

Was kommt nach Kubernetes?

Markus Eisele

@myfear



Markus Eisele

Developer Adoption Lead Red Hat EMEA

- 15 years developer and architect with Enterprise Java (Automotive, Finance, Insurance)
- 8 years Developer Relations
- 150+ presentations, 200+ articles
- 2 reports and 1 book with O'Reilly

[twitter.com/@myfear](https://twitter.com/myfear)

<https://www.linkedin.com/in/markuseisele/>

markus@redhat.com

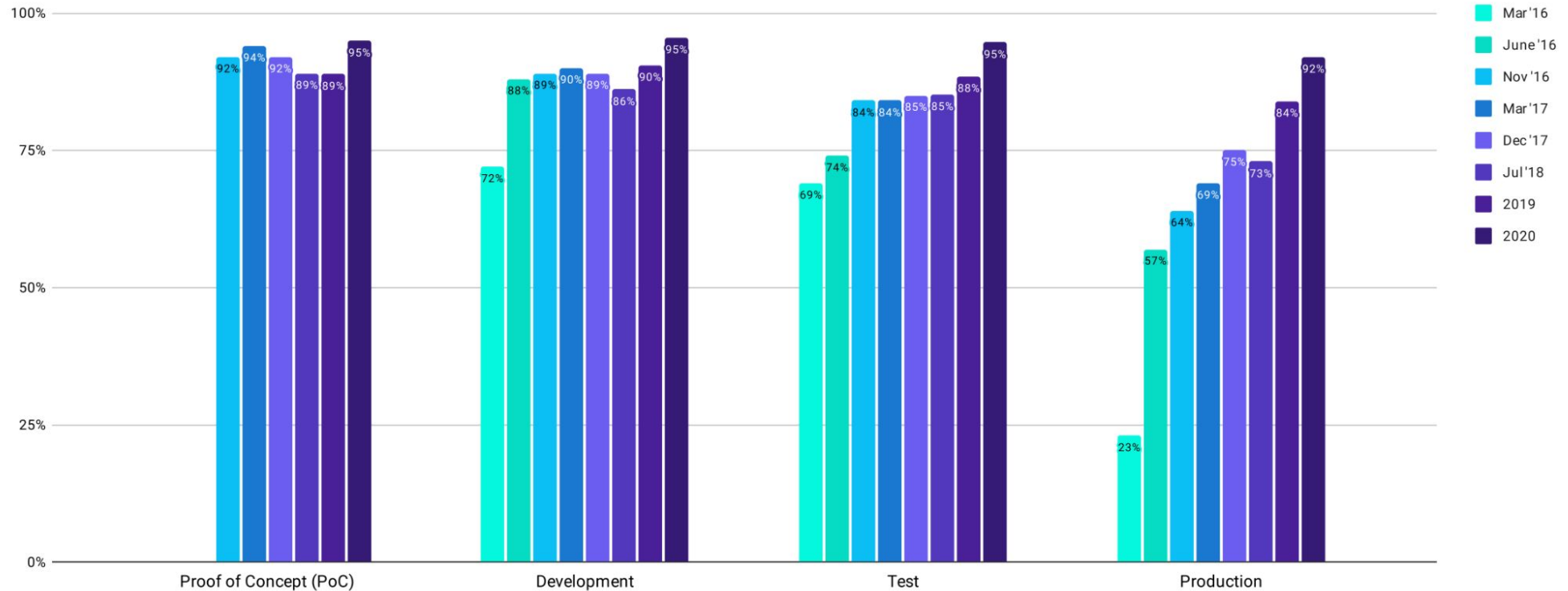




Nutzt Ihr Kubernetes und/oder Container?

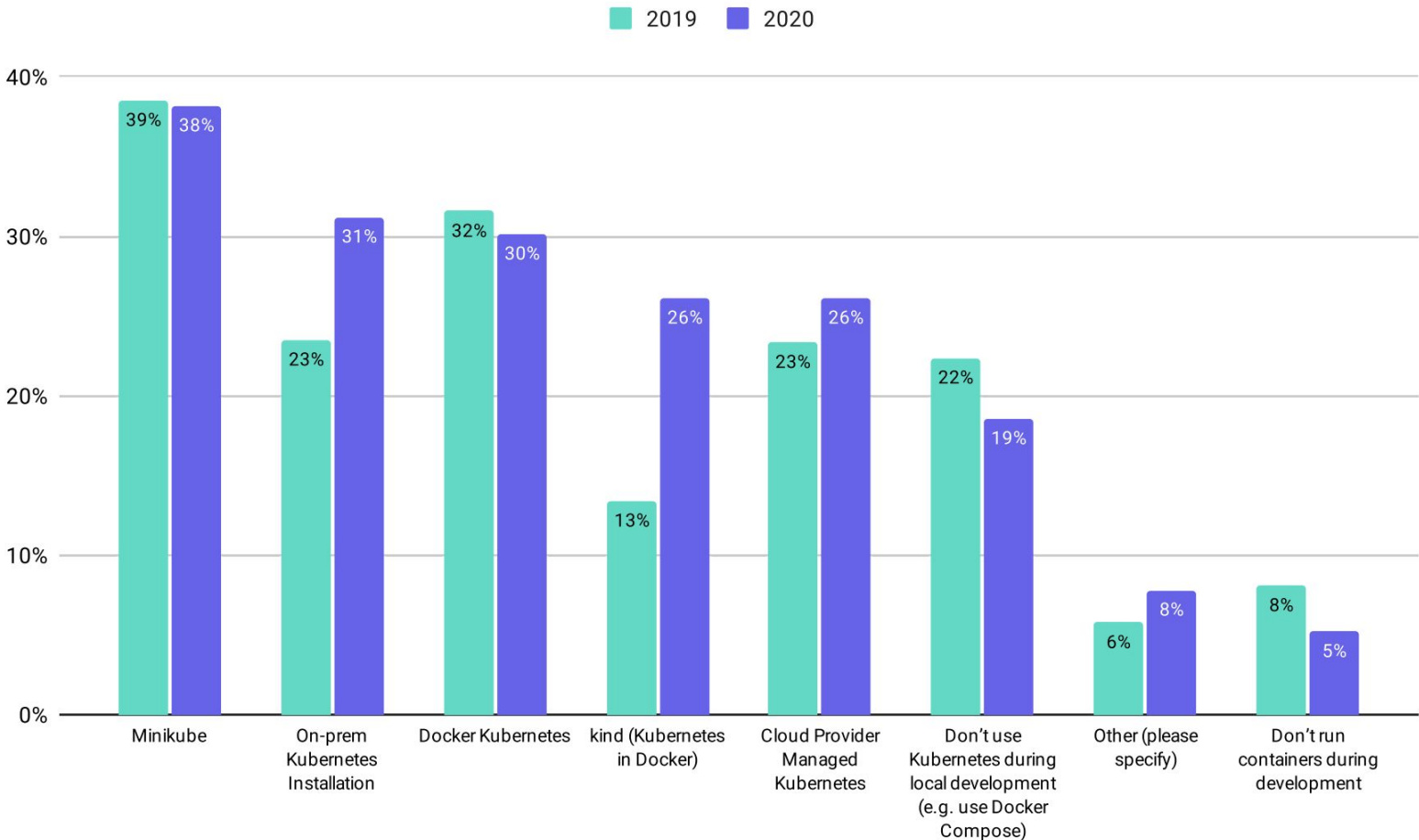
- 1) Ja, Kube in Prod!
- 2) Ne. Ich/wir spielen nur mit Kube!
- 3) Container only meistens.
- 4) Alles zu neu. Legacy FTW!

Future plans to use containers in ...



This year(2020), 91% of respondents report using Kubernetes, 83% of them in production. This continues a steady increase from 78% last year and 58% in 2018.

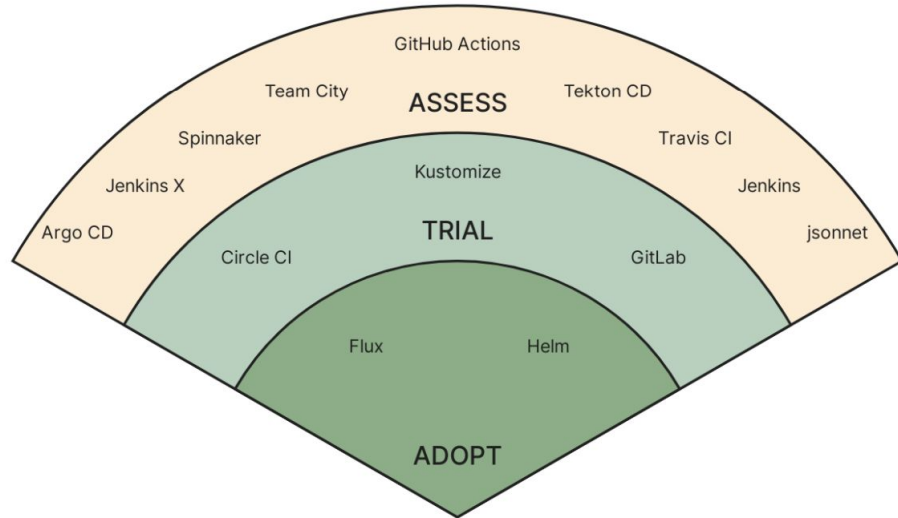
Which K8 distro are you using for development?



Cloud Native Technologies

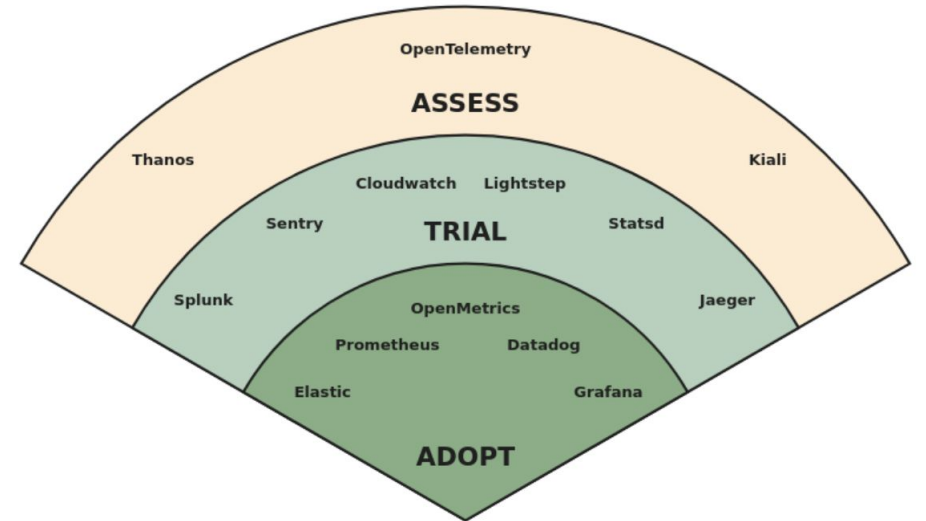
CNCF Technology Radar

Continuous Delivery, June 2020



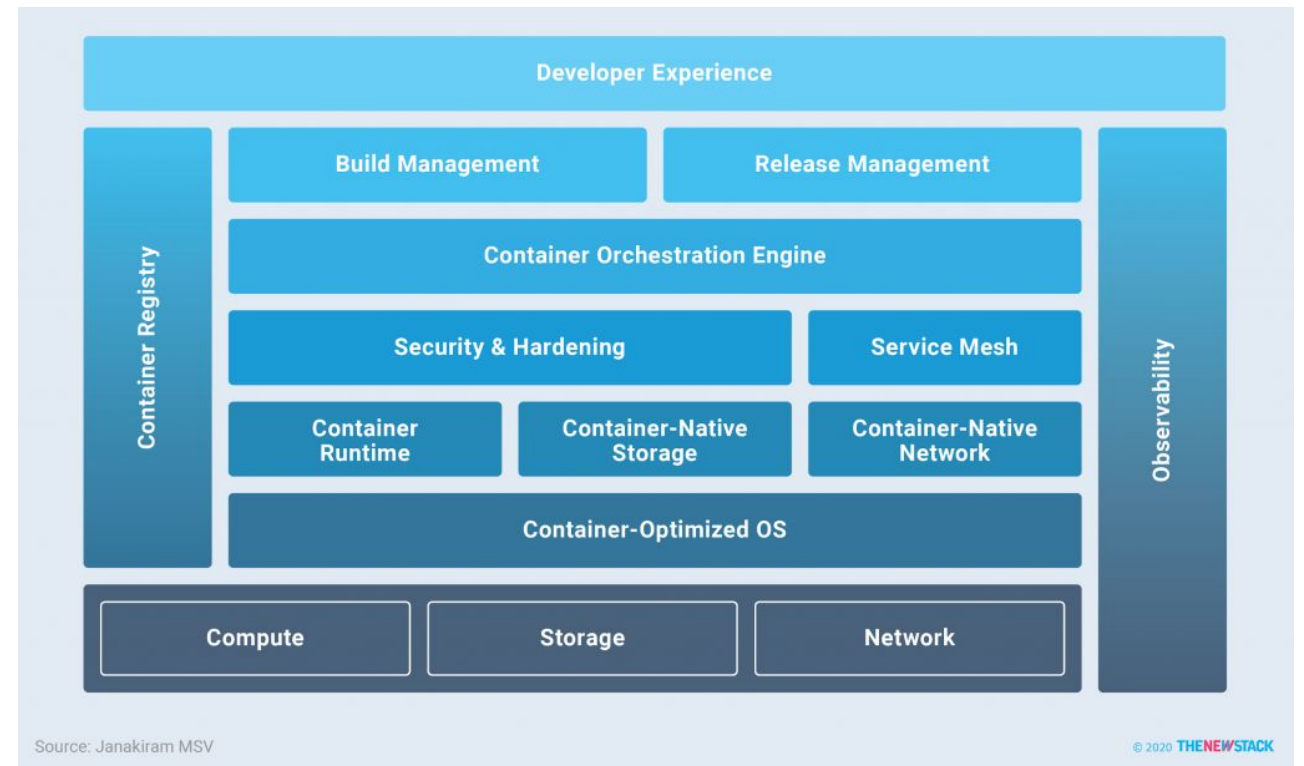
CNCF Technology Radar

Observability, September 2020



Der Cloud Native Stack

Service Mesh	App-Services	DB-Services
CI/CD	DNS	Authentication
Monitoring	xKS Service	Automation
Logging	Registry	Security
Compute	Storage	Network

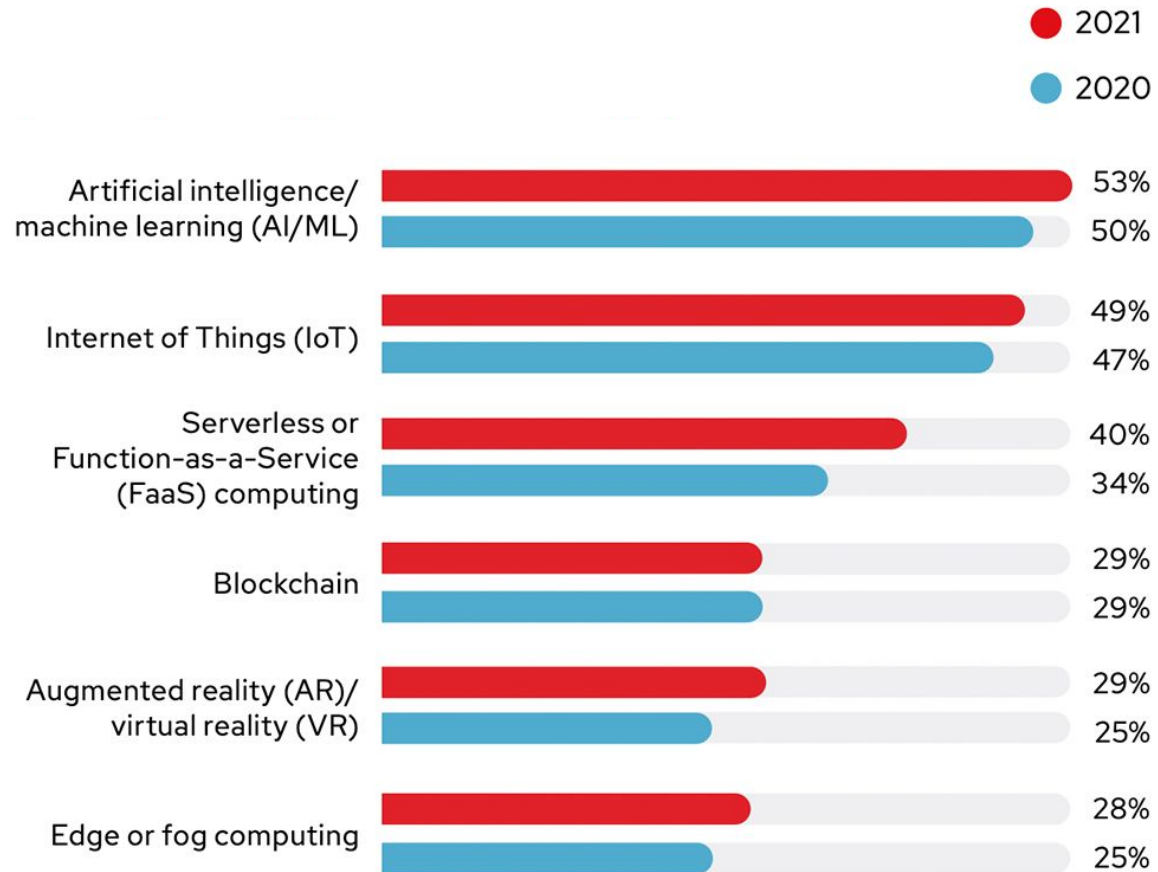


Blickt ihr da durch?

- 1) Ja, CNA in Prod! ;-) Ops hat nix mehr zu sagen. 🗑️
- 2) Macht alles Ops für uns. 🙋
- 3) Nee. Wir basteln noch. 😊
- 4) Hab(en) aufgegeben. Lasse das andere machen. 🍻



Und es kommt noch mehr ...

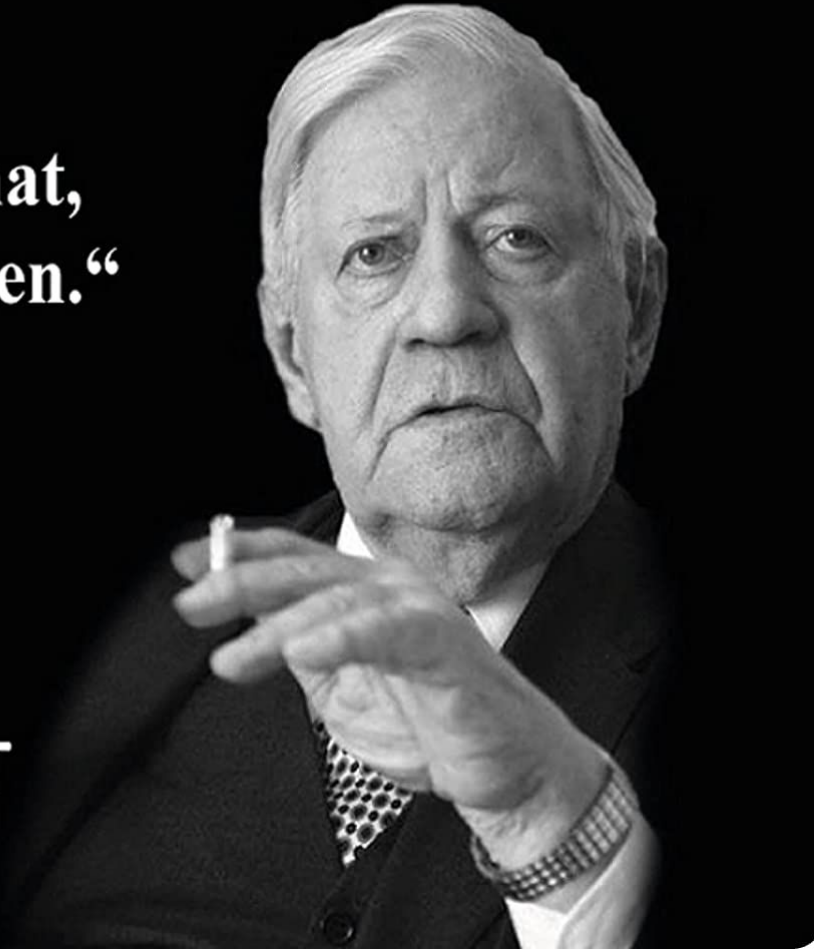




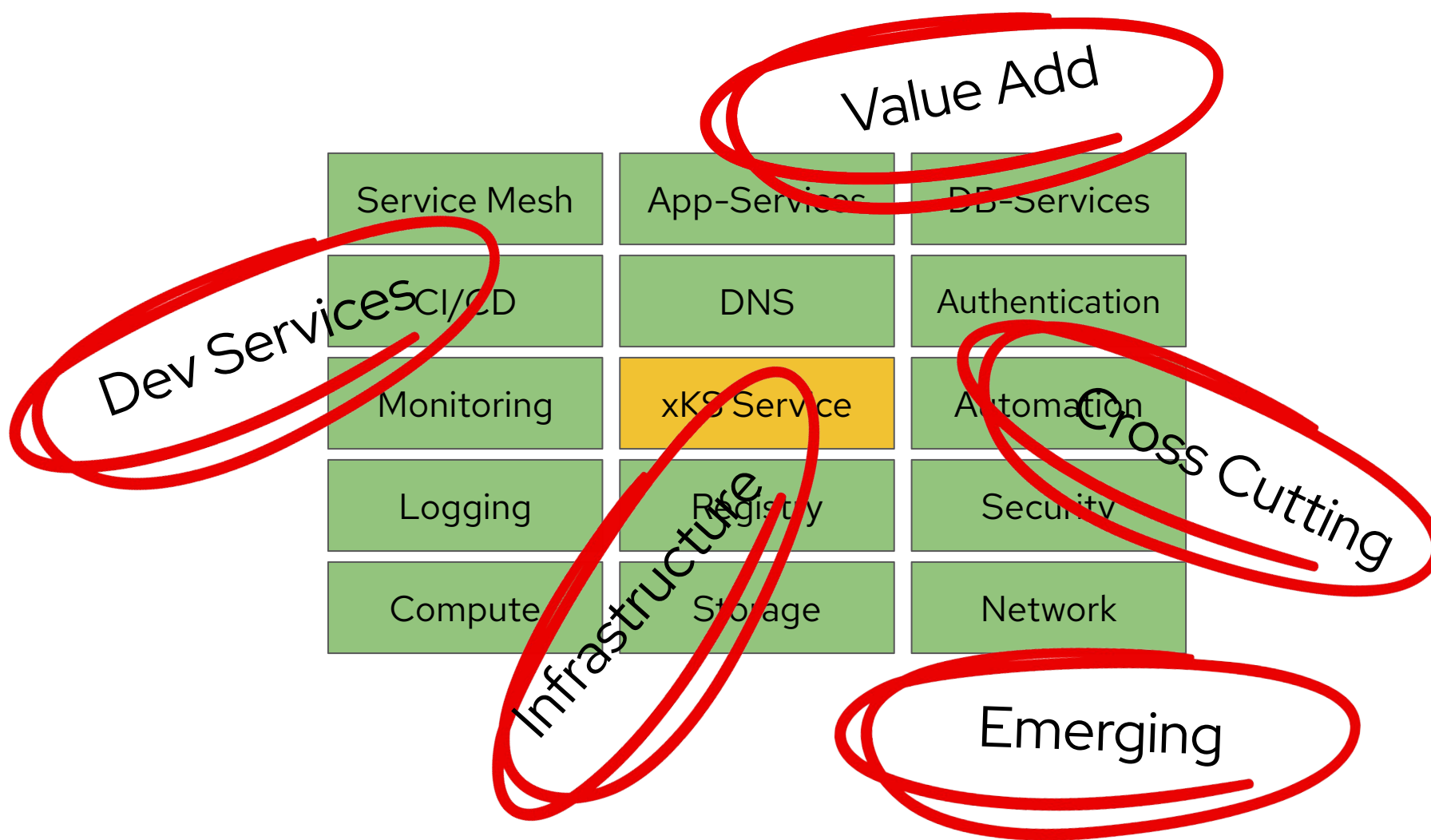
**“Wer Visionen hat,
soll zum Arzt gehen.“**

HELMUT SCHMIDT

1918 - 2015



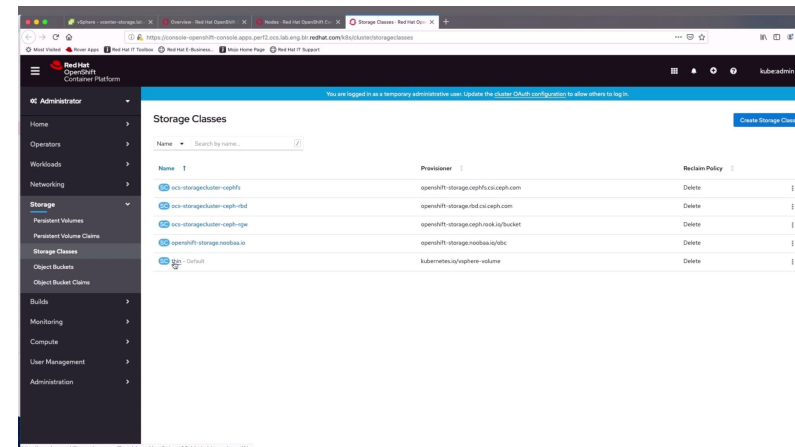




Was passiert bei der Infrastruktur?

- Storage / Datenhaltung
- Container/VMs/Unikernels/MicroVMs
- Zunehmende Abstraktion
- Orchestrierung

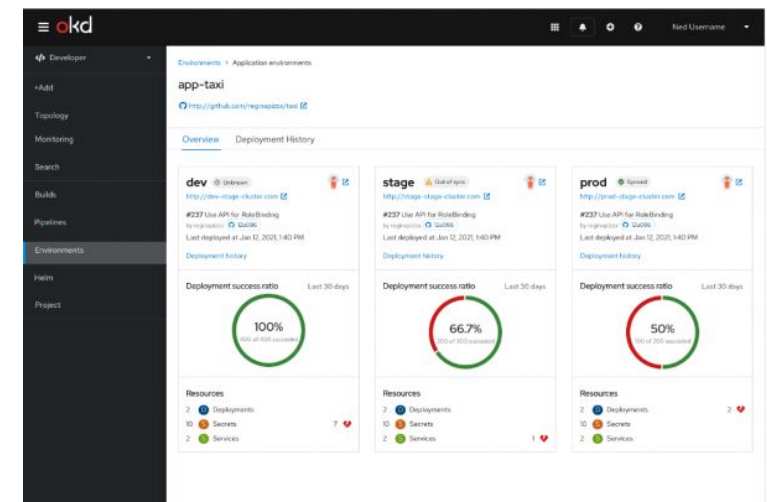
Infrastructure



Was passiert bei Cross-Cutting Concerns?

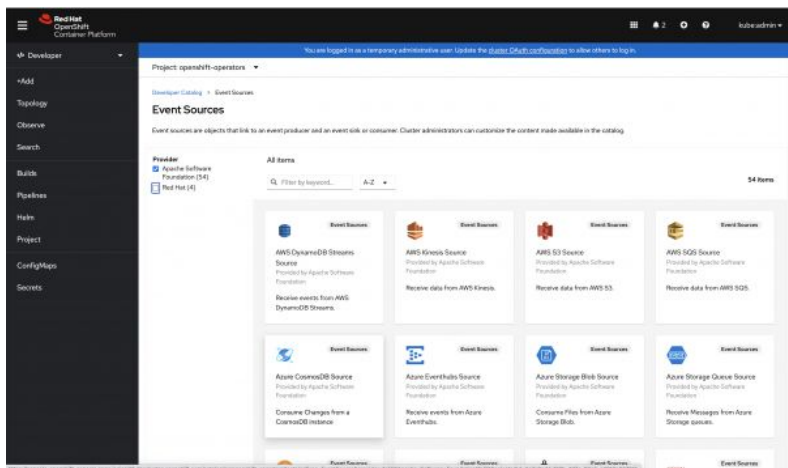
- Secure Data / Full disk and VM encryption in memory
- Secure Applications / Integrated IAM in hybrid clouds.
- Security for developers!
- Helm vs. Ansible vs. Operators vs. Terraform / GitOps
- Secrets Management
- Multi Cluster Management ([Skupper](#), Istio, [Cilium](#))

Cross Cutting





- 80/20 pareto principle
- Extension mechanism ([Quarkiverse](#), [Operatorhub.io](#), [Kamlets](#))
- [CloudEvents](#)
- Database [Access](#)
- ...



Project: redhat-dbaas-operator

Installed Operators > Operator details

OpenShift Database Access Operator
0.1.3 provided by Red Hat

Actions

Details | YAML | Subscription | Events | Provider Account

DBaaSInventories

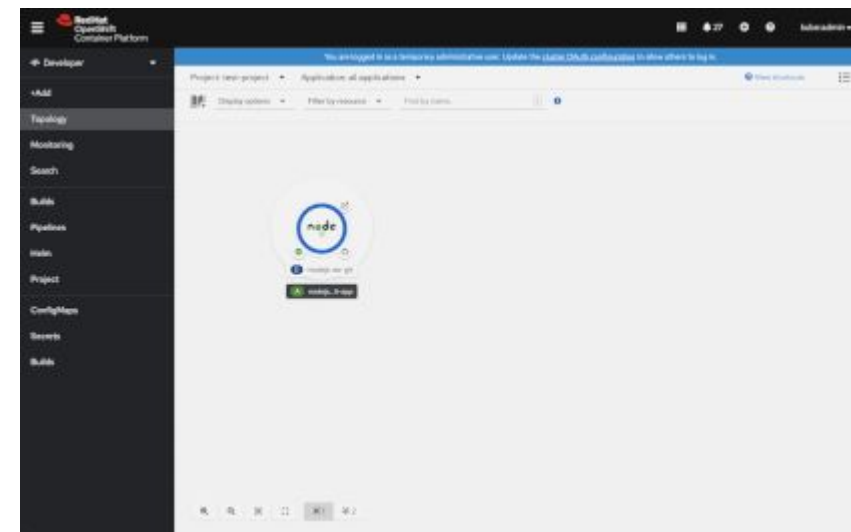
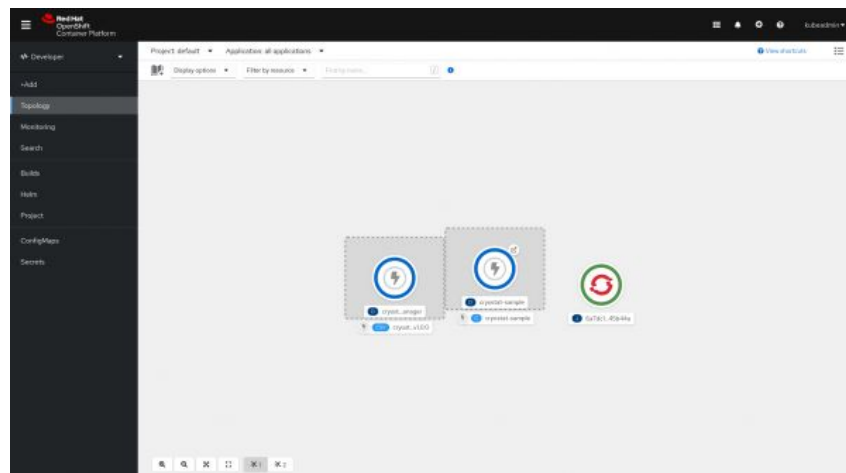
Create DBaaSInventory

Name Search by name...

Name	Kind	Status	Labels	Last updated
dbaas-provider-crunchy-oct23-veera	DBaaSInventory	Condition: SpecSynced	related-to=dbaas-operator type=dbaas-vendor-service	Oct 22, 2021, 1:45 PM
dbaas-provider-mongo-oct23-veera	DBaaSInventory	Condition: SpecSynced	related-to=dbaas-operator type=dbaas-vendor-service	Oct 22, 2021, 1:47 PM

- Complexity moving up the stack
- Local vs. Remote development
- Visuelle Komposition von Services
- Autokonfiguration (Queues, Topics, Deployments)
- Cryostat
- Quarkus Dev Console
- ...

Dev Services

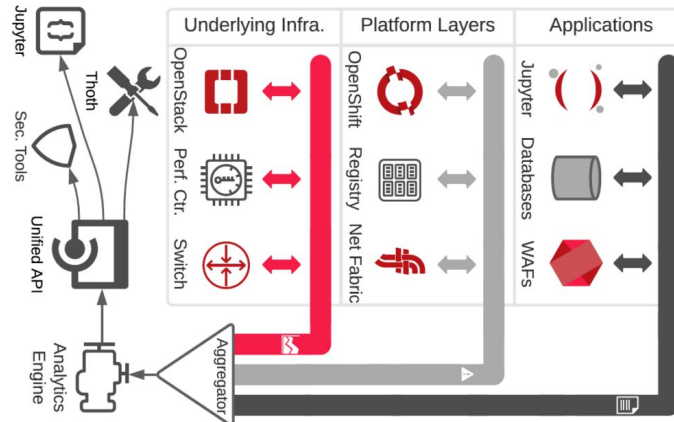


Wo und wie entwickelt ihr für container?

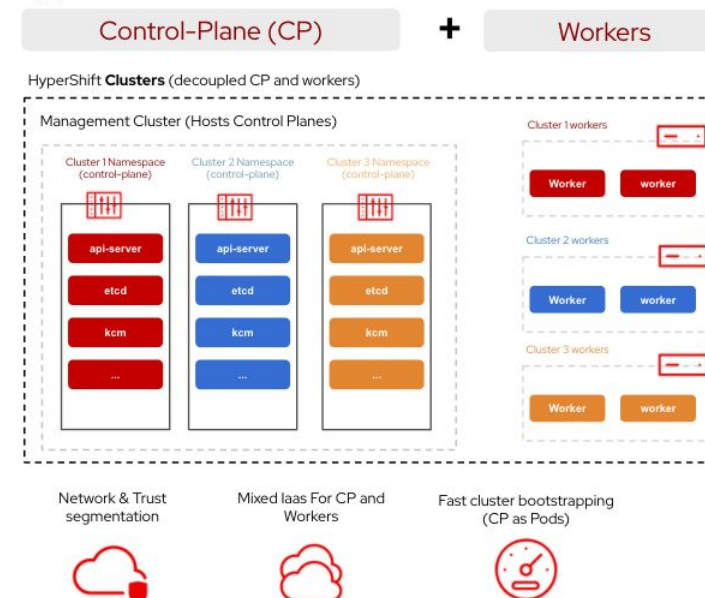
- 1) Local! Wir pushen selbst in ne Registry
- 2) CI/CD. Wir pushen nur Code.
- 3) Remote K8 Dev Env.
- 4) Wo grad Platz ist.

Emerging

- [MicroShift](#) / [HyperShift](#) / IoT and EDGE
- AI/ML ([Cloud Ops](#), ML Ops)
- Data Synchronization
- ModelOps / Kubeflow / [OpenDataHub](#)
- ...



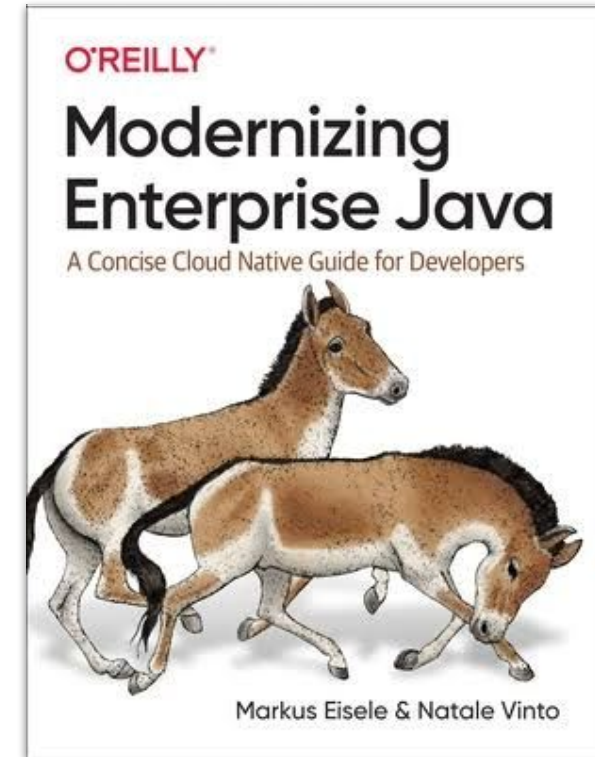
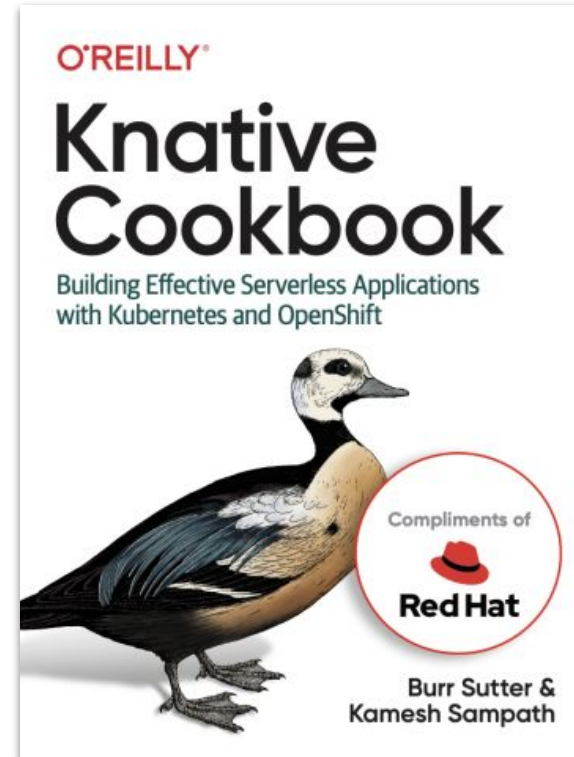
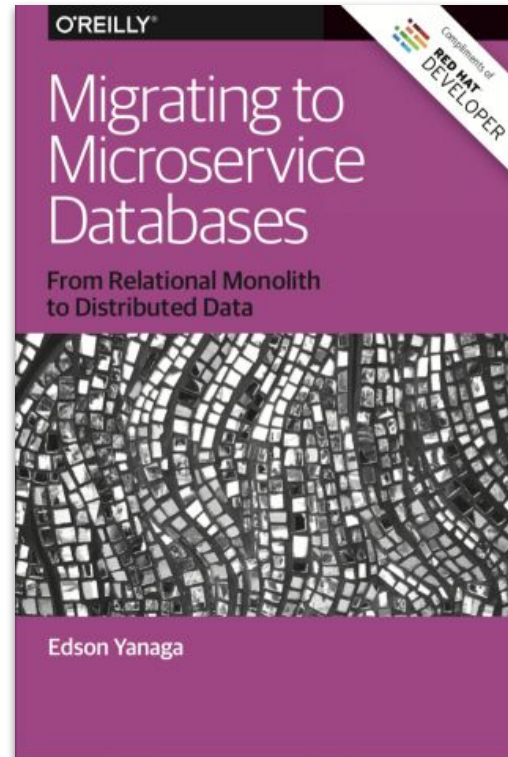
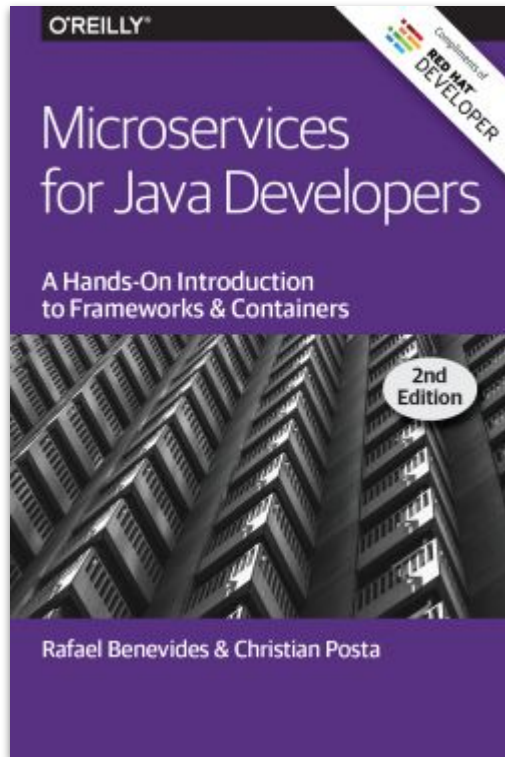
HyperShift



<https://red.ht/demo-onestop-ext>

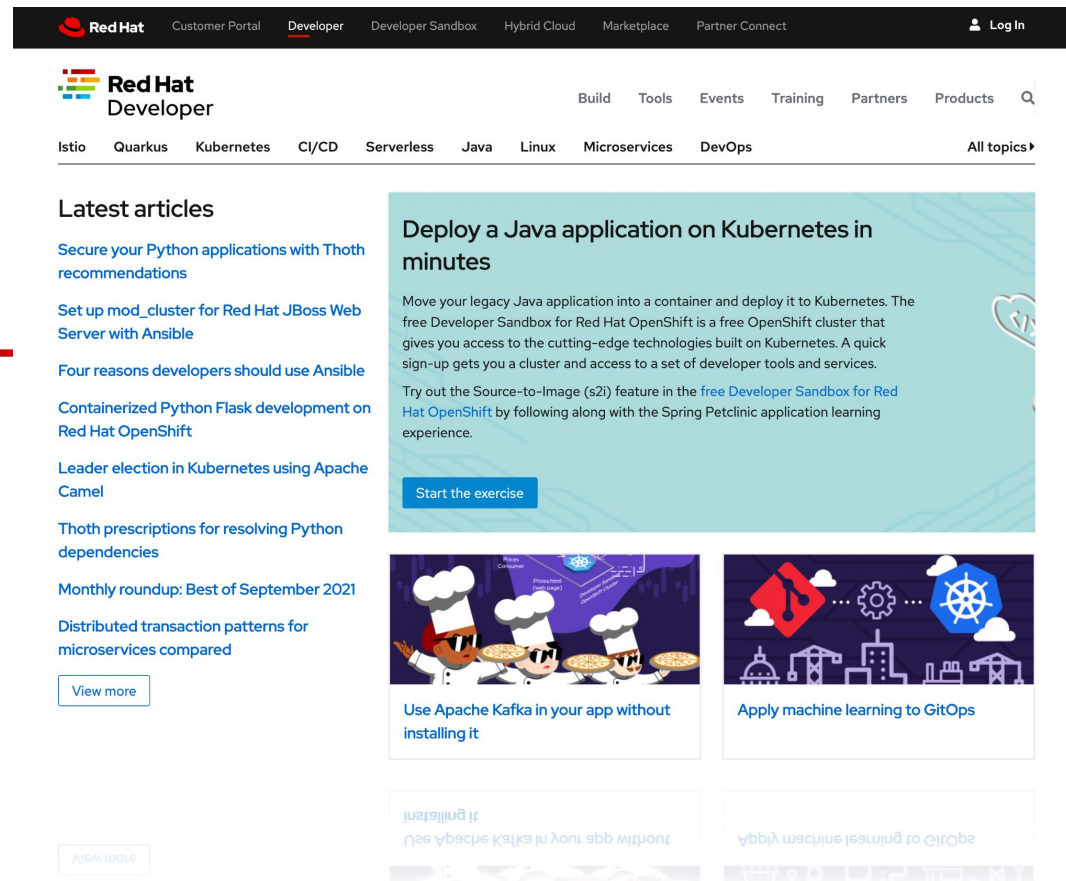
<https://rh-aieservices-bu.github.io/licence-plate-workshop/>

Further Reading



Red Hat Developer

developers.redhat.com



The screenshot shows the Red Hat Developer website homepage. At the top, there is a navigation bar with the Red Hat logo and links for Customer Portal, Developer, Developer Sandbox, Hybrid Cloud, Marketplace, and Partner Connect. A 'Log In' button is on the right. Below this is a secondary navigation bar with the Red Hat Developer logo and links for Build, Tools, Events, Training, Partners, and Products. A third navigation bar lists various technologies: Istio, Quarkus, Kubernetes, CI/CD, Serverless, Java, Linux, Microservices, and DevOps, with an 'All topics' link on the right. The main content area is divided into two columns. The left column is titled 'Latest articles' and lists several articles with their titles and a 'View more' button at the bottom. The right column features a large article titled 'Deploy a Java application on Kubernetes in minutes' with a 'Start the exercise' button. Below this are two smaller article cards: 'Use Apache Kafka in your app without installing it' and 'Apply machine learning to GitOps'. The bottom of the page shows a 'View more' button for the second column of articles.

Red Hat Customer Portal **Developer** Developer Sandbox Hybrid Cloud Marketplace Partner Connect Log In

Red Hat Developer Build Tools Events Training Partners Products

Istio Quarkus Kubernetes CI/CD Serverless Java Linux Microservices DevOps All topics

Latest articles

- [Secure your Python applications with Thoth recommendations](#)
- [Set up mod_cluster for Red Hat JBoss Web Server with Ansible](#)
- [Four reasons developers should use Ansible](#)
- [Containerized Python Flask development on Red Hat OpenShift](#)
- [Leader election in Kubernetes using Apache Camel](#)
- [Thoth prescriptions for resolving Python dependencies](#)
- [Monthly roundup: Best of September 2021](#)
- [Distributed transaction patterns for microservices compared](#)

[View more](#)

Deploy a Java application on Kubernetes in minutes

Move your legacy Java application into a container and deploy it to Kubernetes. The free Developer Sandbox for Red Hat OpenShift is a free OpenShift cluster that gives you access to the cutting-edge technologies built on Kubernetes. A quick sign-up gets you a cluster and access to a set of developer tools and services.

Try out the Source-to-Image (s2i) feature in the [free Developer Sandbox for Red Hat OpenShift](#) by following along with the Spring Petclinic application learning experience.

[Start the exercise](#)

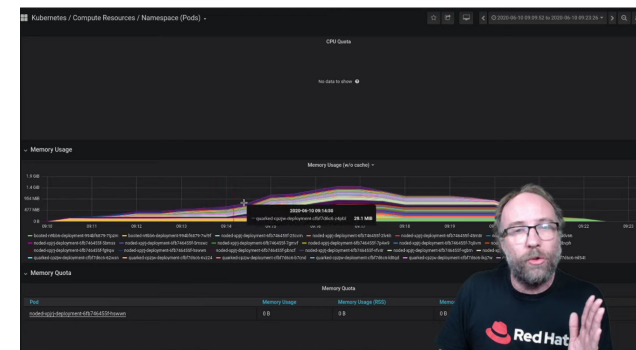
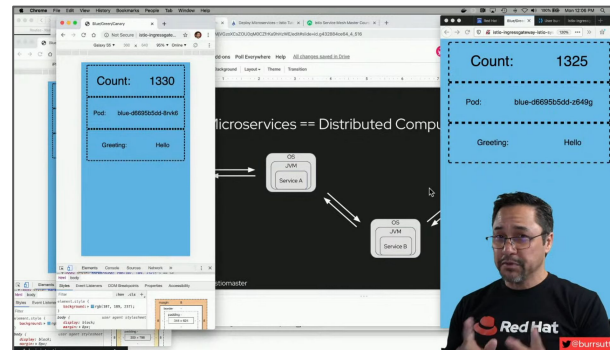
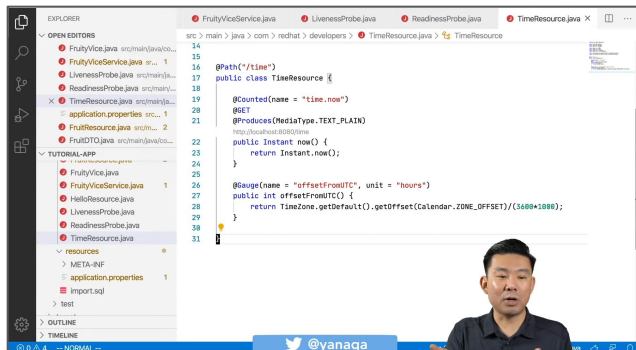
Use Apache Kafka in your app without installing it

Apply machine learning to GitOps

[View more](#)

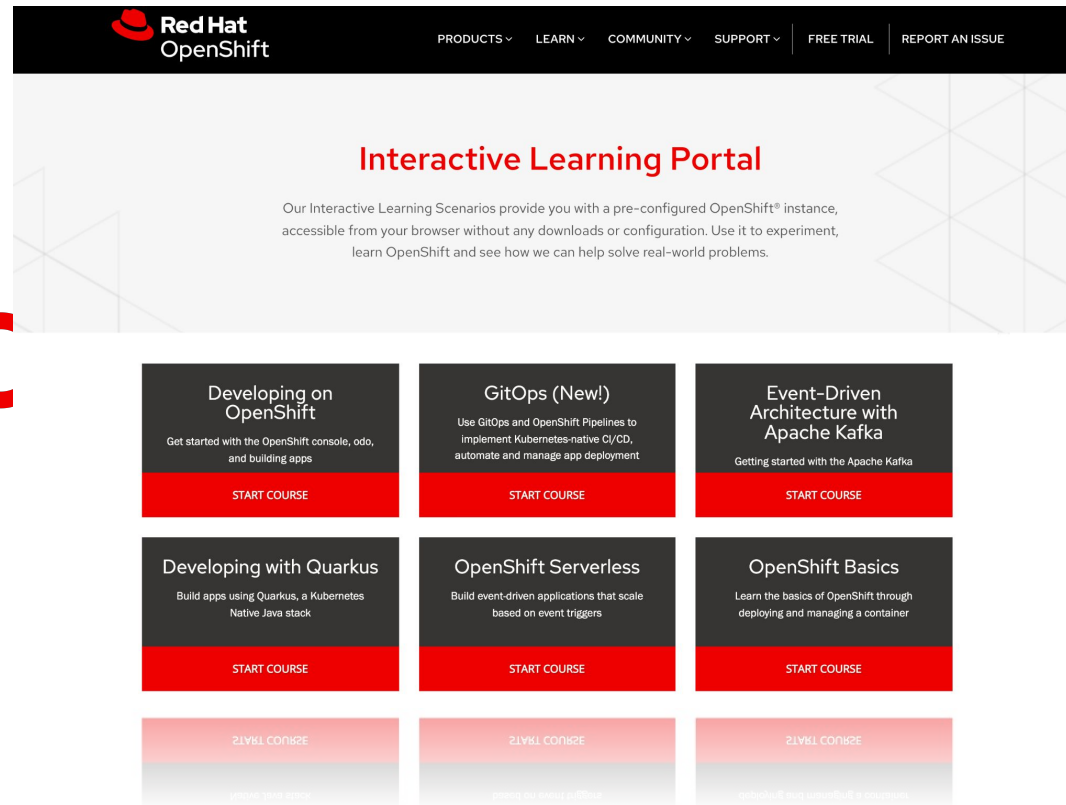


Visit <https://dn.dev/upcoming> for the schedule of upcoming events



Red Hat OpenShift

learn.openshift.com

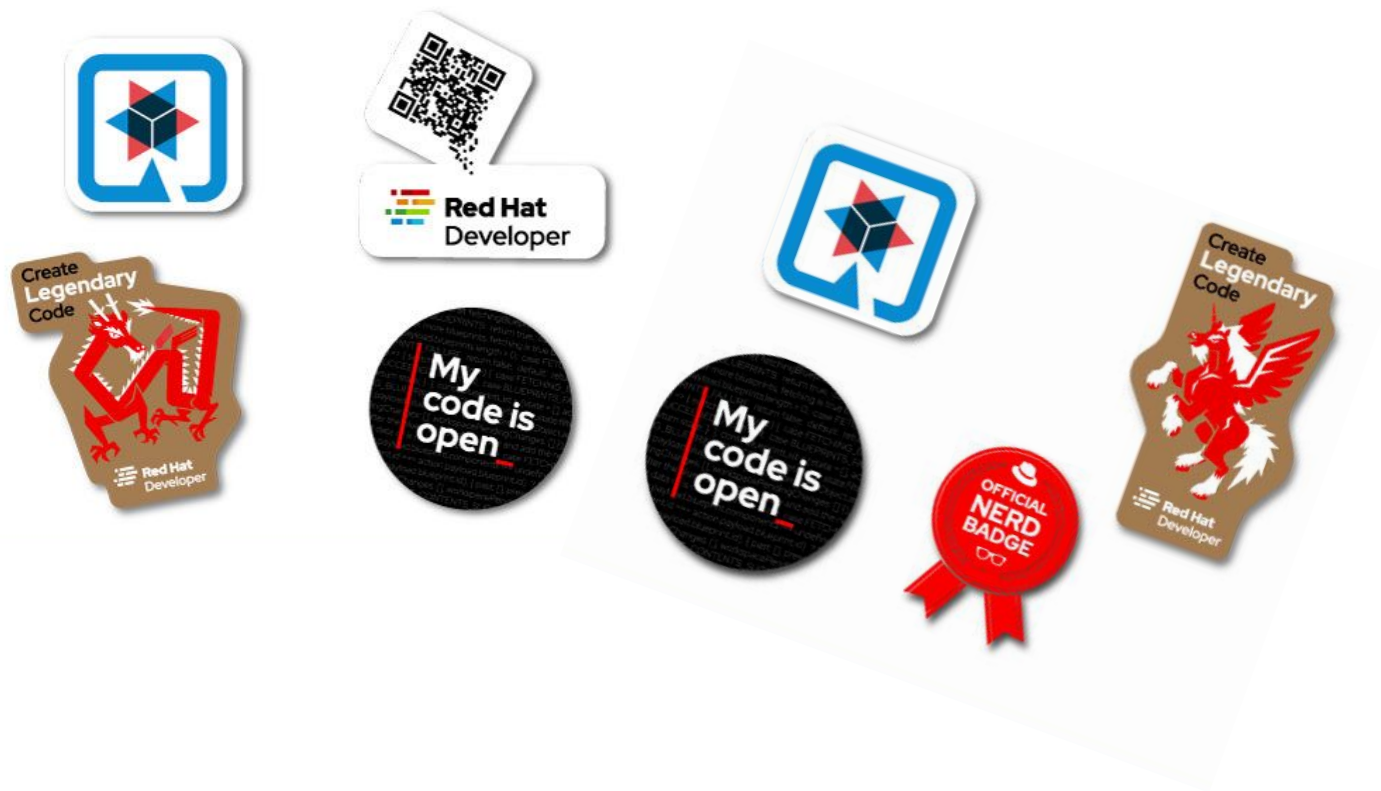


The screenshot shows the Red Hat OpenShift website's learning portal. At the top is a navigation bar with the Red Hat OpenShift logo and links for PRODUCTS, LEARN, COMMUNITY, SUPPORT, FREE TRIAL, and REPORT AN ISSUE. The main heading is "Interactive Learning Portal". Below this is a paragraph: "Our Interactive Learning Scenarios provide you with a pre-configured OpenShift® instance, accessible from your browser without any downloads or configuration. Use it to experiment, learn OpenShift and see how we can help solve real-world problems." The page features a grid of six course cards, each with a "START COURSE" button. The cards are: "Developing on OpenShift" (Get started with the OpenShift console, odo, and building apps), "GitOps (New!)" (Use GitOps and OpenShift Pipelines to implement Kubernetes-native CI/CD, automate and manage app deployment), "Event-Driven Architecture with Apache Kafka" (Getting started with the Apache Kafka), "Developing with Quarkus" (Build apps using Quarkus, a Kubernetes Native Java stack), "OpenShift Serverless" (Build event-driven applications that scale based on event triggers), and "OpenShift Basics" (Learn the basics of OpenShift through deploying and managing a container). There are also three faded cards at the bottom of the grid.



developers.redhat.com/developer-sandbox

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Q&A

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.



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