



From Code To Production

How Developer Tools Give You Velocity!

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Developer Tools Strategy at Red Hat

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Natale Vinto

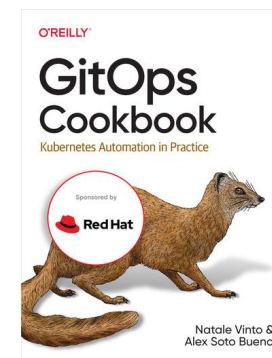
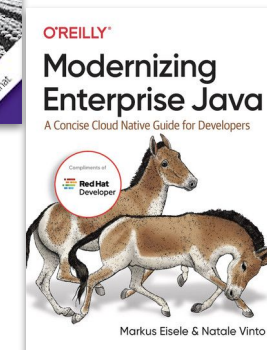
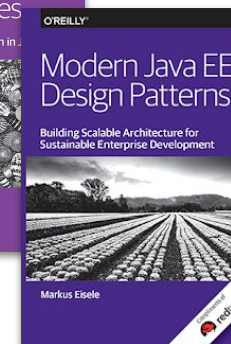
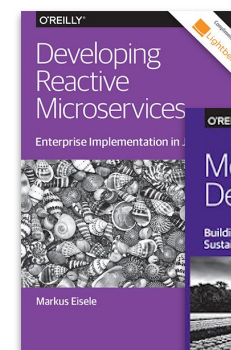
Developer Advocate Lead at Red Hat

CD Foundation Ambassador 2023

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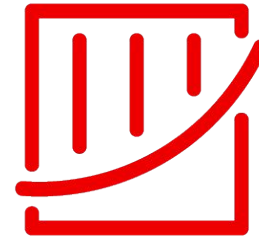


Developer Happiness is key to productivity!



100x

Cost reduction for
operating infrastructure

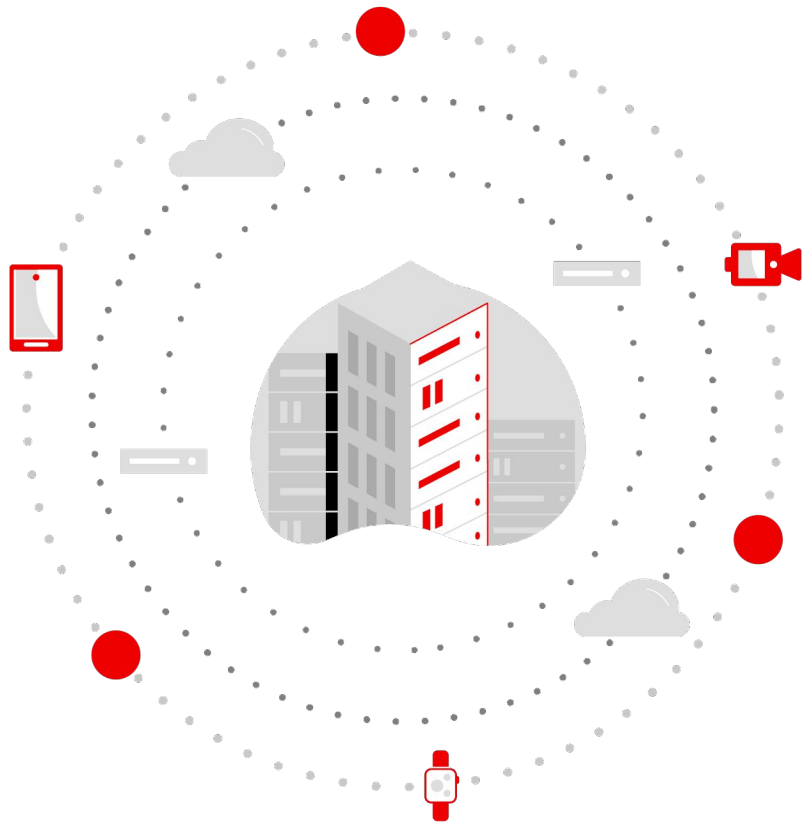


5x

Faster revenue growth attributed
to enabling developer velocity¹



Every organization is
facing a decision
about its **future**.



What you build **today**
determines what is
possible **tomorrow.**

Creating value depends on your ability to deliver applications faster

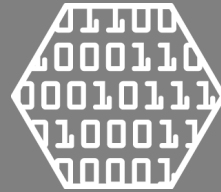
Cloud-native applications



AI & machine learning



Analytics



Internet of Things



Innovation culture



Open source is the
innovation engine
for the industry.

Example of Upstream dynamics: **Kubernetes** velocity

1.64M

Lines of code

3,696

Committers

35

Changes per day

Over three years and 12 significant releases, 68% of the code has changed.



WALL OF CONFUSION





People, process,
technology.
And **cohesive platform.**



“A **digital platform** is a foundation of self-service APIs, tools, services, knowledge and support which are arranged as a compelling internal product.”

Evan Bottcher - 2018

Portal
Golden Path Templates
DevX: Collaboration, Tutorials, Videos, Slack
Developer Environments
DBaaS, Kafka-as-a-Service, Cache-as-a-Service, SSO-as-a-Service, etc
CLI (kubectl, helm, git, oc), API
Observability (Ops/SRE view, Dev view, AppOps view, PE view)
Continuous Delivery
Artifact Storage
Security: Runtime scanning, build-time scanners
Continuous Integration Engine & Task Runners
Artifact Builder, Image Builder
Source Control
AuthN/AuthZ/RBAC
Compute/Network/Storage, Namespace-as-a-Service/Cluster-as-a-Service, Configuration Management



Simon Martinelli

@simas_ch



Fully agree! It's not the developers job to take care of the platform.



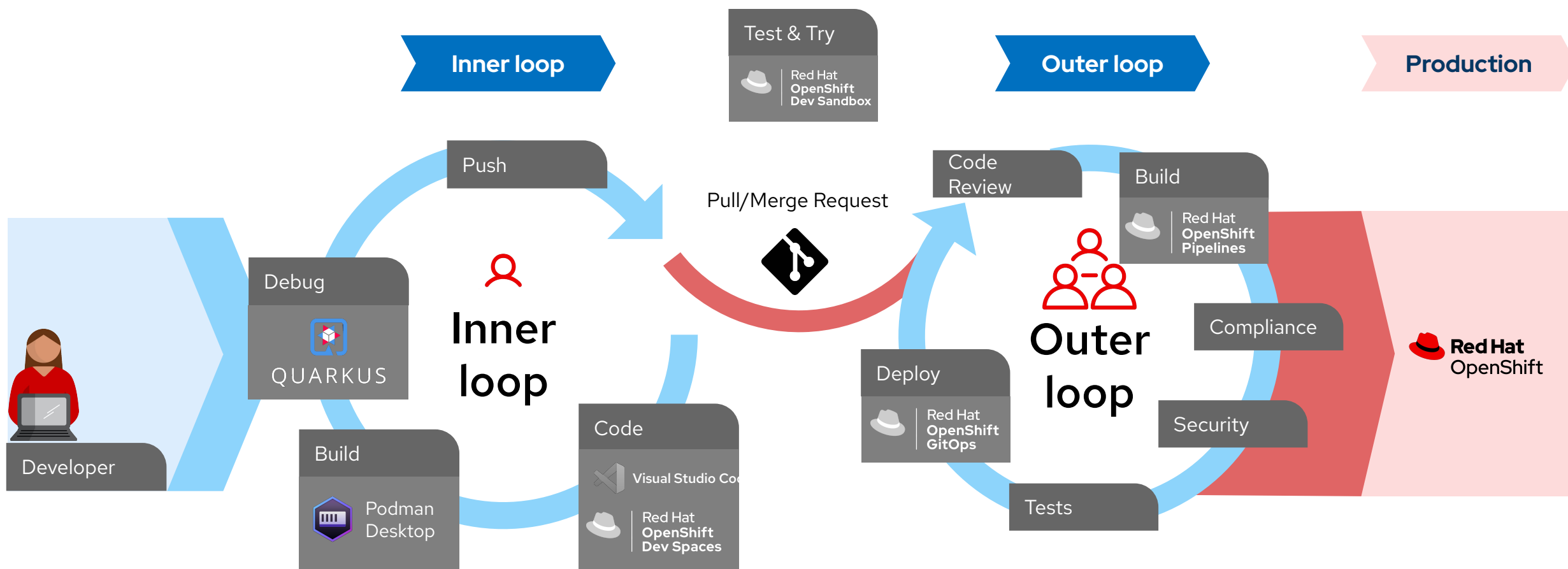
Maciej Walkowiak 🍃 @maciejwalkowiak · 50m

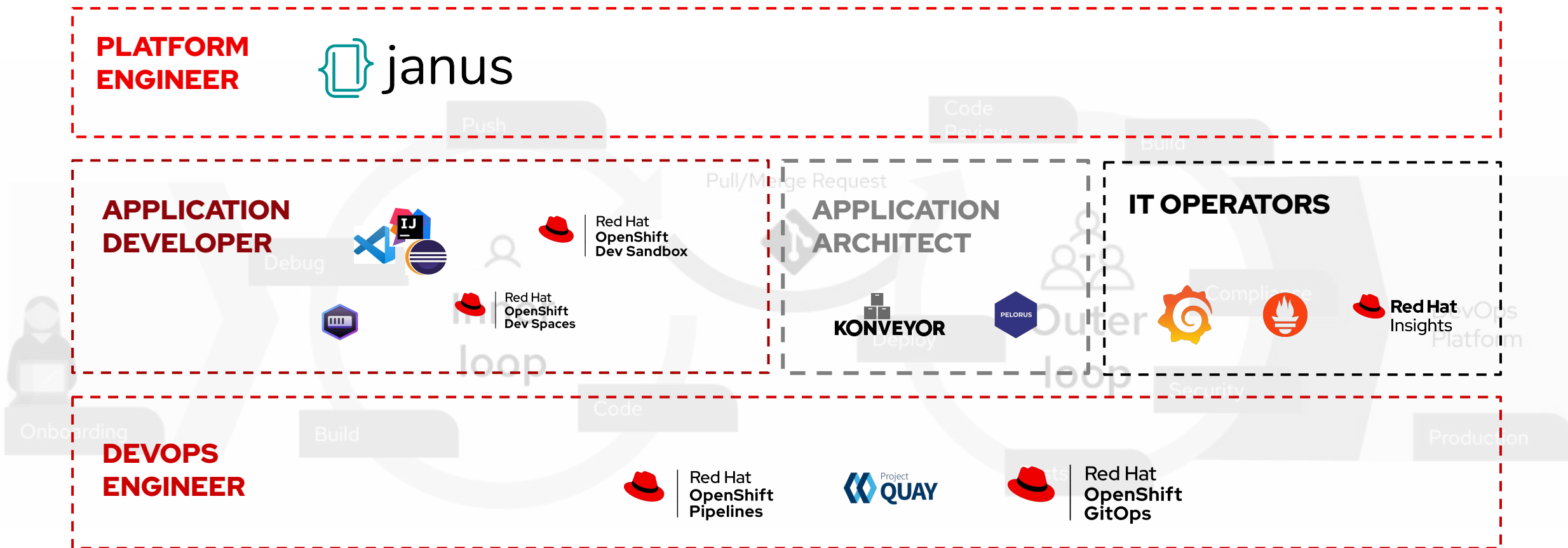
If all this effort developers put into learning Kubernetes they would put instead into learning Postgres & SQL, the world would be a better place.

7:22 AM · Mar 23, 2023 · **153** Views

Developer Flow

How Developer Tools bring customers from code to production

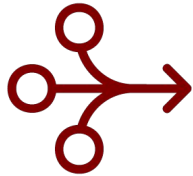




Red Hat provided Developer Platform



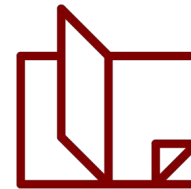
Decrease developer
friction



Simplify onboarding



Customizable and
repeatable Golden
Paths



System
architecture &
application docs

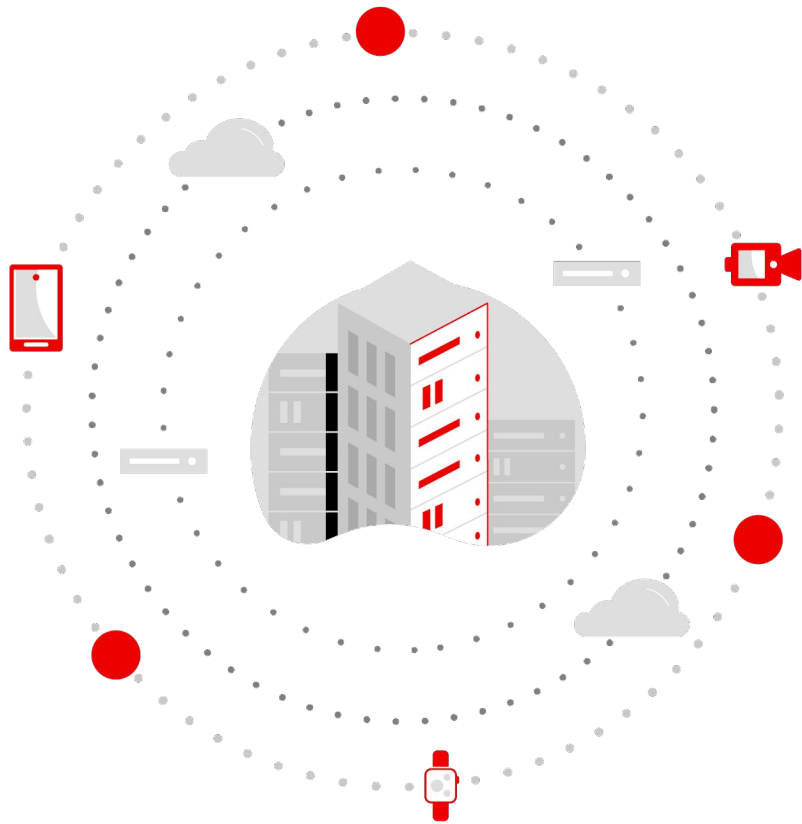


Support app teams on
their journey to cloud
native development



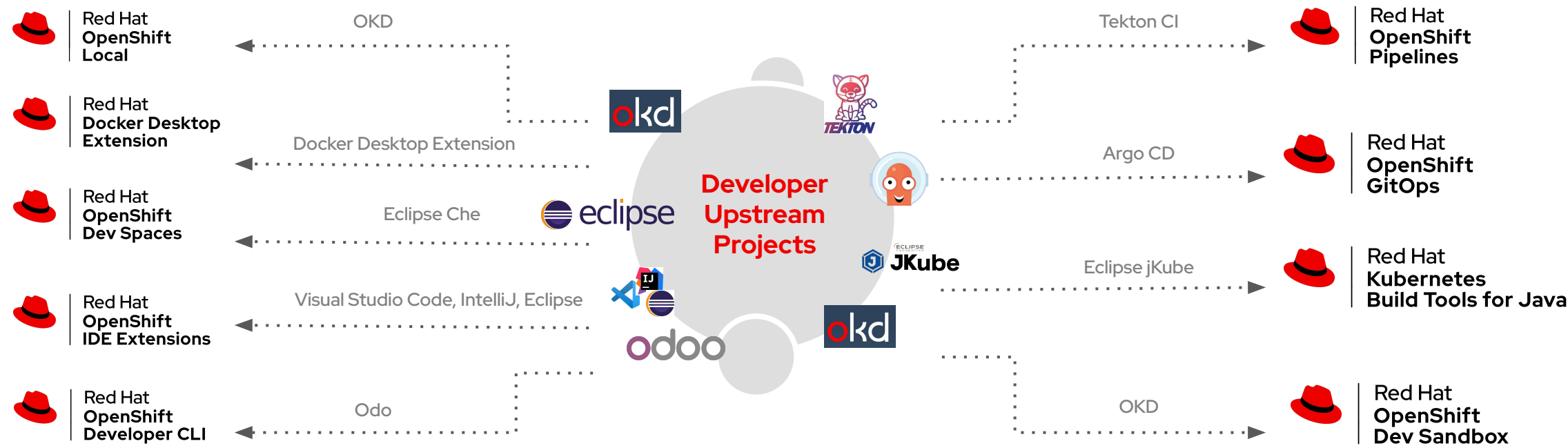
Increase engineering
productivity

DEMO TIME!



How you build **today**
determines what is
possible **tomorrow.**

Trusted Open Source Innovation



O'REILLY®

Modernizing Enterprise Java

A Concise Cloud Native Guide for Developers



Markus Eisele & Natale Vinto

- ▶ Learn **cloud native application** basics to understand what parts of your organization's **Java-based applications** and platforms need to migrate and modernize
- ▶ Understand how enterprise Java specifications can help you transition projects and teams
- ▶ Build a **cloud native platform** that supports effective development without falling into buzzword traps
- ▶ Discover how to complement a traditional enterprise Java application with components on top of **containers** and **Kubernetes**

 <https://red.ht/modernizing-enterprise-java-book>



<https://github.com/modernizing-java-applications-book>



developers.redhat.com/developer-sandbox

Learn containers, Kubernetes, and OpenShift in your browser.

Start exploring in the OpenShift Sandbox.

Try Red Hat's products and technologies
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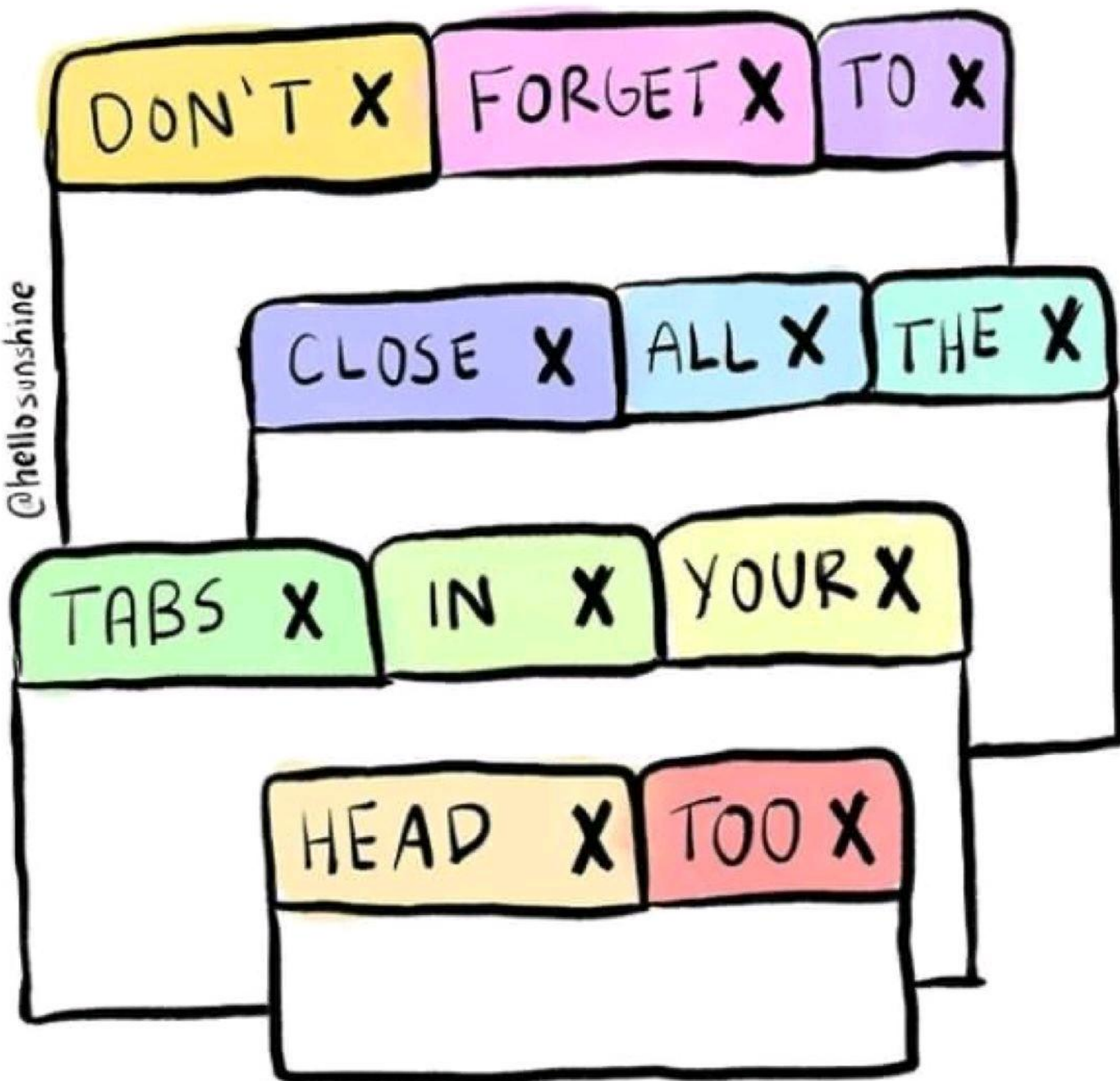


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@hello sunshine



Red Hat
Summit

Thank you



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twitter.com/RedHat

Developer Tools Highlights

Project Janus



<http://github.com/janus-idp>
<http://janus-idp.io>

Allowing developers to focus on what they want to ... coding, rather than navigating to all the different tools

Resulting in lowering the cognitive load and unlocking developer productivity

Happy developers makes happy code!



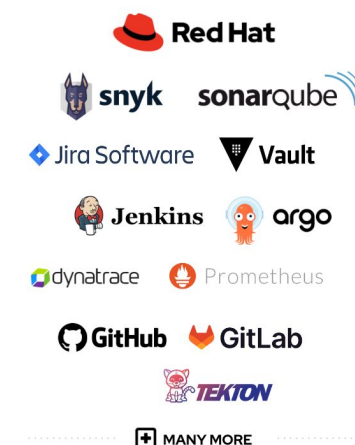
<http://backstage.io>

Core features:

- ▶ Centralized Software Catalog
- ▶ Plugins
- ▶ Software templates
- ▶ Tech Docs
- ▶ Search

90+ plugins, some examples:

- ▶ SCM
- ▶ CI/CD
- ▶ Monitoring
- ▶ Issue tracking
- ▶ Code quality

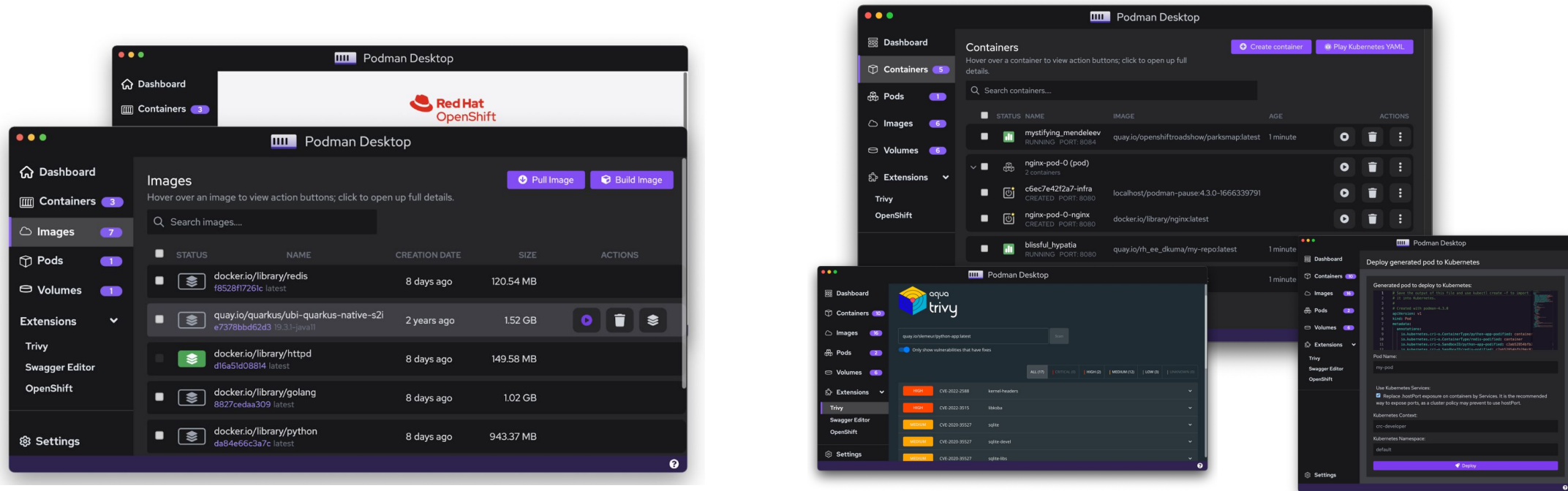


twitter.com/JanusIDP



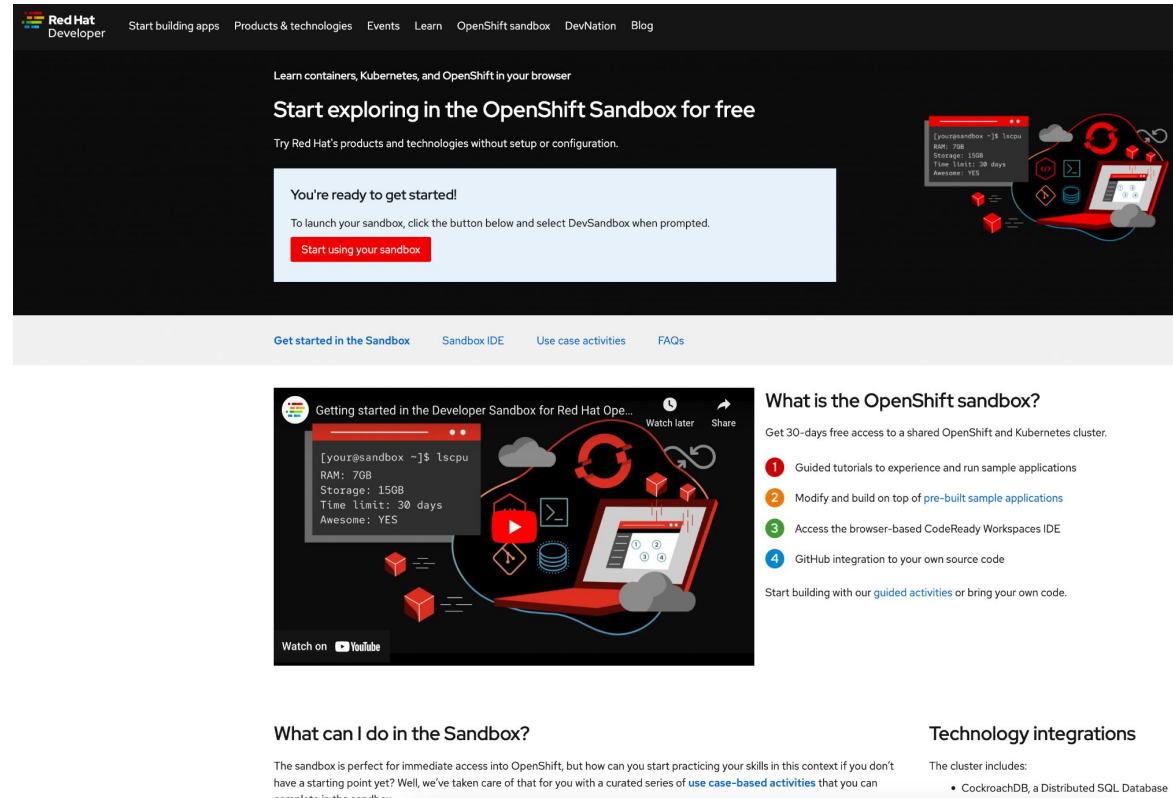
Podman Desktop

Containers and Kubernetes for Application Developers



Test and Try

Developer Sandbox for OpenShift



Red Hat Developer

Start building apps Products & technologies Events Learn OpenShift sandbox DevNation Blog

Learn containers, Kubernetes, and OpenShift in your browser

Start exploring in the OpenShift Sandbox for free

Try Red Hat's products and technologies without setup or configuration.

You're ready to get started!

To launch your sandbox, click the button below and select DevSandbox when prompted.

[Start using your sandbox](#)

[Get started in the Sandbox](#) [Sandbox IDE](#) [Use case activities](#) [FAQs](#)

Getting started in the Developer Sandbox for Red Hat Ope...

Watch later Share

```
[your@sandbox ~]$ lscpu
RAM: 7GB
Storage: 15GB
Time limit: 30 days
Awesome: YES
```

Watch on [YouTube](#)

What is the OpenShift sandbox?

Get 30-days free access to a shared OpenShift and Kubernetes cluster.

- 1 Guided tutorials to experience and run sample applications
- 2 Modify and build on top of [pre-built sample applications](#)
- 3 Access the browser-based CodeReady Workspaces IDE
- 4 GitHub integration to your own source code

Start building with our [guided activities](#) or bring your own code.

What can I do in the Sandbox?

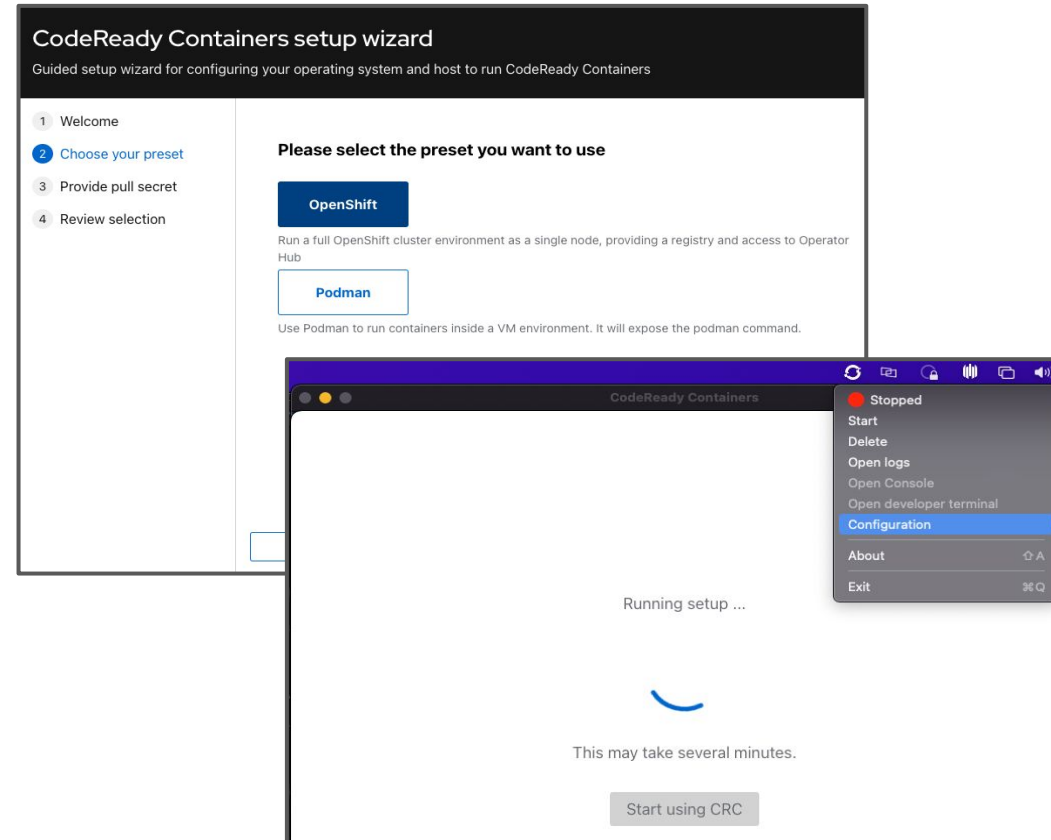
The sandbox is perfect for immediate access into OpenShift, but how can you start practicing your skills in this context if you don't have a starting point yet? Well, we've taken care of that for you with a curated series of [use case-based activities](#) that you can complete in the sandbox.

Technology integrations

The cluster includes:

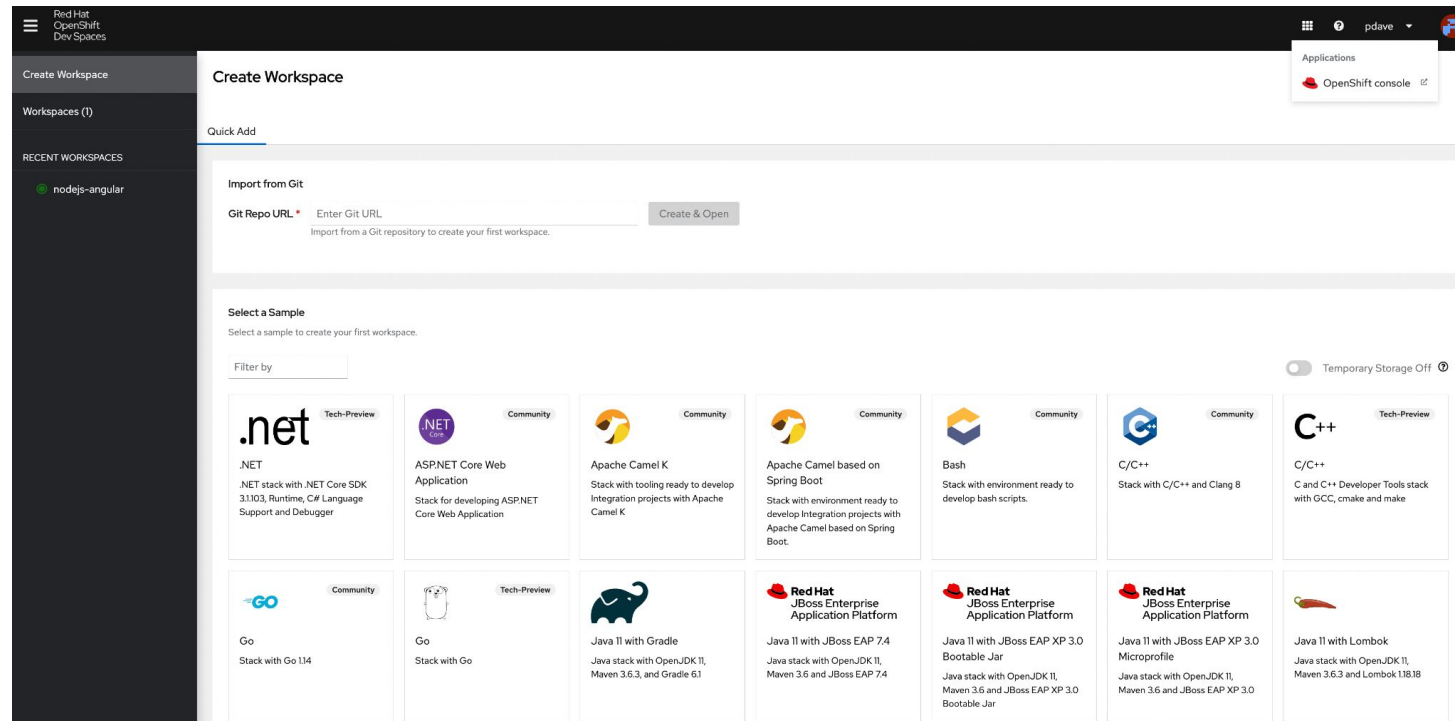
- CockroachDB, a Distributed SQL Database

OpenShift Local



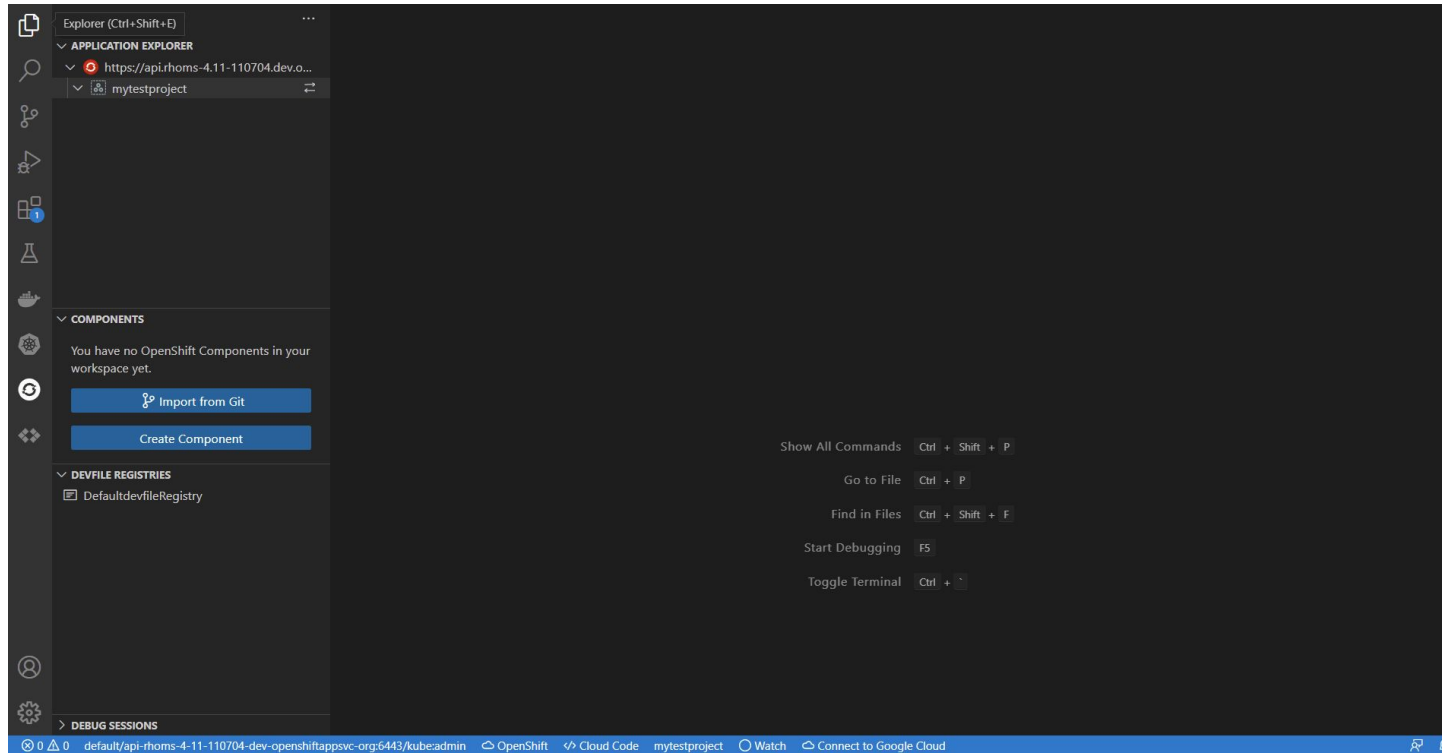
Inner Loop

OpenShift Dev Spaces

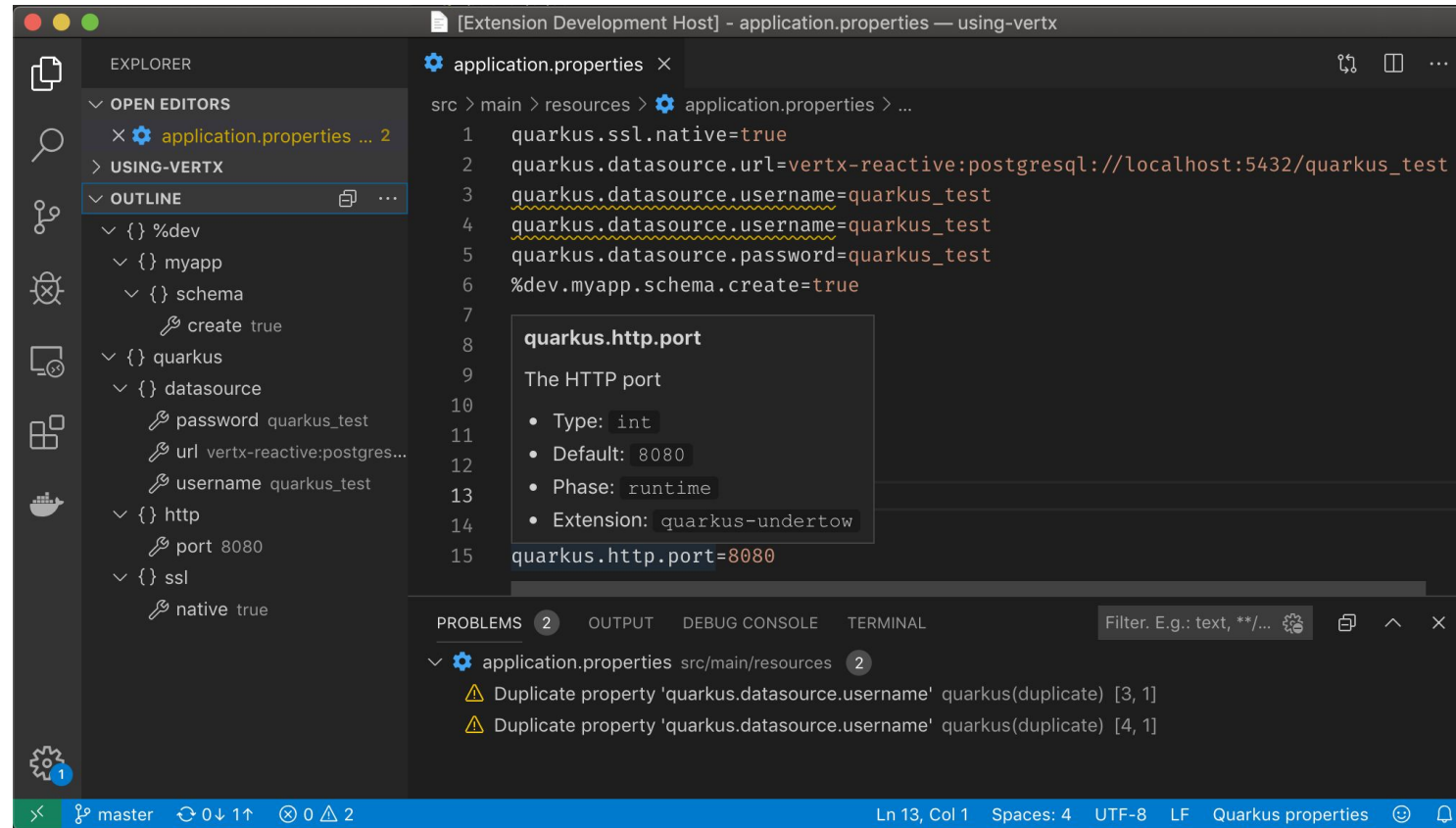


OpenShift Toolkit

(formerly known as OpenShift Connector)



IDE Extension for Quarkus



odo – Red Hat OpenShift Developer CLI

```
$ odo init

Initializing new component
Files: Source code detected, a Devfile will be determined based upon source code autodetection
odo version: v3.0.0

Interactive mode enabled, please answer the following questions:
Based on the files in the current directory odo detected
Language: javascript
Project type: nodejs
The devfile "nodejs" from the registry "DefaultDevfileRegistry" will be downloaded.
? Is this correct? Yes
✓ Downloading devfile "nodejs" from registry "DefaultDevfileRegistry" [613ms]

$ odo dev

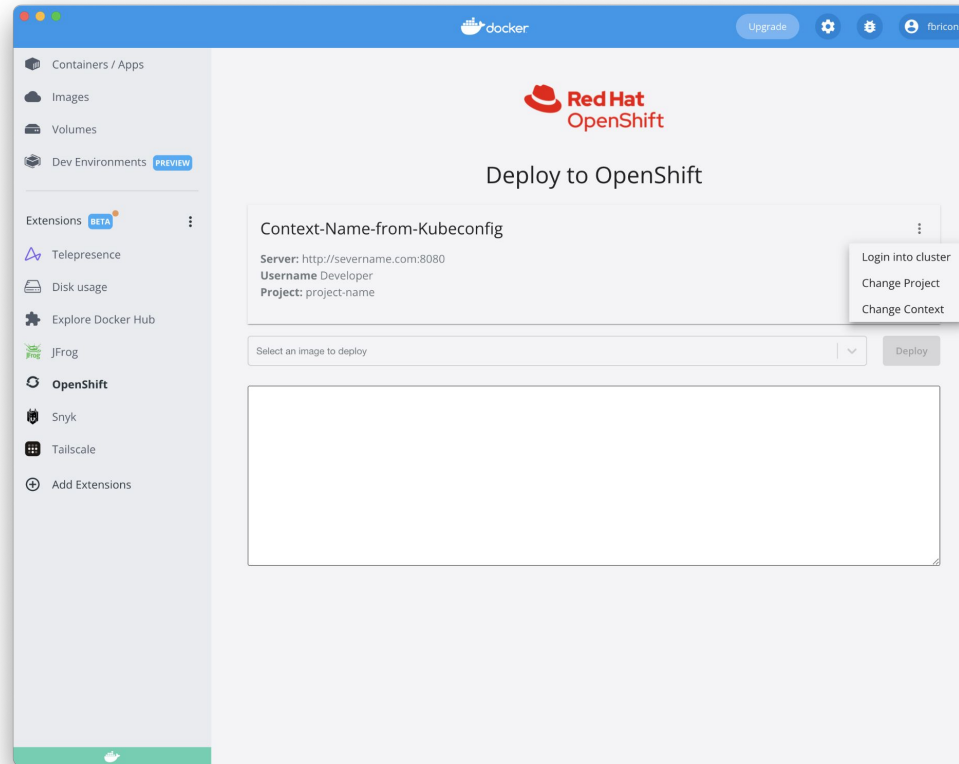
Developing using the nodejs-starter Devfile
Namespace: default
odo version: v3.0.0

↳ Deploying to the cluster in developer mode
  • Waiting for Kubernetes resources ...
  △ Pod is Pending
  ✓ Pod is Running
  ✓ Syncing files into the container [356ms]
  ✓ Building your application in container on cluster (command: install) [5s]
  • Executing the application (command: run) ...
  - Forwarding from 127.0.0.1:40001 -> 3000

↳ Dev mode
Status:
Watching for changes in the current directory /Users/user/nodejs

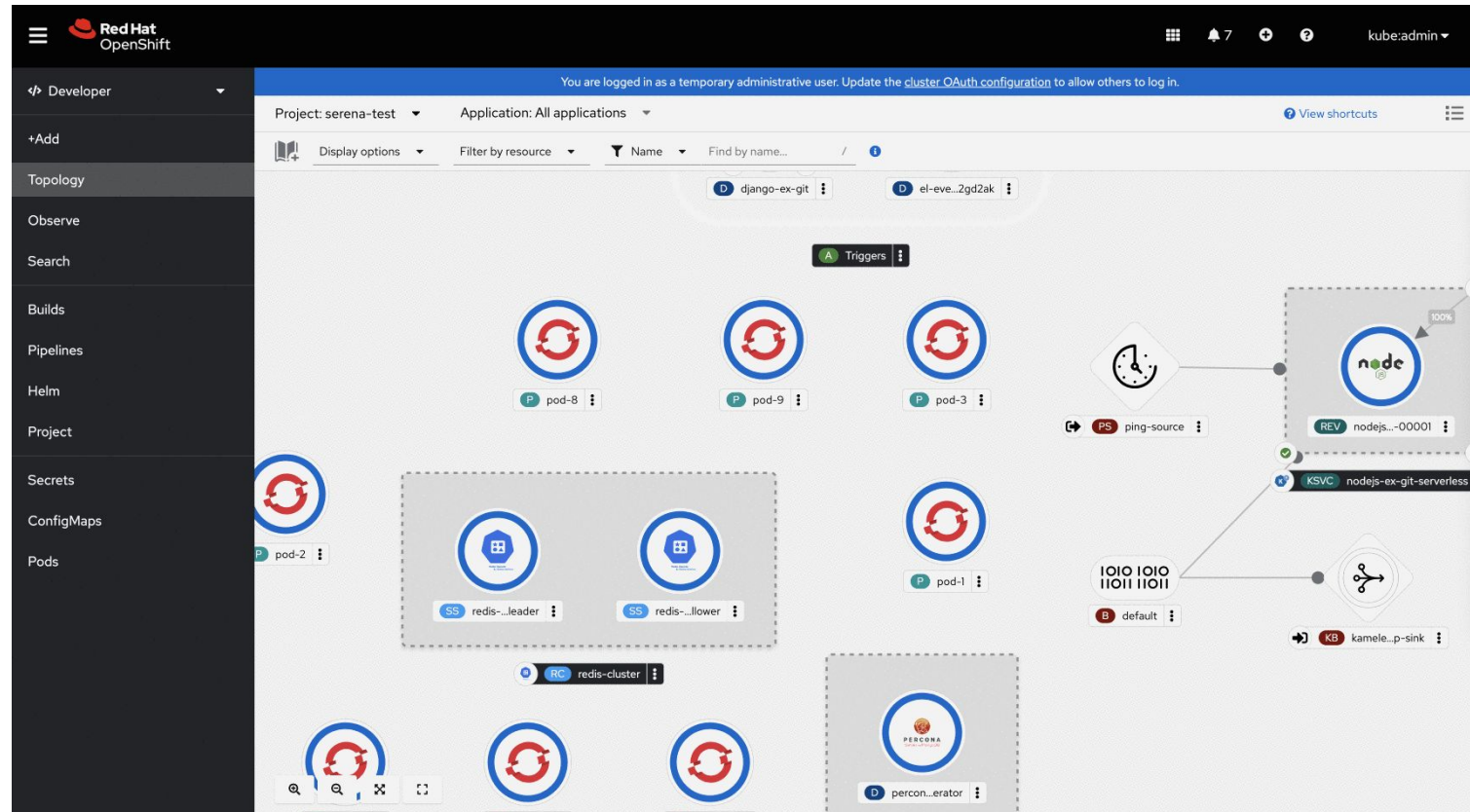
Keyboard Commands:
[Ctrl+c] - Exit and delete resources from the cluster
[p] - Manually apply local changes to the application on the cluster
```

Docker Desktop extension for OpenShift

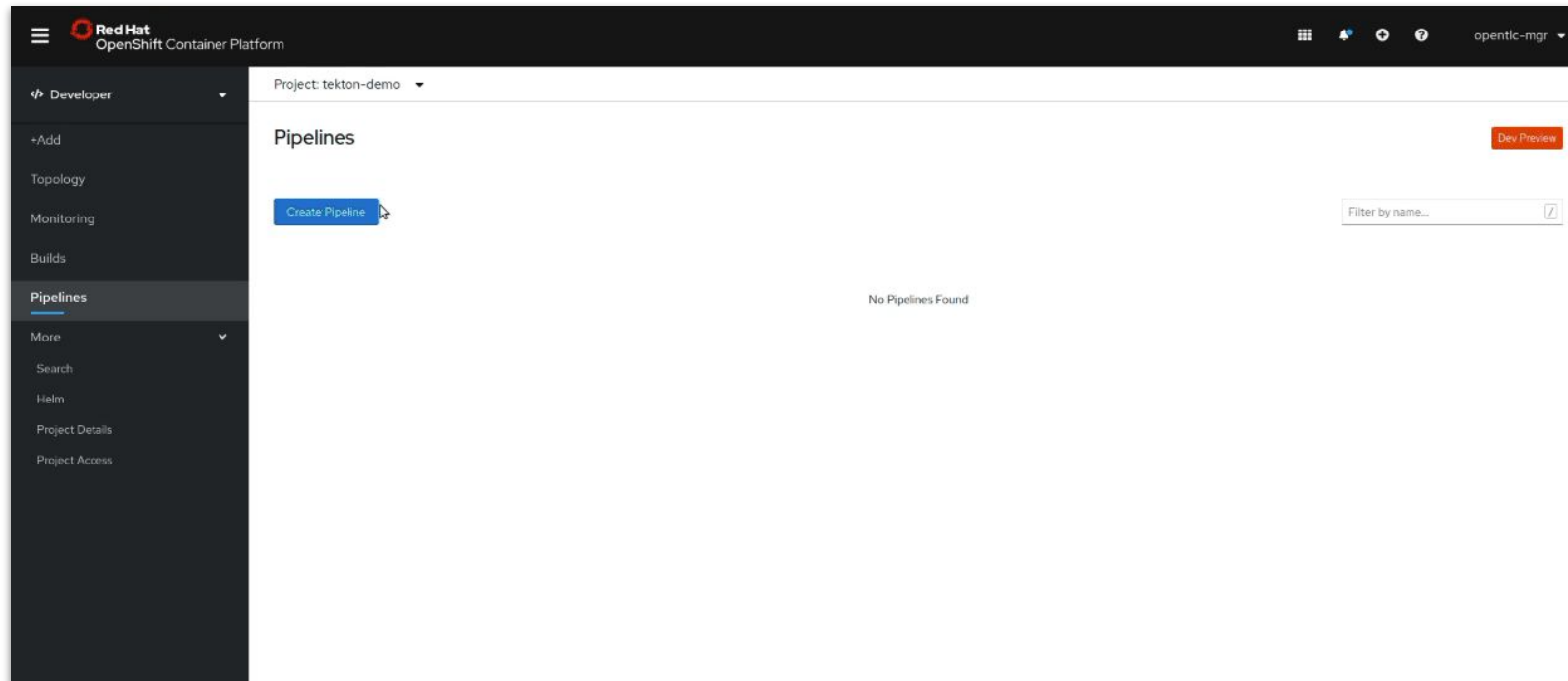


Outer Loop

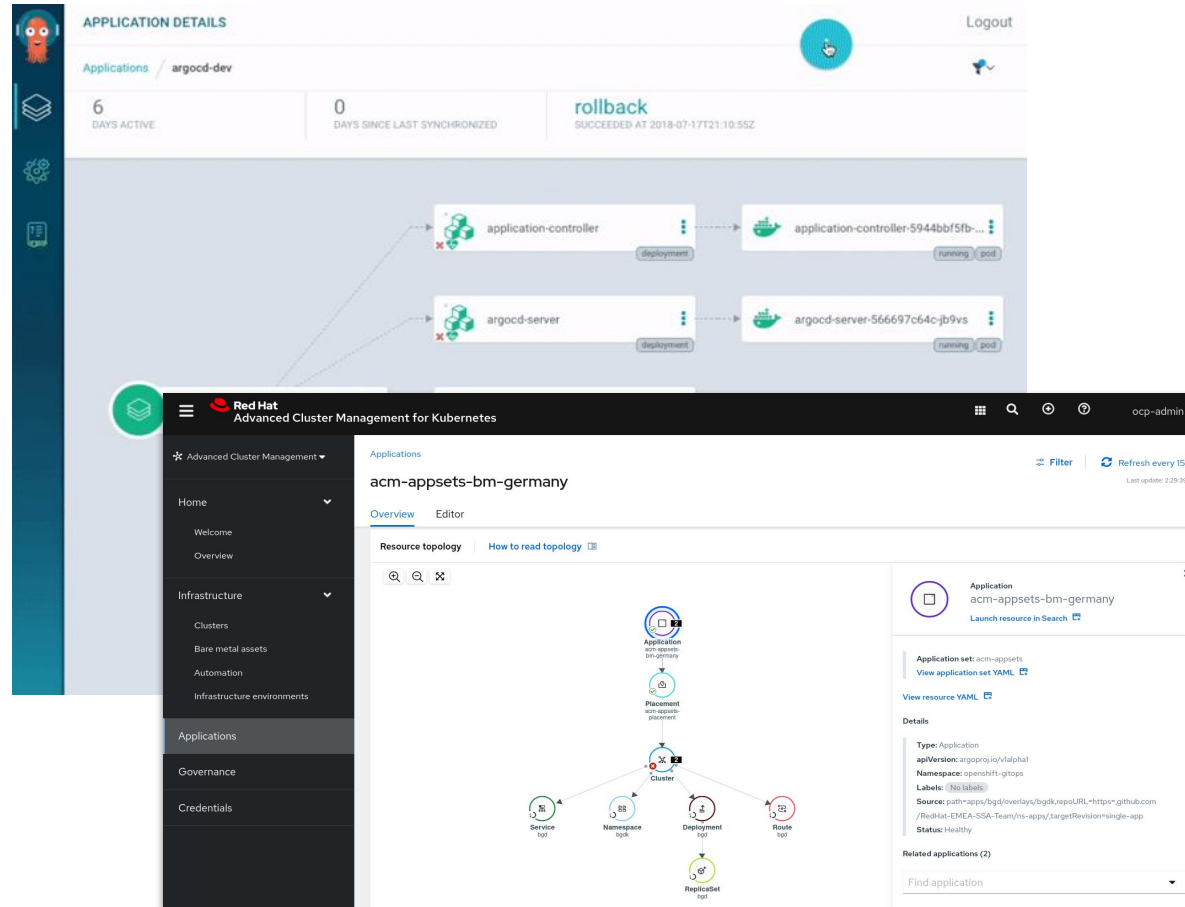
OpenShift Developer Perspective



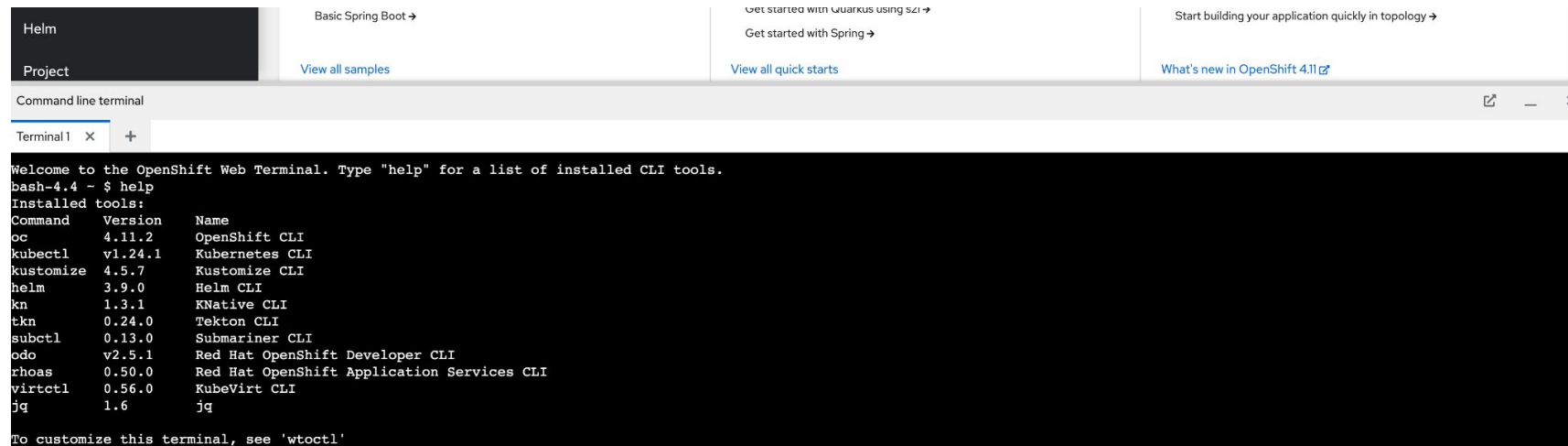
OpenShift Pipelines



OpenShift GitOps



Web Terminal



```
Welcome to the OpenShift Web Terminal. Type "help" for a list of installed CLI tools.
bash-4.4 - $ help
Installed tools:
Command  Version  Name
oc       4.11.2   OpenShift CLI
kubectl  v1.24.1  Kubernetes CLI
kustomize 4.5.7    Kustomize CLI
helm     3.9.0    Helm CLI
kn       1.3.1    KNative CLI
tkn      0.24.0   Tekton CLI
subctl   0.13.0   Submariner CLI
odo      v2.5.1   Red Hat OpenShift Developer CLI
rhoas    0.50.0   Red Hat OpenShift Application Services CLI
virtctl  0.56.0   KubeVirt CLI
jq       1.6      jq
To customize this terminal, see 'wtocctl'
```