
Red Hat Day Events
January 30, Vancouver
OpenShift
The Platform for Big Ideas
Red Hat

RED HAT® OPENSHIFT

DAY-IN-THE-LIFE OF A DEVELOPER with OPENSHIFT 4

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Blogs: https://blog.openshift.com/author/veermuchandi/

#OpenShift4
#RedHatEvents

Jan 2020

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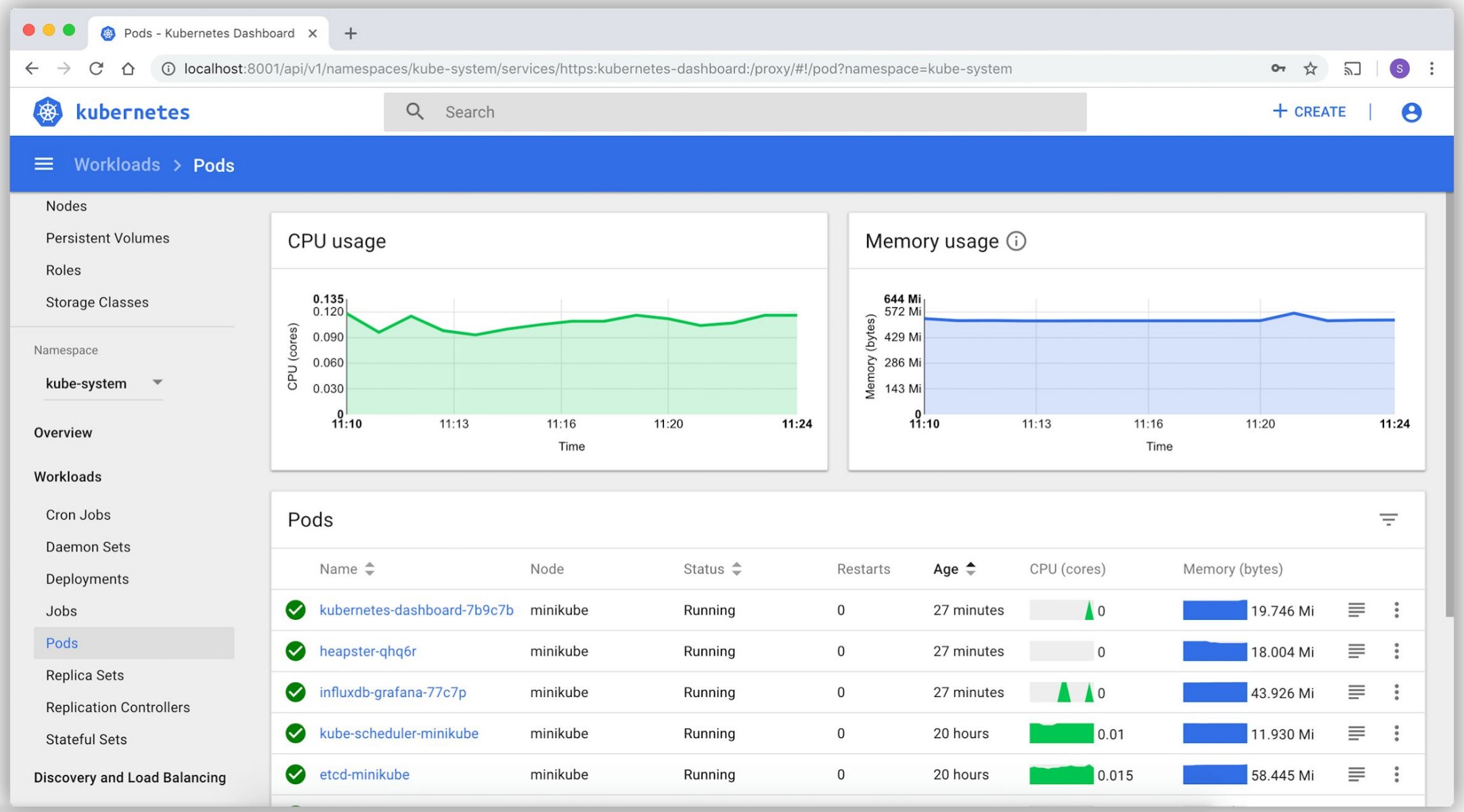
Kubernetes Dashboard

Plain Kubernetes



Does a developer need to know about nodes, cluster capacity etc?

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Kubernetes Deployments

Plain Kubernetes

```yaml
kind: Deployment
apiVersion: extensions/v1beta1
metadata:
  name: hostname-101-deployment
spec:
  replicas: 3
  selector:
    # Like saying "Make sure there are three pods running
    # with the label app = hostname and version = v101"
    matchLabels:
      app: hostname
      version: v101
  template:
    metadata:
      labels:
        # The `app` label is used by both the service
        # and the deployment to select the pods they operate on.
        app: hostname
        # The `version` label is used only by the deployment
        # to control replication.
        version: v101
    spec:
      containers:
        - name: nginx-hostname
          image: kubegoldenguide/nginx-hostname:1.0.1
          ports:
            - containerPort: 80
```

Image Acknowledgements: matthewpalmer.net

Do you like to deal with all these yamls for application deployment?

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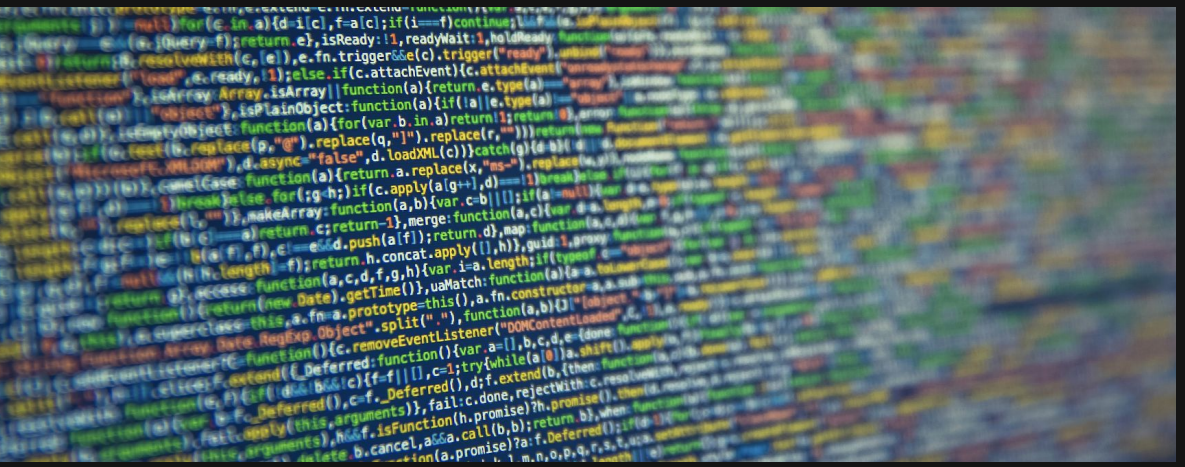
OpenShift Developer focused clients



Web

CLI

IDE

Photo by Unsplash

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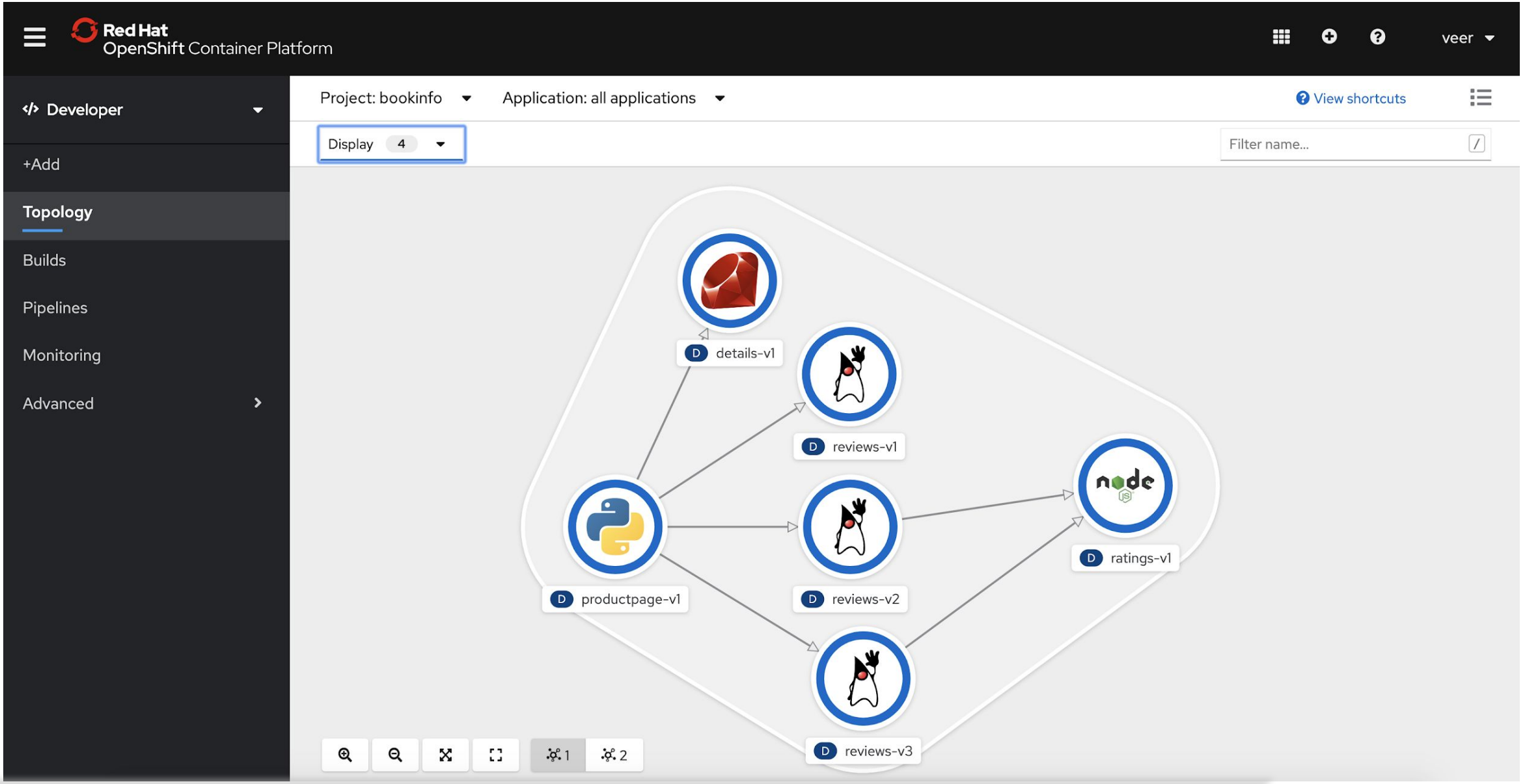
Developer focused OpenShift Console

Developer focussed clients



Gives your developers a “home” in OpenShift Kubernetes platform.

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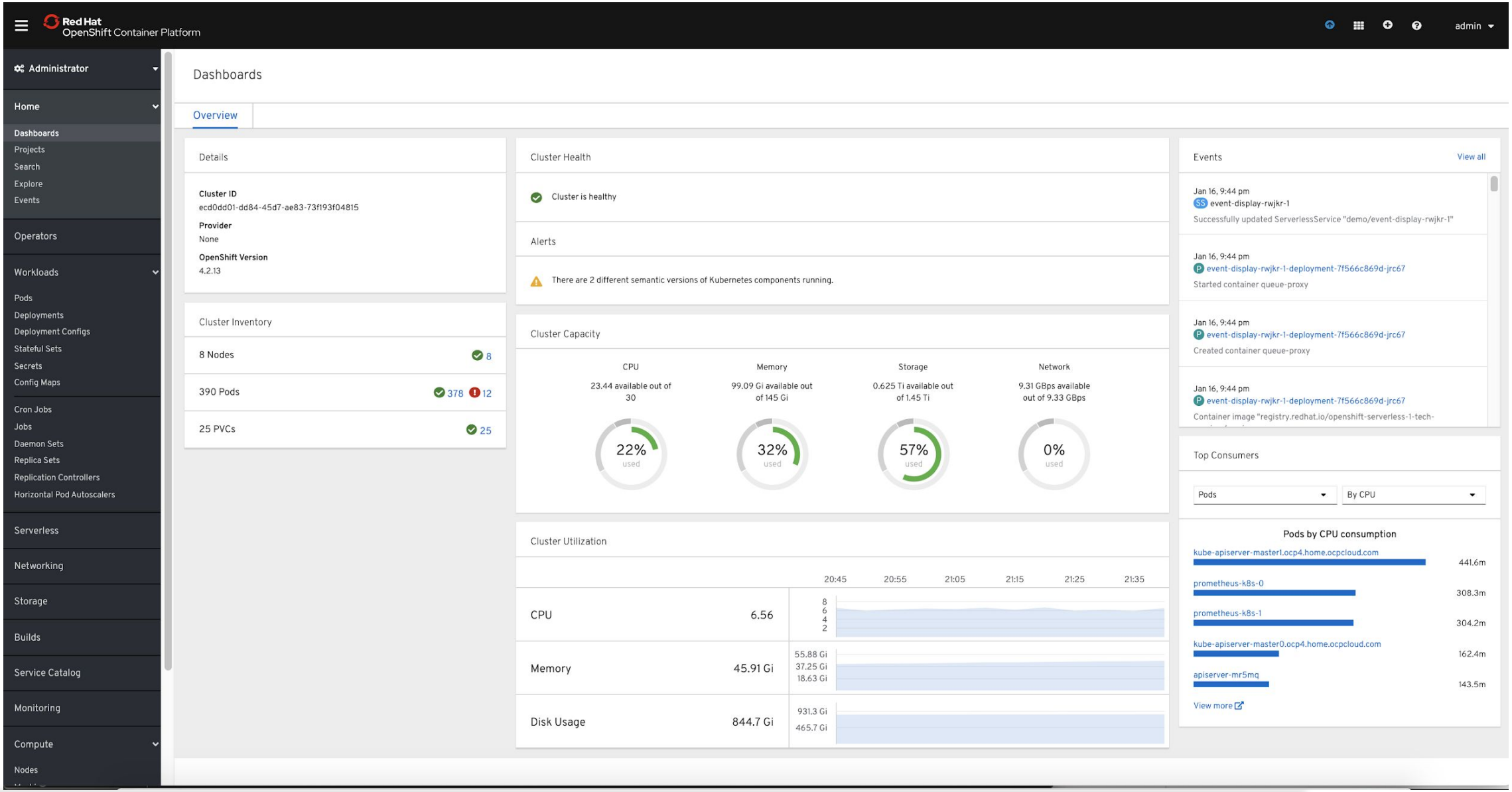
Administrator Console

Developer focussed clients



Administrators still have their console, to manage the cluster!!

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odo - OpenShift's Dev-Focused CLI

A developer-focused command-line tool for rapid development iterations on OpenShift (inner loop).

Simplifies building of microservices applications on OpenShift.

```
$ odo create wildfly backend
Component 'backend' was created.

$ odo push
Pushing changes to component: backend

$ odo create php frontend
Component 'frontend' was created.
To push source code to the component run 'odo push'

$ odo push
Pushing changes to component: frontend

$ odo url create
frontend - http://frontend-myapp.192.168.99.100.nip.io

$ odo watch
Waiting for something to change in /dev/frontend
```


Enable the 'git push' flow developers love, but with OpenShift Kubernetes.

IDEs: OpenShift Deploy Plugins

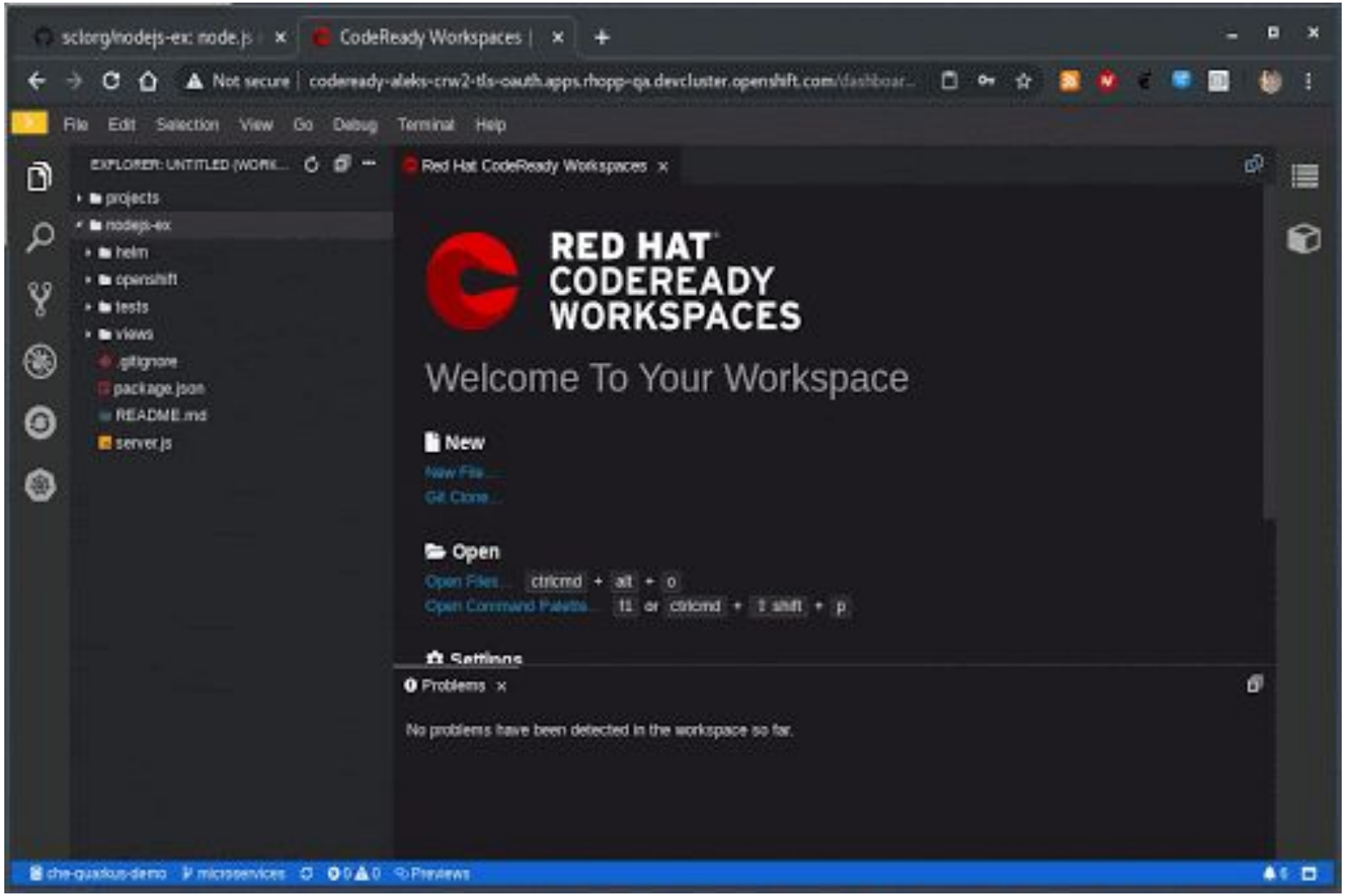
Red Hat has created plugins to simplify development and deployment to OpenShift from popular IDEs and DevOps Toolchains:

- VS Code
- JetBrains IDEs (e.g. IntelliJ)
- Azure DevOps
- CodeReady Workspaces
- Eclipse IDE

Enable simple deployment to OpenShift from IDEs and Toolchains

Code Ready Workspaces

Developer focussed clients



CodeReady Workspaces 2.x

- Workspace includes runtimes, project files, source code and Cloud native IDE
- Based on Eclipse Che 7
- IDE uses VSCode plugins
- Native integration with OpenShift
- Build and deploy locally and to OpenShift

Workspace for App Development and Testing in a Container!!

CodeReady Containers

OpenShift on your Laptop

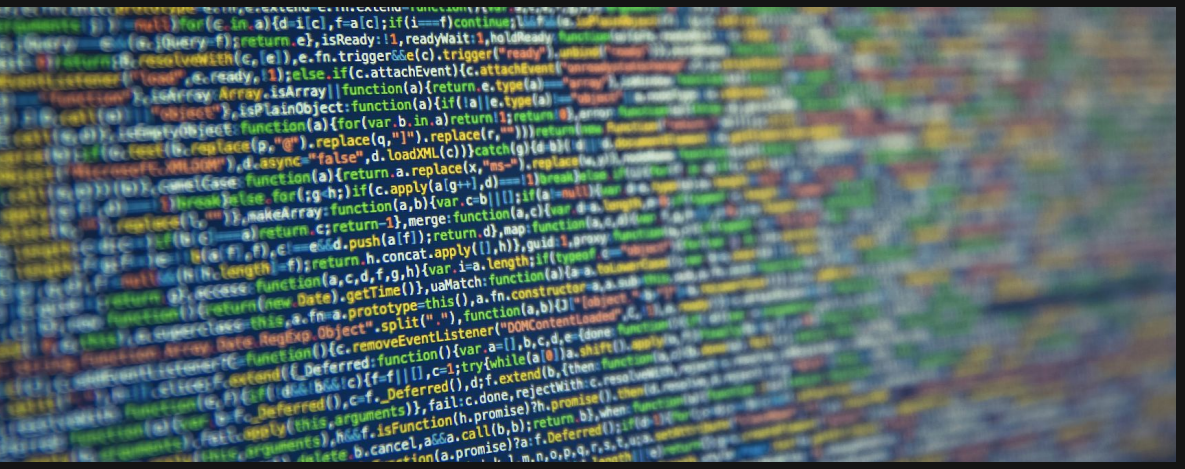
```
$ crc setup
Prepare your machine for running OpenShift

$ crc start -b crc-hyperkit-4.2.0.crcbundle
Start with the Hyperkit 4.2 bundle

$ crc status
Get the status of the cluster
```

Provides a pre-built development environment based on **Red Hat Enterprise Linux** and **OpenShift** for quick container-based application development. Use with OpenShift on-premises or cloud.

- Based on OpenShift 4.x
- Linux (libvirt)
- Windows (Hyper-V)
- MacOS (Virtualbox)

Develop and deploy applications to OpenShift on your laptop!!

OpenShift Serverless



OpenShift Serverless helps developers deploy and run applications that will scale up or scale to zero on-demand.

Applications are packaged as OCI compliant Linux containers that can be run anywhere.

Tech Preview on OCP 4.2

Photo by Unsplash

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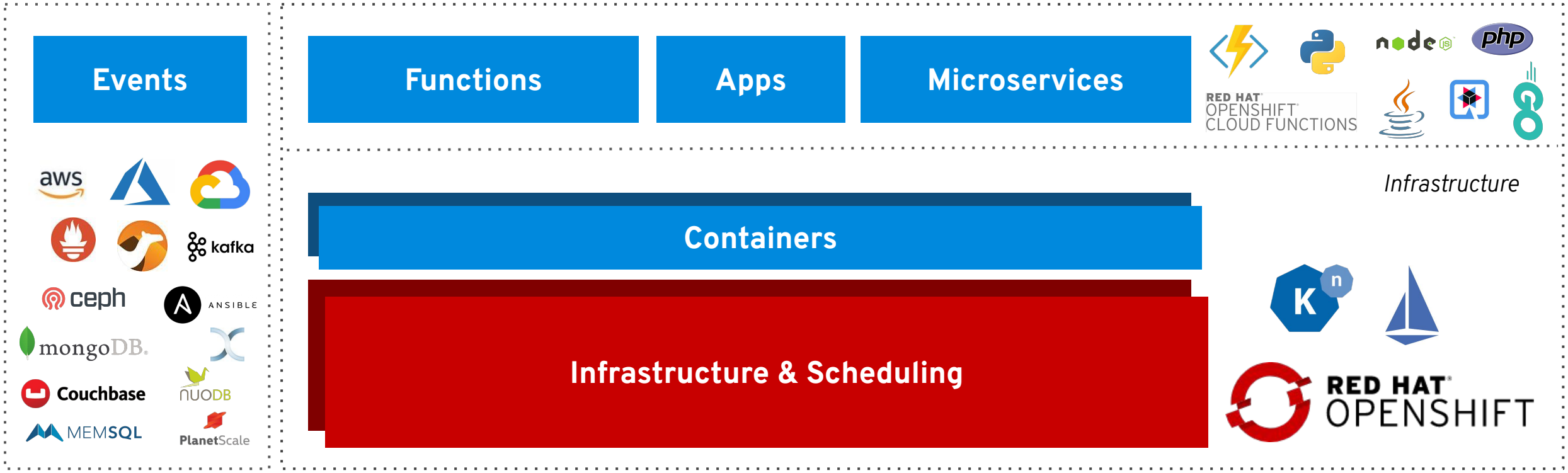
Microservices, Functions and Apps + Events



OperatorHub.io

Knative Client (*kn*)

Create a new service with 1 instance running all the time (no scale to zero) and limiting memory consumption

```
kn service create myService --image=.. --min-scale=1 --max-scale=100 --limits-memory=100m
```

Update a service with multiple Revisions to send 50% of traffic to each version

```
kn service update myService --traffic myService-rev1=50,myService-rev2=50
```

Update a service with multiple Revisions to send 10% of traffic while 90% goes to Revision 2.

```
kn service update myService --traffic myService-rev1=10,myService-rev2=90
```

For more https://github.com/knative/client

CLI for serverless with Knative .. no more YAMLs!!

Knative Serverless on Console

Select the resource type to generate

- (•) Deployment

  apps/Deployment

  A Deployment enables declarative updates for Pods and ReplicaSets.

- ( ) Deployment Config

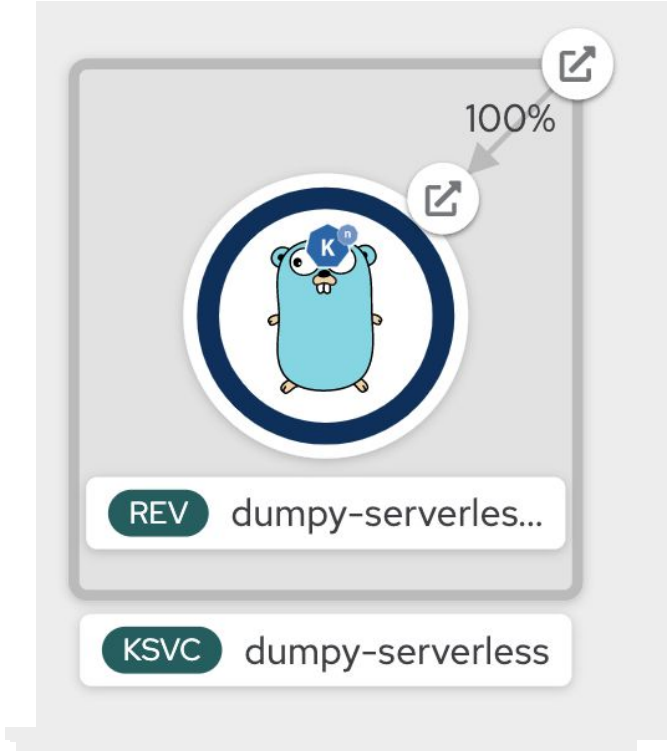
  apps.openshift.io/DeploymentConfig

  A Deployment Config defines the template for a pod and manages deploying new images or configuration changes

- ( ) Knative Service Tech Preview

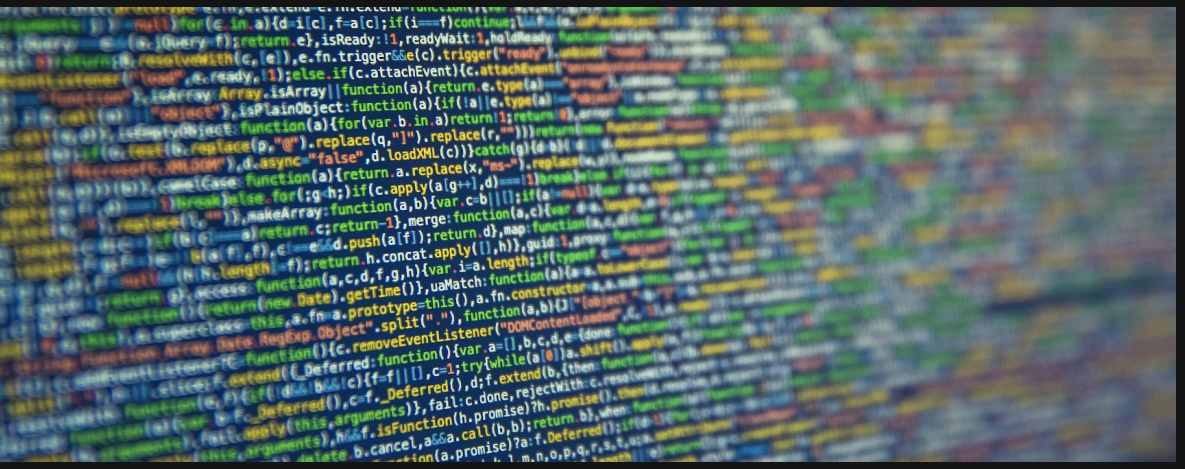
  serving.knative.dev/Service

  A Knative Service enables scaling to zero when idle



Deploy Knative from Web Console, Observe Scale to 0

OpenShift Pipelines



OpenShift Pipelines provides a Cloud-Native CI/CD experience based on Tekton

- Container based
- Serverless
- Designed for DevOps

Tech Preview on OCP 4.2

Photo by Unsplash

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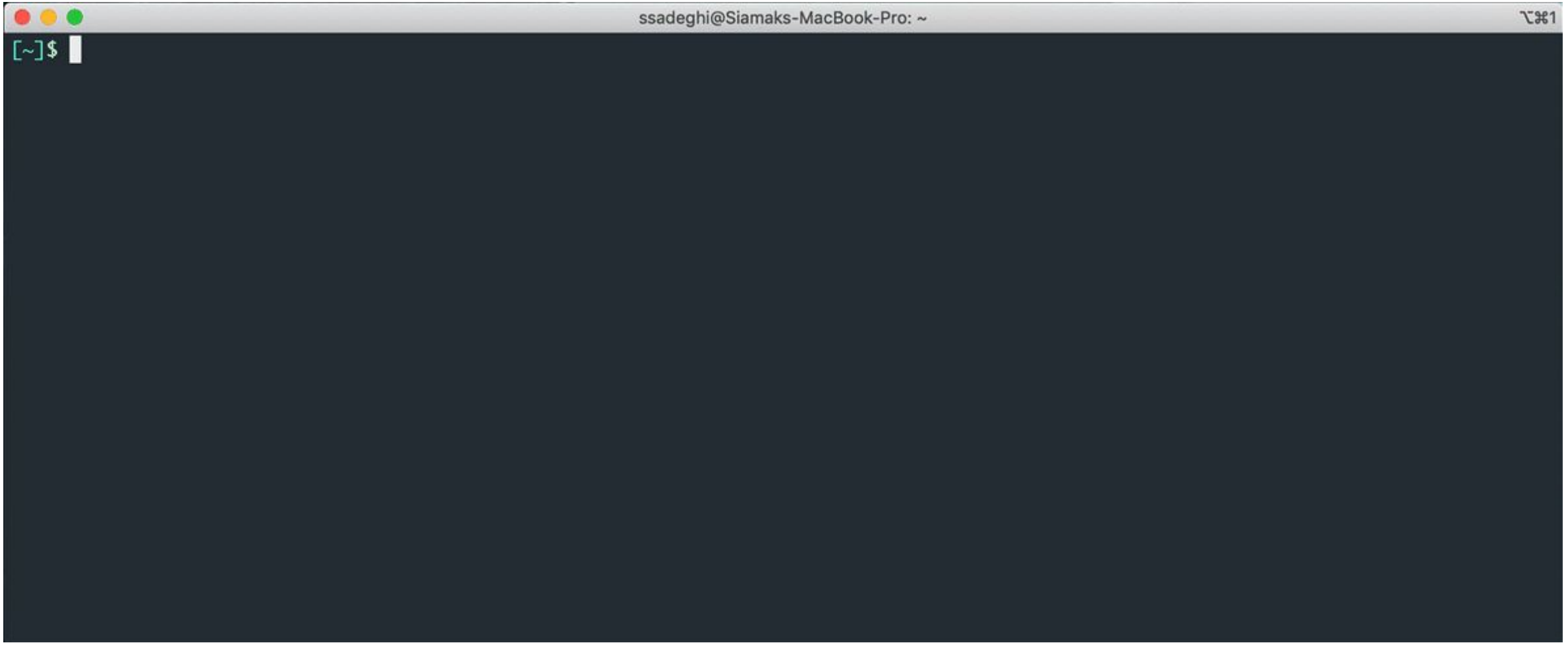
An open-source project for providing a set of shared and standard components for building Kubernetes-style CI/CD systems

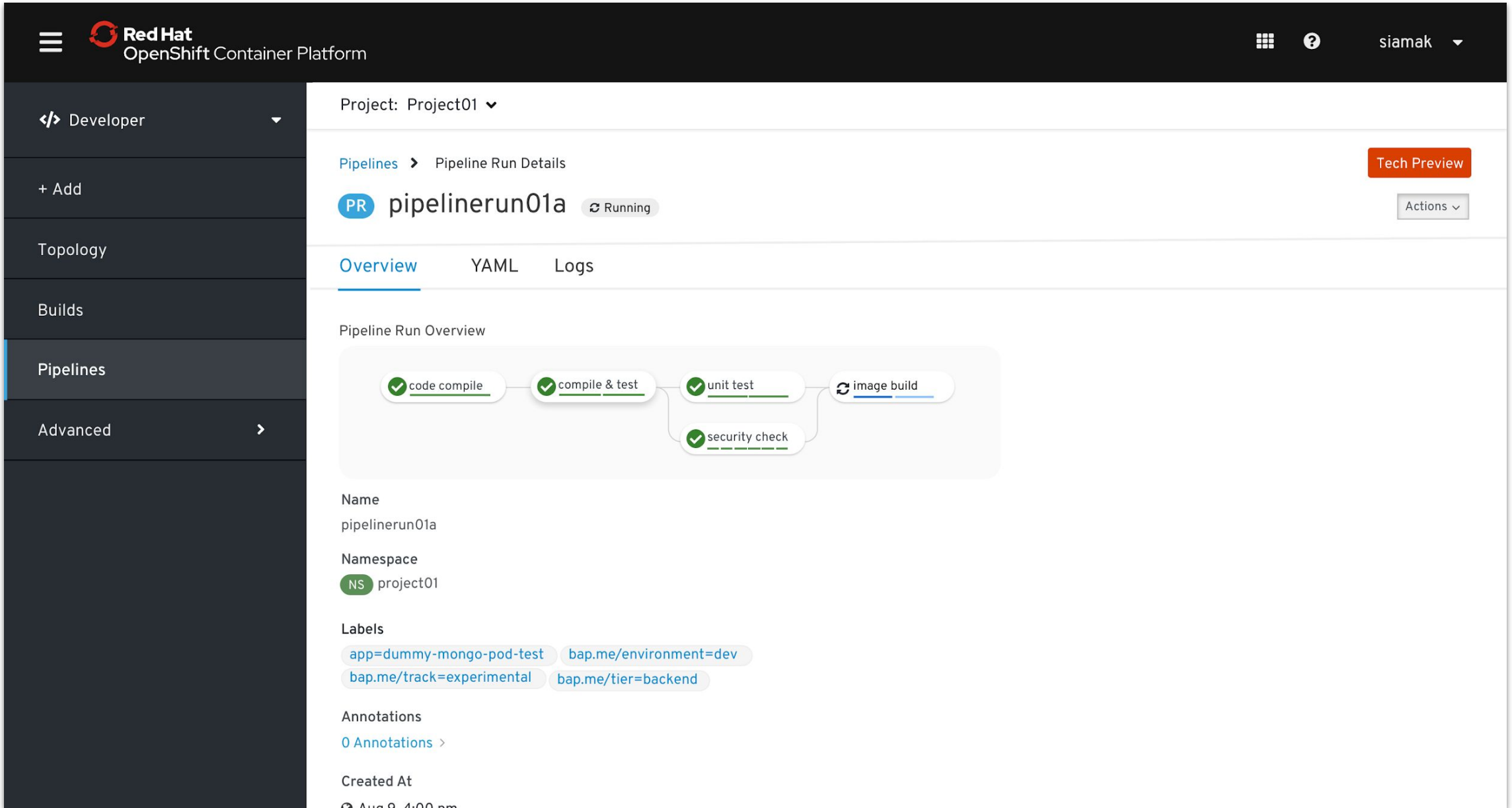
Governed by the Continuous Delivery Foundation

Contributions from Google, Red Hat, Cloudbees, IBM, Pivotal and many more

Manage Pipelines with Tekton CLI

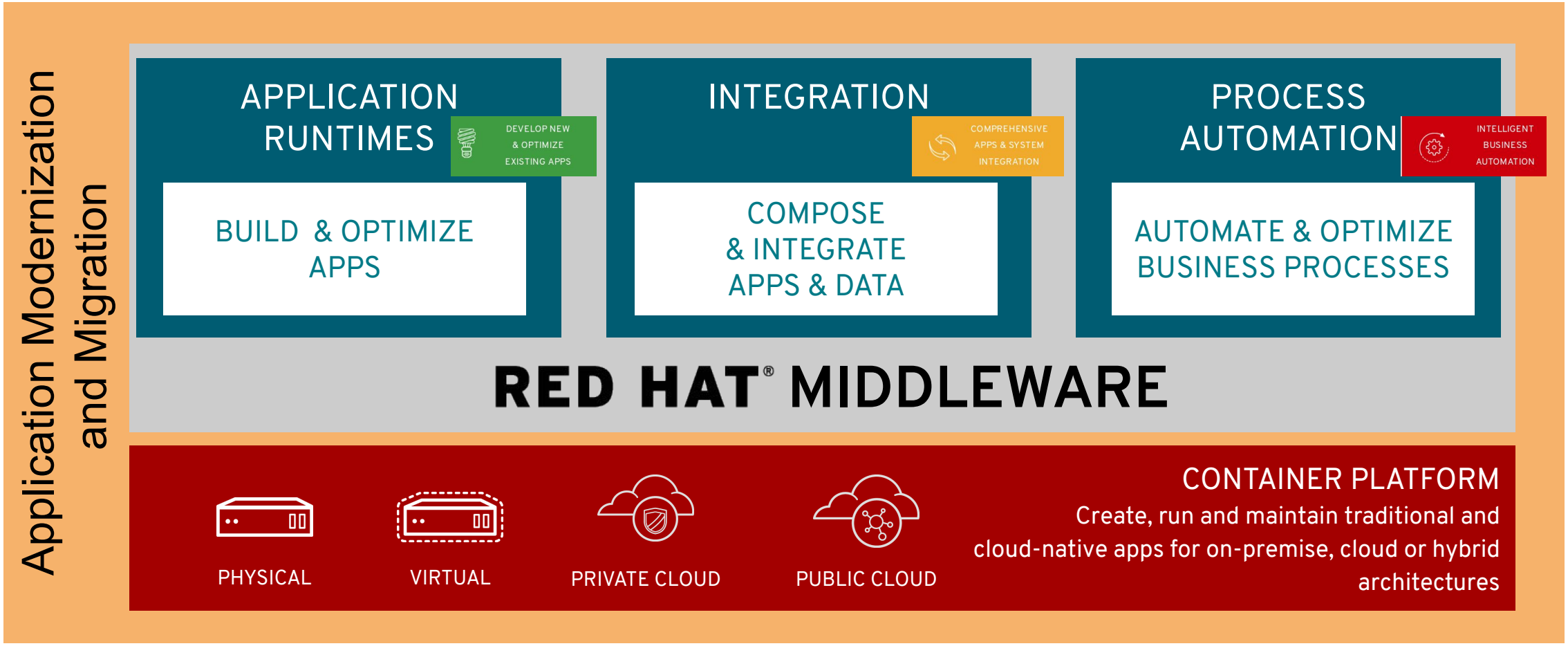


Pipeline Visualisation in **Developer** perspective

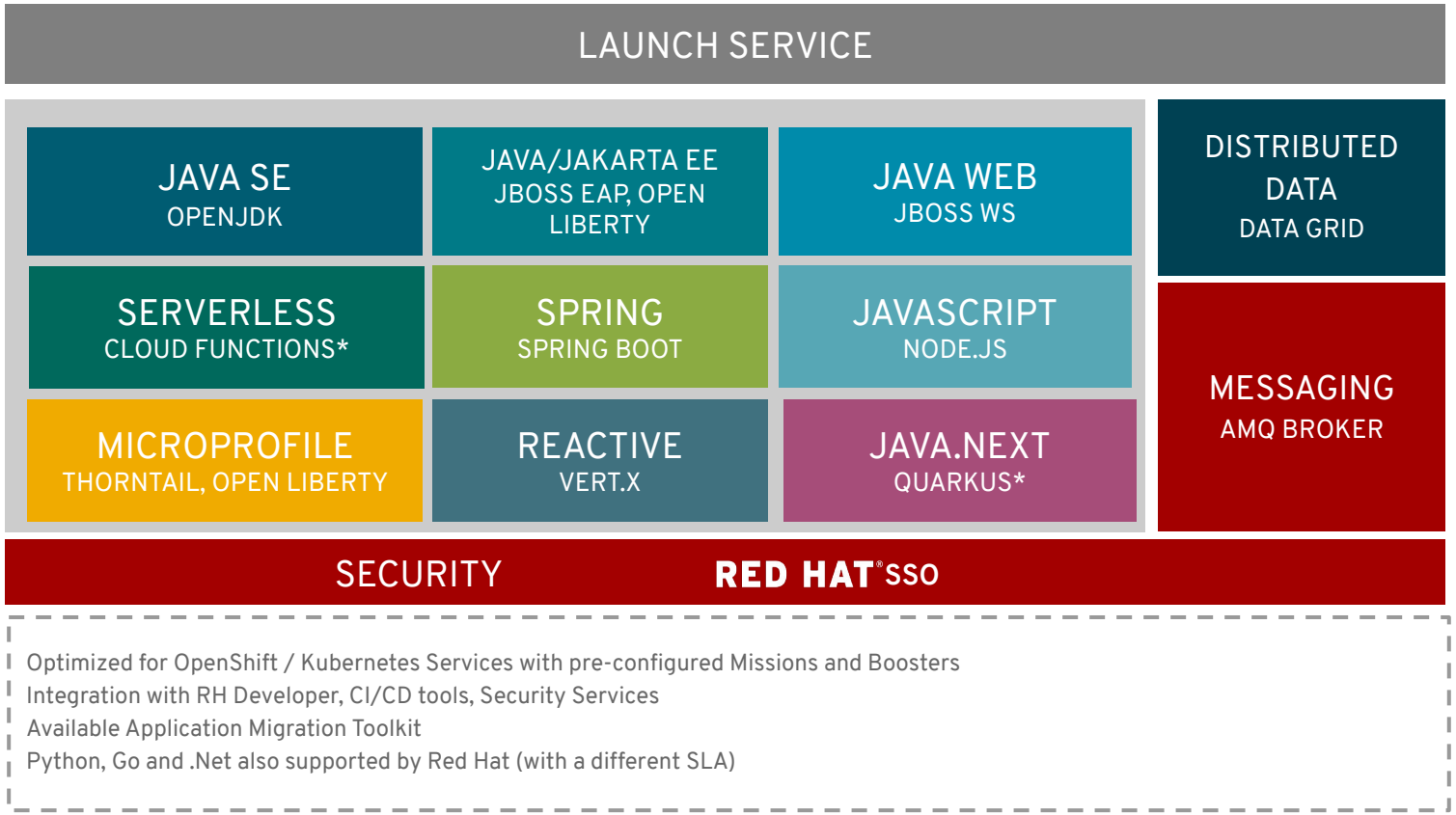


Red Hat AppDev Solutions

CREATE THE APPLICATION LANDSCAPE CUSTOMERS NEED



Red Hat Runtimes



Facilitate cloud native app development ON THE HYBRID CLOUD:

- ✓ Faster getting started
- ✓ Simplify container dev
- ✓ Automate DevOps
- ✓ Standardize tools/processes
- ✓ Fully supported JDK

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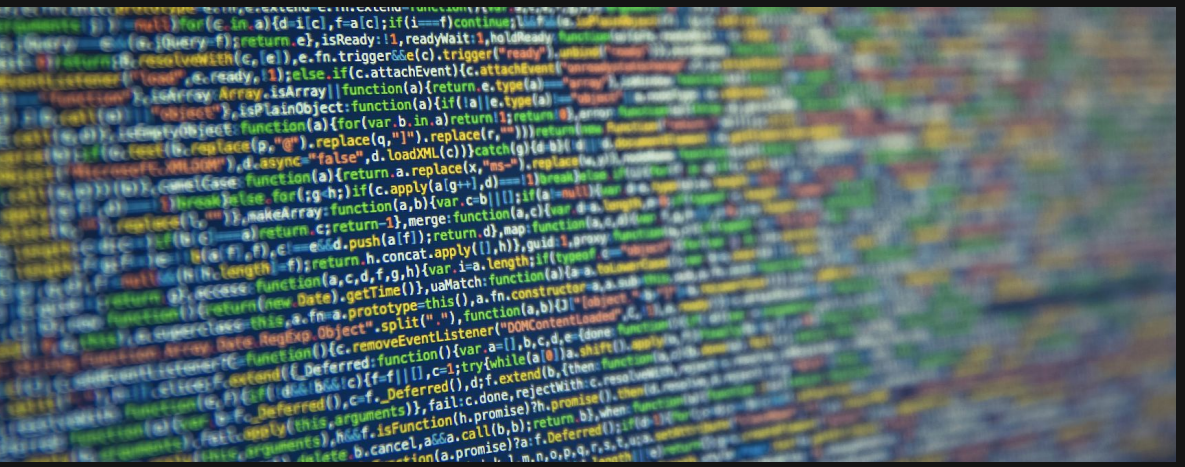
Quarkus

Supersonic Subatomic Java



A Kubernetes Native Java stack tailored for GraalVM & OpenJDK HotSpot, crafted from the best of breed Java libraries and standards

Photo by Unsplash

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INSTANA

1st Operator written in Quarkus

The community is growing

Quarkus in Worldwide
11 results

GitHub
Star 2,297 Fork 348

4,617 Followers


Eclipse Vert.x


Hibernate


RESTEasy


Apache Camel


Eclipse MicroProfile


Netty


DynamoDB


Kubernetes

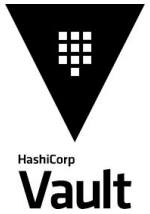

OpenShift


Jaeger

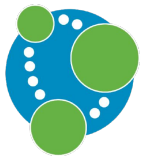

Prometheus


Apache Kafka


Infinispan



Flyway


Neo4j

MongoDB

MQTT


KeyCloak

Apache Tika

Red Hat

DEMO

- Edit and Debug using CRW
- Push changes to Git Repo
- Build and Deploy using OpenShift Pipelines/Tekton
- Deploy as Serverless Service
- Local App Dev using CRC
- Using OpenShift Plugin with Local IDE
  - Using odo

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Thank you

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