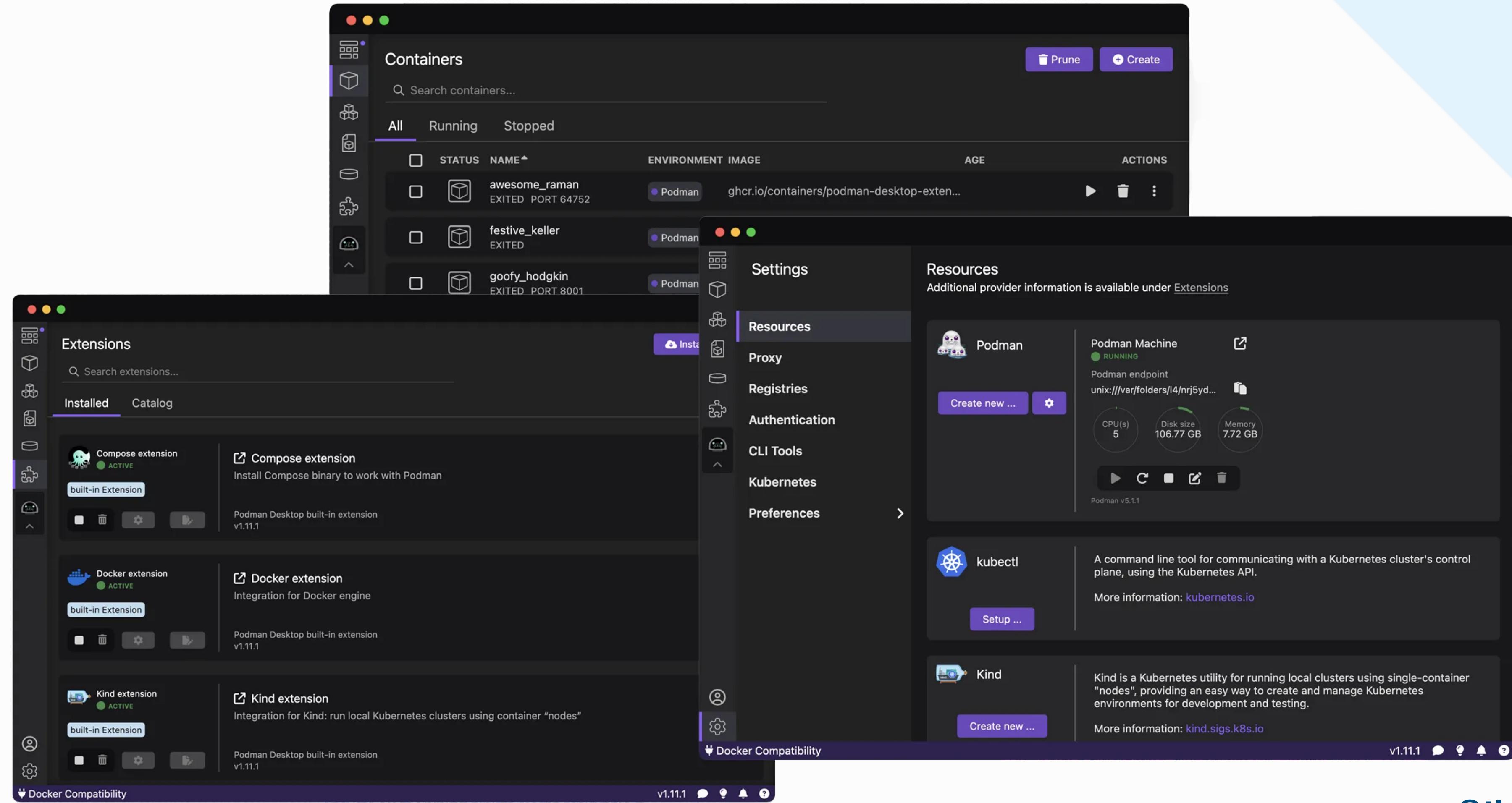
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Podman Desktop

OSS Container Runtime, CNCF Sandbox

podman-desktop.io



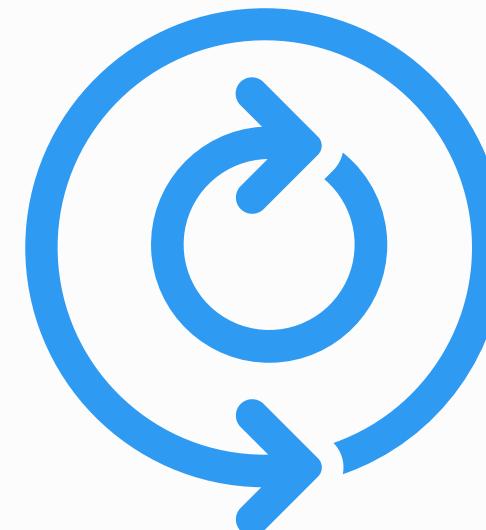
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Development Environments

Portable, Reproducible, Shareable

Development Containers

An open specification for enriching containers with development specific content and settings.



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Spring AI RAG



Spring Boot using Java and Gradle with Spring AI integration to build LLM-powered applications with RAG.

recommended

java

spring

ai

Kadras

CHOOSE

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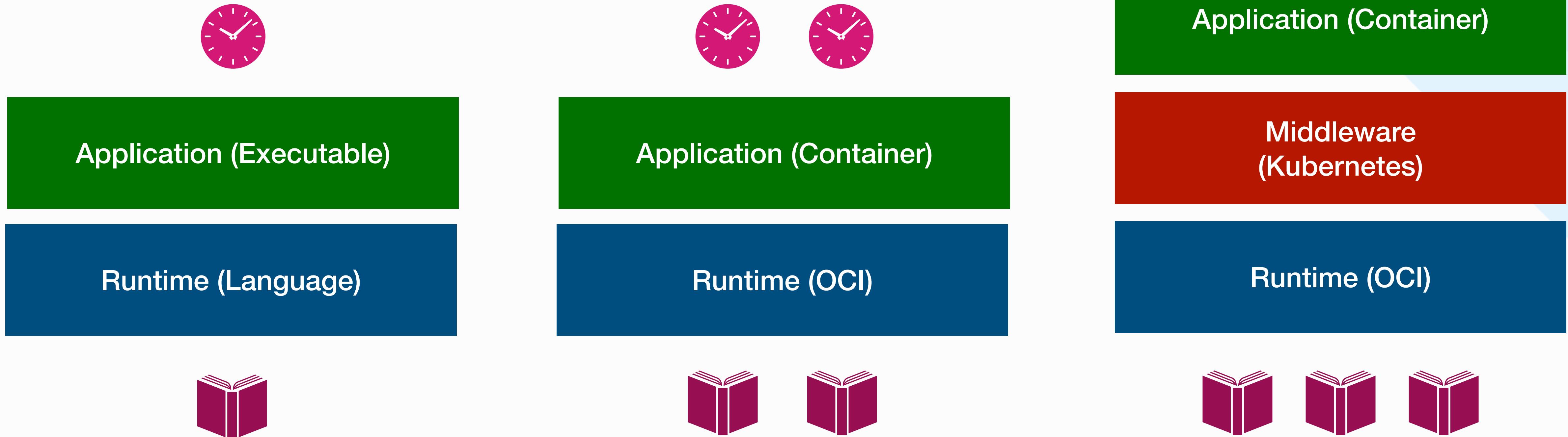
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Inner Loop on Kubernetes

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Cloud Native Applications

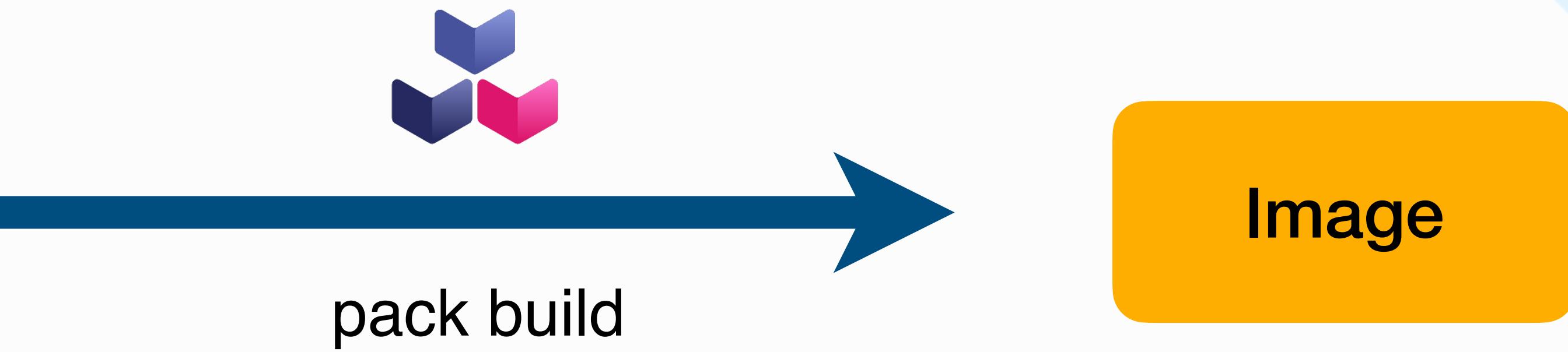


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Cloud Native Buildpacks

From source code to container image

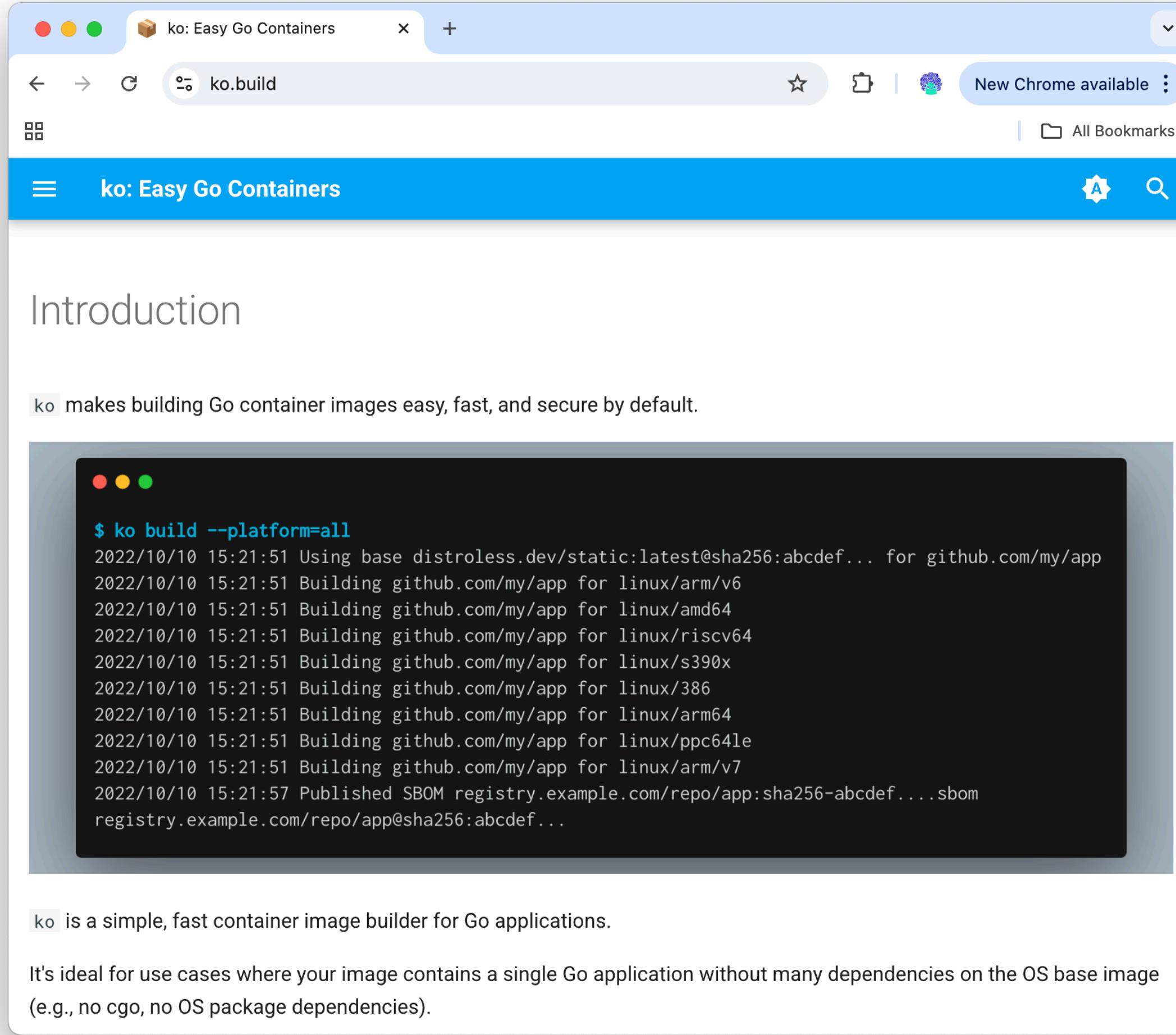


Paketo Buildpacks
paketo.io

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‘Ko’

Containers and Kubernetes fast inner-loops for Go



Ko
ko.build

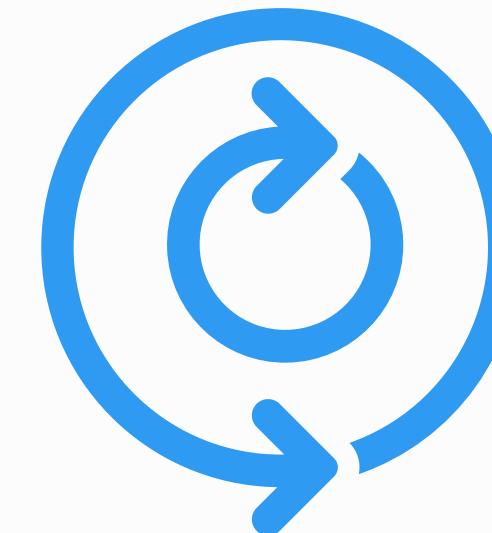
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Automated Development Workflow

Inner Loop on Kubernetes



S K A F F O L D



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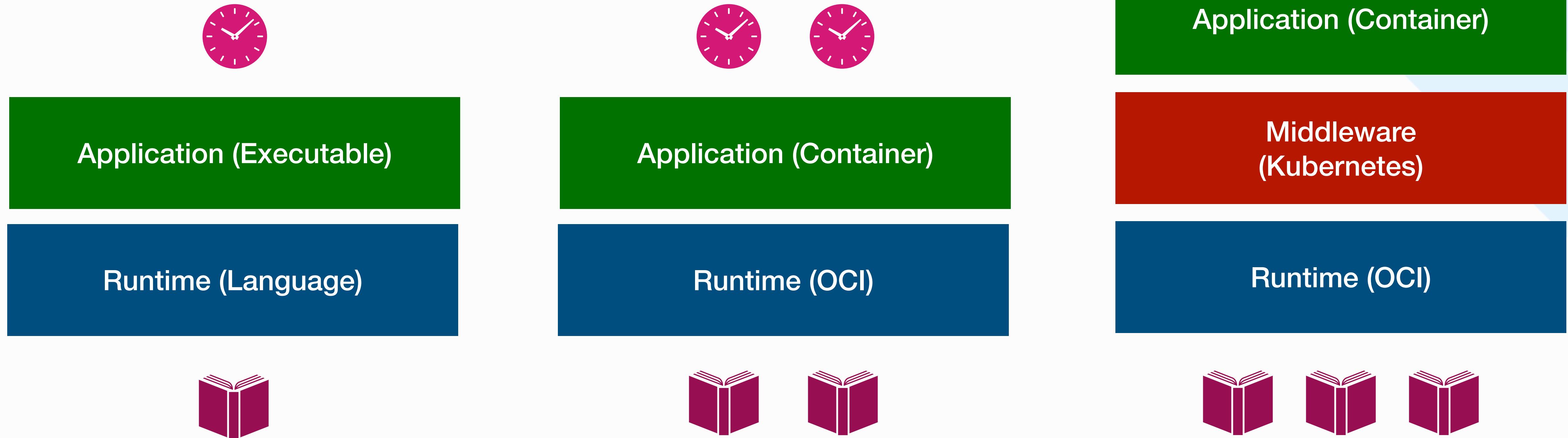
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Inner Loop without Kubernetes

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Moving to Kubernetes



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Kubernetes for Local Development?

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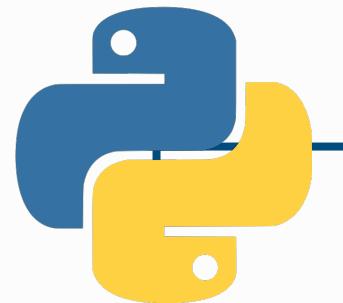
Inner Loop without Kubernetes

Code, Test, Run, Debug

Development Workflow



arconia run

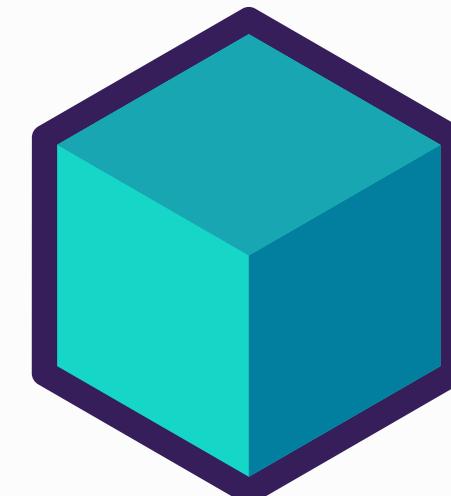


flask --debug run

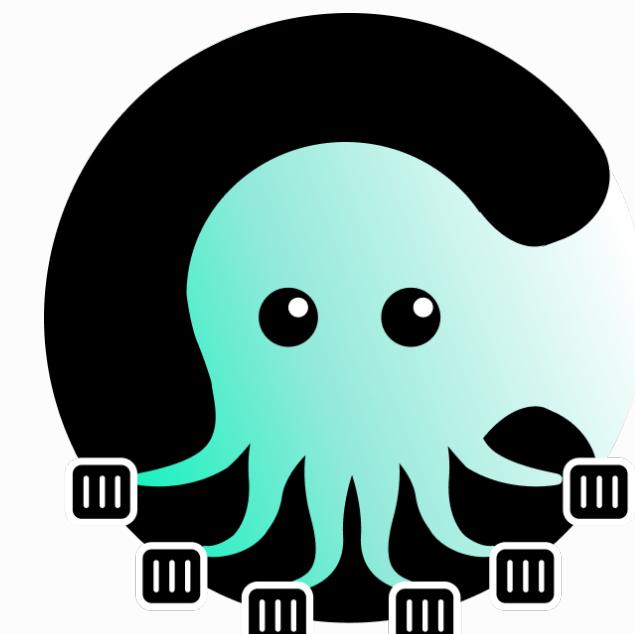
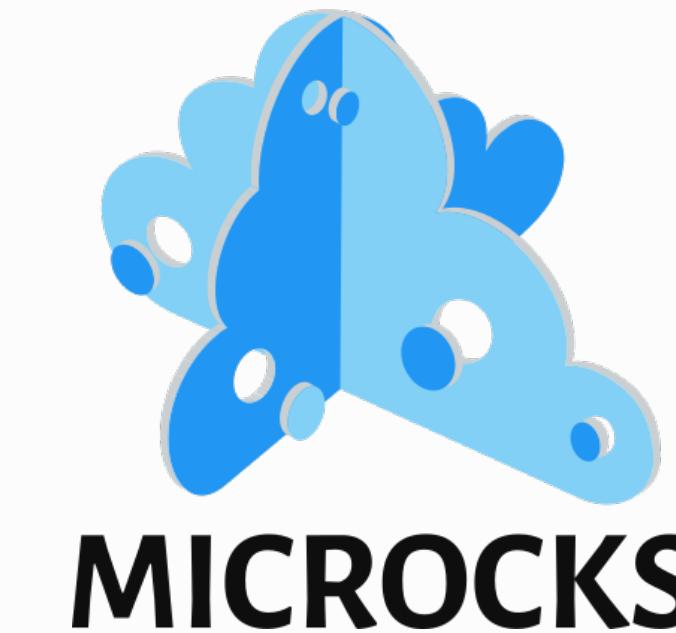


yarn dev

Dev & Test Services



Testcontainers



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Testcontainers

Development and testing



```
with KeycloakContainer() as keycloak:  
    client = keycloak.get_client()
```



```
var rabbit = new RabbitMQContainer("rabbitmq:4.0");  
rabbit.start();
```

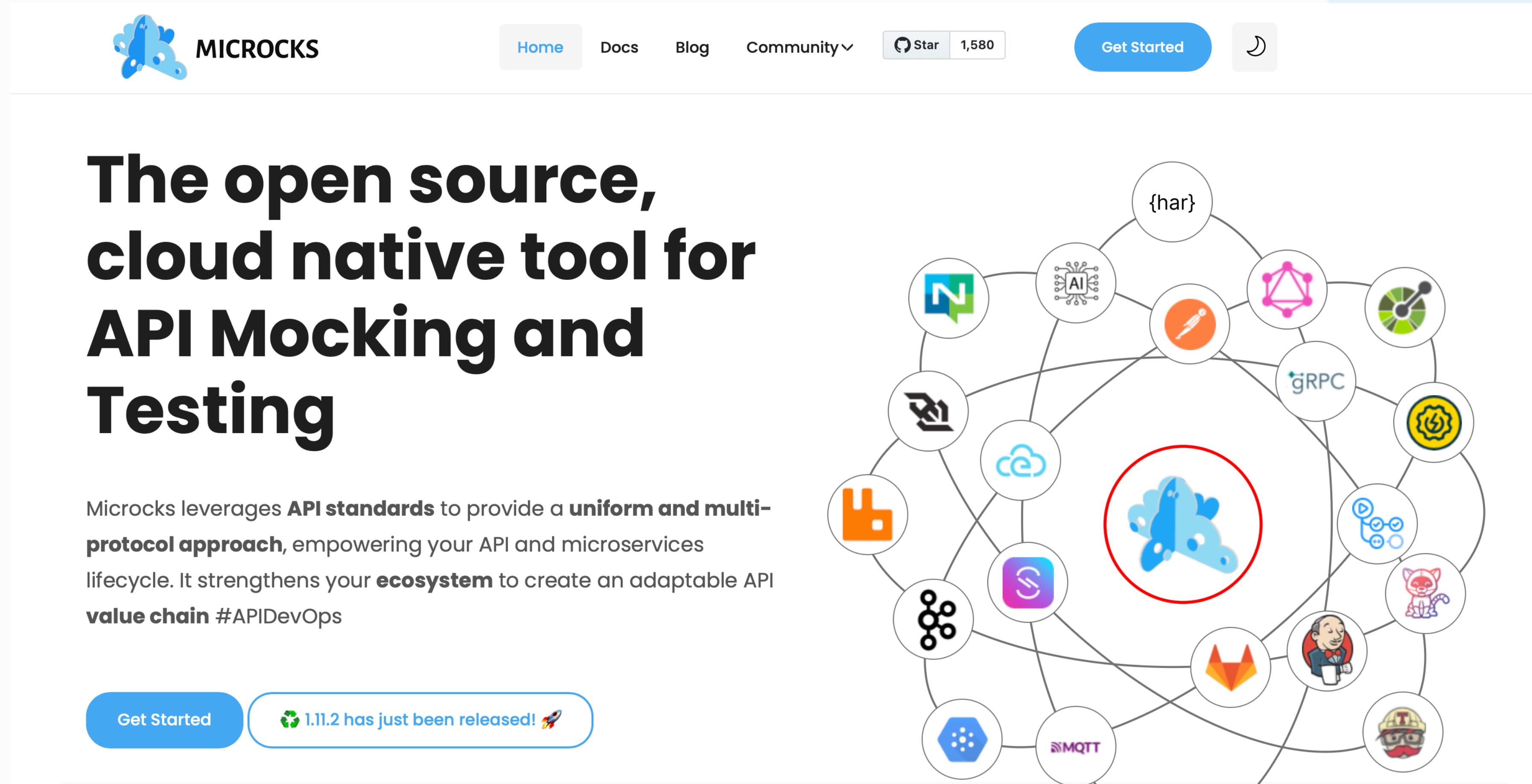


```
postgresContainer, err := postgres.Run(context.Background(),  
    "postgres:17-alpine",  
    postgres.WithDatabase("test"),  
    postgres.WithUsername("user"),  
    postgres.WithPassword("password"),  
)
```



Microcks

API and Contract Testing



The open source, cloud native tool for API Mocking and Testing

Microcks leverages **API standards** to provide a **uniform and multi-protocol approach**, empowering your API and microservices lifecycle. It strengthens your **ecosystem** to create an adaptable API **value chain** #APIDevOps

[Get Started](#) [1.11.2 has just been released! 🚀](#)

Get Started 

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 **MICROCKS**



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Service Integrations

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dapor

The logo consists of the word "dapor" in a bold, dark blue sans-serif font. The letter "p" is stylized with a vertical stem extending downwards and a horizontal bar extending to the left, which also serves as the top of the letter "a". The background features a light blue diagonal stripe in the upper right corner.

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Apps using any language / runtime

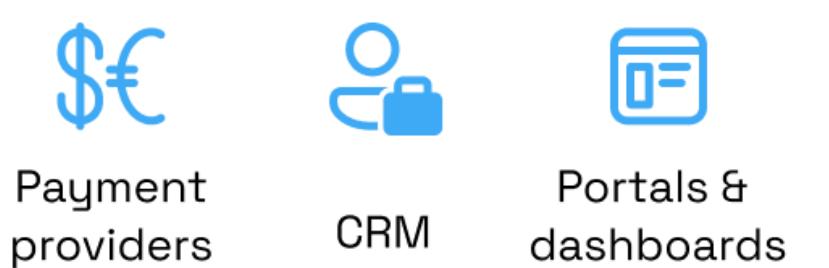


Product teams

Dapr APIs decouple infrastructure services from application code

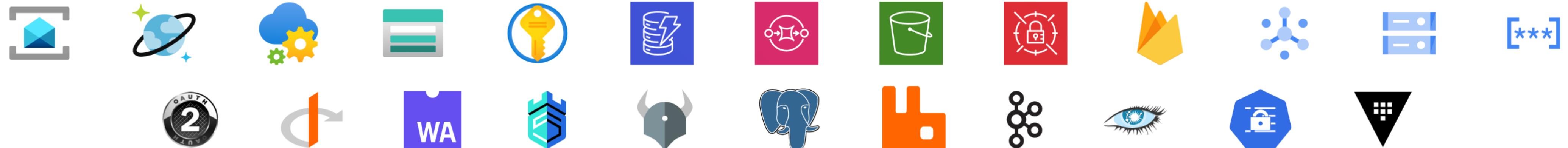


Other APIs & tools



Platform interfaces

Connect with over 120 infrastructure resources & capabilities

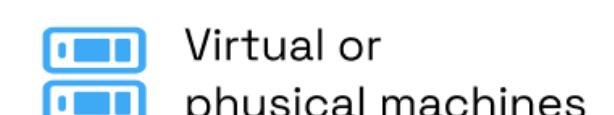


Platform capabilities

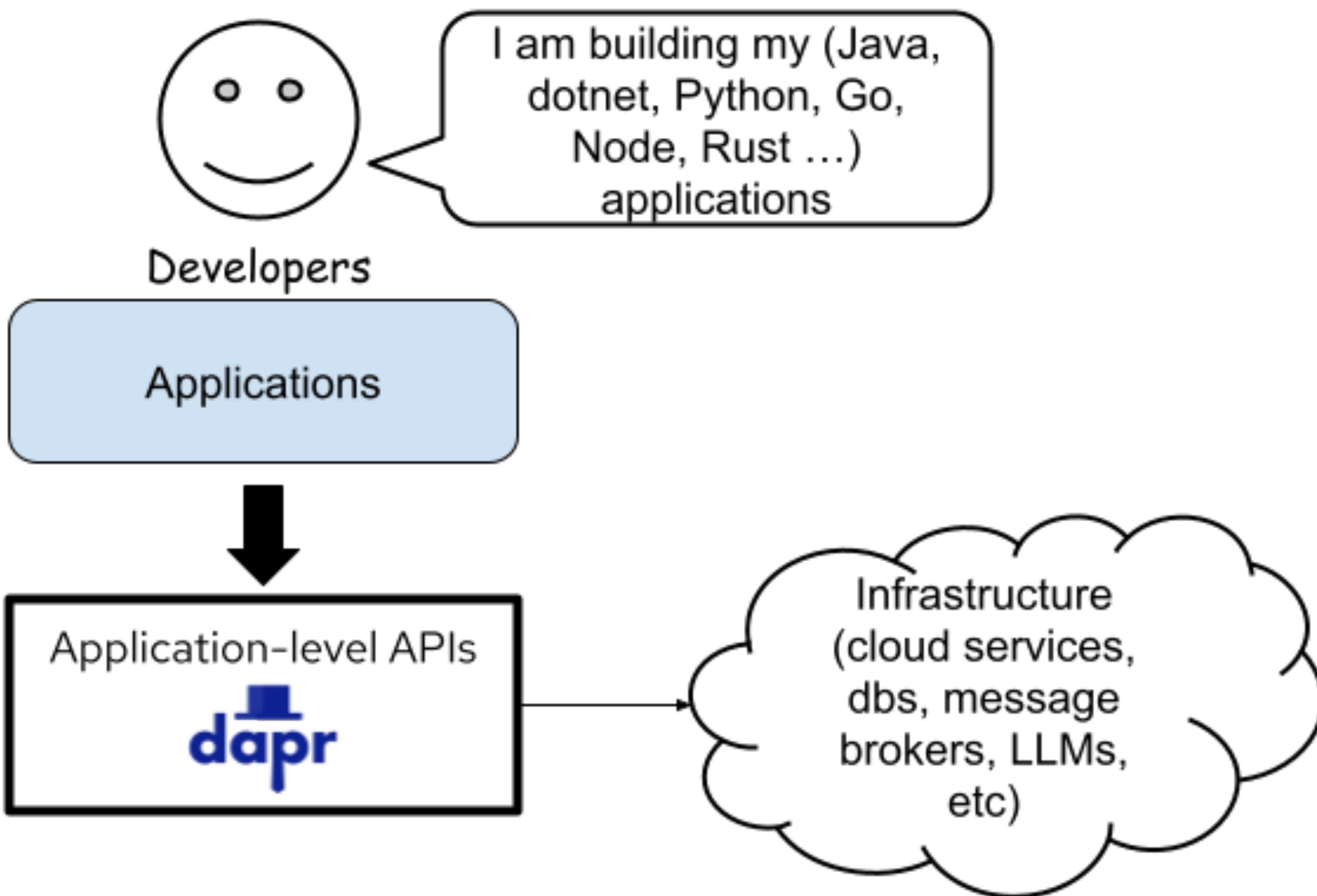
Cloud native integrations include



Run on cloud or edge infrastructure



Infrastructure resources and service providers





Developers

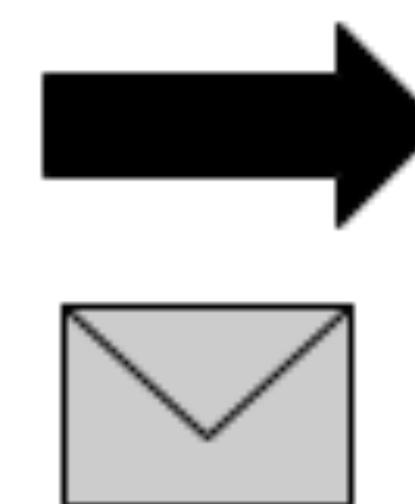
Cool.. now what? Do I need to learn about how Kafka works? Just to send messages between services? How do I connect to Kafka and make it secure and reliable?

Appointments Service

`publishEvent(e)`



Kafka



Front Desk Service

`consume(e)`



```
void emitEvent(Event event) {  
    daprClient.publishEvent(PUB_SUB_NAME,  
        PUB_SUB_TOPIC,  
        event).block();  
}
```



```
if err := daprClient.PublishEvent(ctx, PUBSUB_NAME, PUBSUB_TOPIC_NAME, eventJson); err != nil {  
    respondWithJSON(w, http.StatusInternalServerError, err)  
    return  
}
```



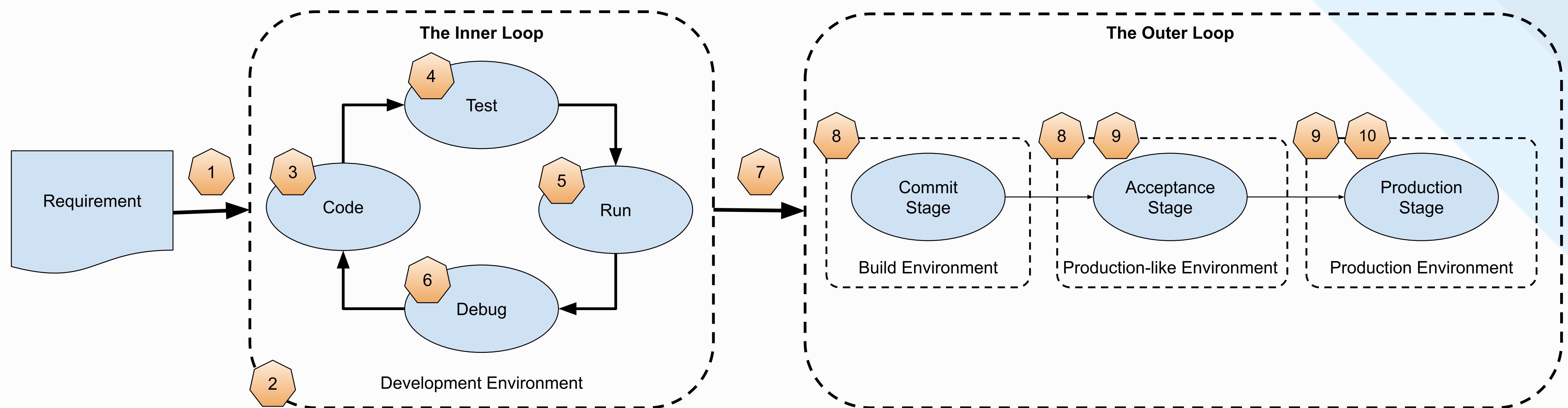
Developer Experience

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Developer Experience

The 10 Friction Points of Developer Experience



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Application Developer's View? CNCF Landscape

The screenshot shows the Cloud Native Landscape interface. At the top, there are navigation links: CLOUD NATIVE LANDSCAPE, EXPLORE (underlined), GUIDE, and STATS. A search bar with placeholder text "Type / to search items" and a magnifying glass icon is also at the top. Below the navigation, there are filter buttons for Filters (selected), GROUP: Projects and products, Members, Certified partners and providers, Serverless, Wasm, and CNAI. View mode is set to Grid, and zoom controls (-, +) are available. The main area is divided into two sections: Application Definition & Image Build (left) and Continuous Integration & Delivery (right). The Application section contains logos for dapr, HELM, ArtifactHUB, Backstage, Buildpacks.io, KubeVela, KubeVirt, OPERATOR FRAMEWORK, Devfile.io, DevSpace, CHEF HABITAT, CLACE, KubePlus, Coder, codezero, Cyclops, Daytona, DeployHub, Gradle, itopia, JReleaser, Kaniko, Kapeta, ko, KONVEYOR, kots, KRATOR, KUBERMATIC, KubeDiagrams, KubeOrbit, Kudo, Kui_, lagoon, mia Platform, MICROKS, mirror, MONKLE, Nocalhost, okteto, Open Application Model, OPENAPI INITIATIVE, Packer, podman, Porter, QUARKUS, redius, raftt, Rig.dev, SCORE, sealer, ServiceComb, SHIPWRIGHT, SKAFFOLD, squash, Tanka, TILT, vmware Application Catalog, Walrus, Yoke_. The Continuous Integration section contains logos for argo, flux, keptn, OpenKruise, agola, AKUITY, AppVeyor, AWS CodePipeline, Azure Pipelines, Bamboo, BRIGADE, bunnyshell, Bytebase, CARTOGRAPHER, circleci, Skycap, CloudBees, codefresh, Concourse, D2 IQ, Dispatch, devtron, flagger, GitHub Actions, GitLab, gitness, go, Google Cloud Build, harness, hyscale, Jenkins, JENKINS X, k6, Keploy, Liquibase, Mergify, Northflank, Octopus Deploy, OpenGitOps, OpsMx, ozone, PipeCD, Razee, Screwdriver.cd, semaphore, spacelift, Spinnaker, TeamCity, terramate, TESTKUBE, Travis CI, unleash, werf, and kube-burner.

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New Track at KubeCon+CloudNativeCon

All About Application Development



- > **Application Development** – This track focuses on the latest practices in cloud native application development and optimizing the developer experience. Designed for software developers, cloud-native architects, and creators of developer-centric tools, it offers in-depth insights into architecting, coding, testing, and building scalable cloud-native applications. Attendees will explore best practices, architectural patterns, and cutting-edge tools from CNCF projects that streamline the development of complex distributed systems. This track emphasizes strategies for improving developer productivity, simplifying workflows, and enhancing the overall software creation process through innovative tooling and seamless integration of cloud native technologies.

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