Three Questions

You should ask yourself when deciding on a technology strategy around container & kubernetes.

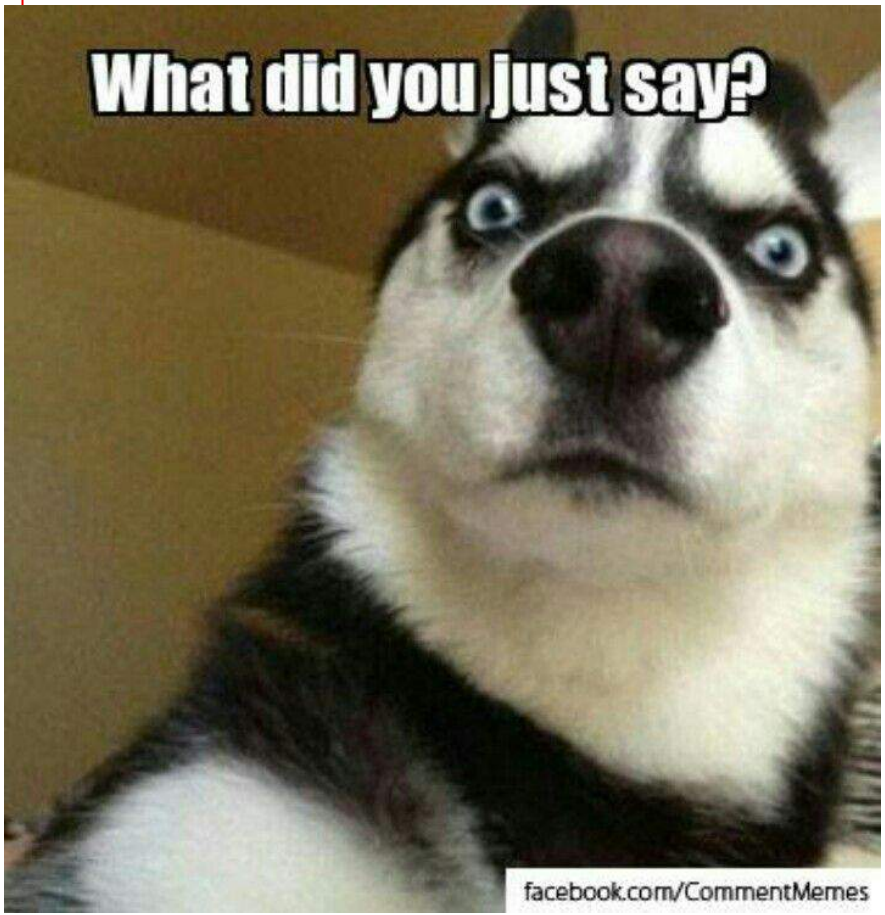
Franz Theisen
Business Development
Manager Hybrid Cloud

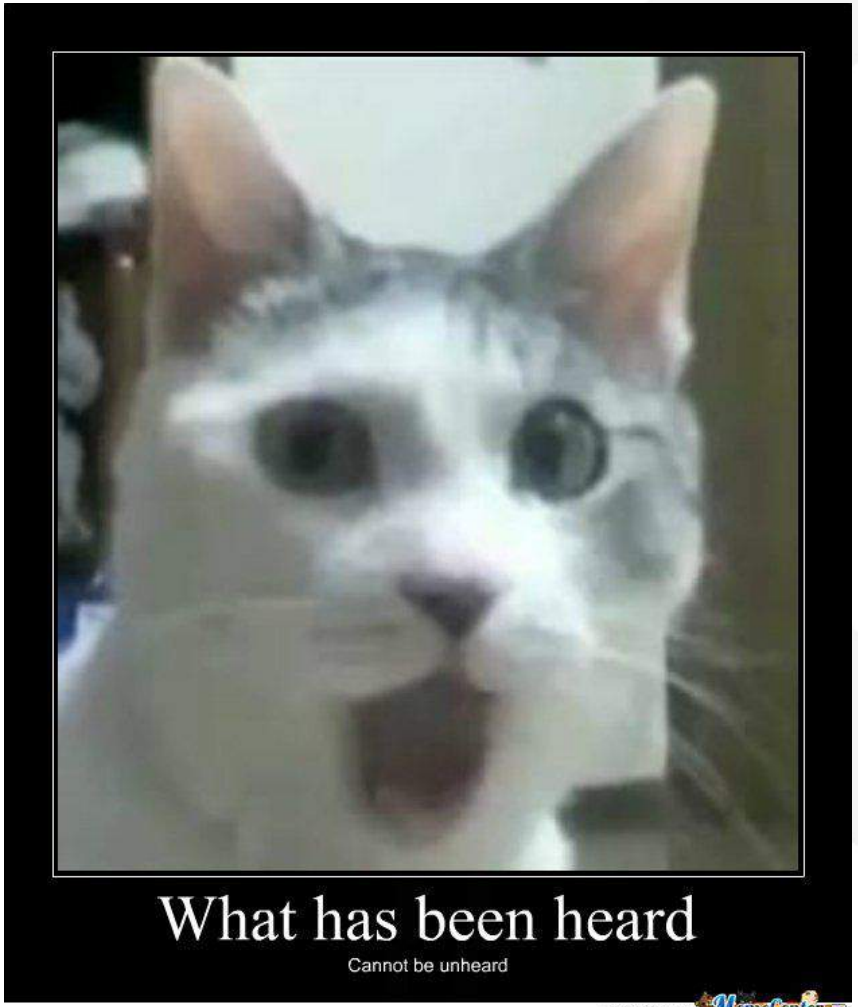
0) Should you even care?

Red Hat

No one in their right mind should about kubernetes.*

Red Hat

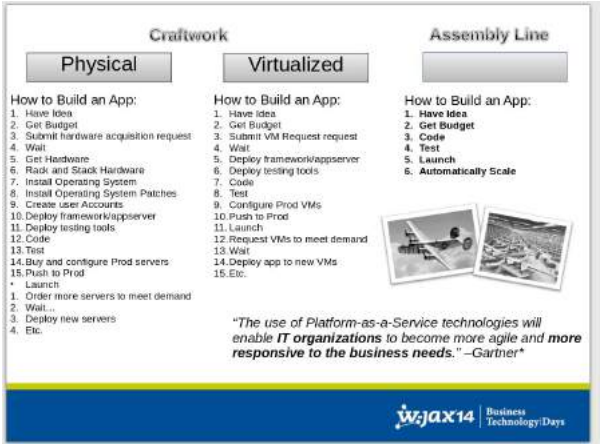

What did you just say?
facebook.com/CommentMemes

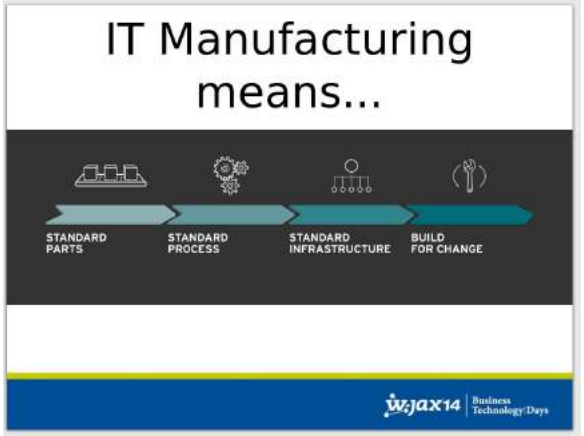

What has been heard
Cannot be unheard
memecenter.com
MemeCenter

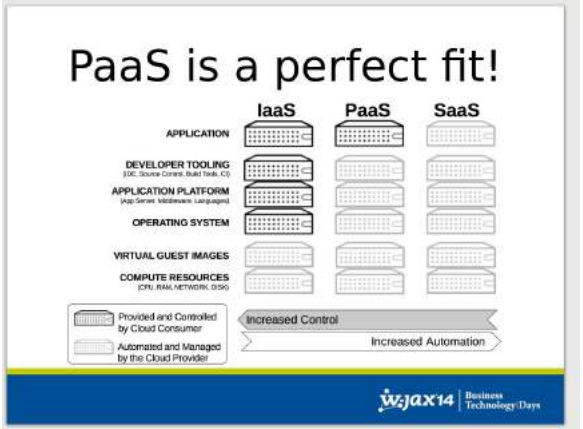
OpenShift IS enterprise kubernetes.
But that's just coincidence!

Red Hat

The story everyone forgot during the kubernetes craze 2017+







... but it seems like a lot of us built kubernetes silos instead of a PaaS!

Red Hat

Kubernetes done right is hard - the todo list grows

INSTALL	DEPLOY	HARDEN	OPERATE
• Templating	• Identity & security access	• Platform monitoring & alerts	• OS upgrade & patch
• Validation	• App monitoring & alerts	• Metering & chargeback	• Platform upgrade & patch
• OS setup	• Storage & persistence	• Platform security hardening	• Image upgrade & patch
	• Egress, ingress, & integration	• Image hardening	• App upgrade & patch
	• Host container images	• Security certifications	• Security patches
	• Build/Deploy methodology	• Network policy	• Continuous security scanning
	• Choice of footprint size	• Disaster recovery	• Multi-environment rollout
		• Resource segmentation	• Enterprise container registry
			• Cluster & app elasticity
			• Monitor, alert, remediate
			• Log aggregation

75%

of enterprise users identify complexity of implementation and operations as the top blocker to adoption

Source: The New Stack. *The State of the Kubernetes Ecosystem*, August 2017.

Red Hat

You want a PaaS.

No Exceptions.

Red Hat

1) Does kubernetes differentiate my company?

Buy vs. Build

Red Hat

1) Does kubernetes differentiate my company? Buy vs. Build

HPE Plunges Into Red Hot Kubernetes Market

HPE Container Platform 5.0 is the first version of that product built on the open source technology that's become a de facto infrastructure standard. HPE recommends bare-metal deployment of its Kubernetes service when running on-premises, saying it's solved noisy neighbor and security concerns that typically force enterprises to pay for virtualization overhead

By Joseph Tsidulko — March 09, 2020, 02:00 AM EDT

Cisco Unveils Kubernetes Platform

January 28, 2020 cisco, container as a service, container platform, containers, hyperconverged infrastructure, kubernetes

by Mike Vizard

StorageReview

Home › Enterprise › NetApp Kubernetes Service (NKS) Comes To An End

ENTERPRISE ◇ ENTERPRISE STORAGE

NetApp Kubernetes Service (NKS) Comes To An End

written by Adam Armstrong | March 27, 2020

Through a customer communiqué last week, NetApp announced it would be ending its NetApp Kubernetes Service (NKS). On top of that, the company is ending its NKS on HCI & Cloud Volumes on HCI. The services will be discontinued on April 30, 2020.

Gardener, SAP's Kubernetes-as-a-service open source project, is moving its logging stack to Loki

Published: 15 Jul 2020

Tweet Share

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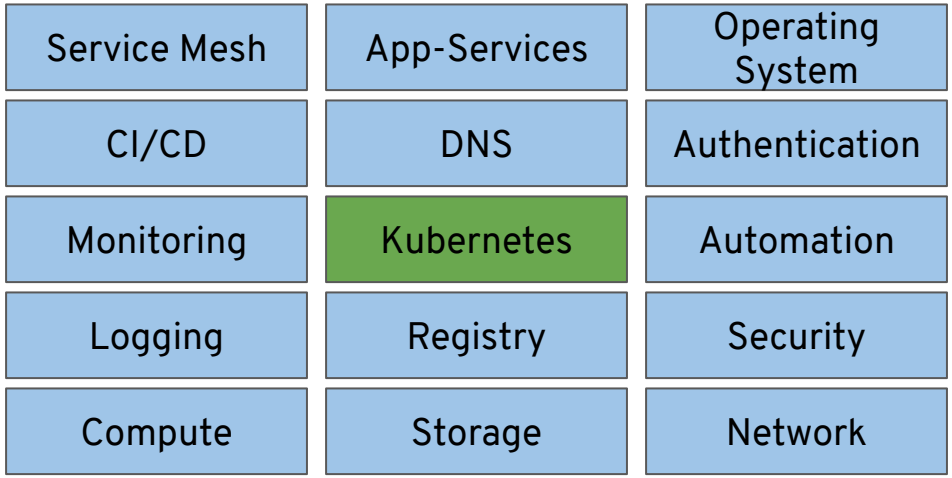
Building a Platform is probably not YOUR business focus



OpenShift allows your technology teams to focus on building business value, not focusing on building and maintaining technology platforms.

- 10-20+ individual services needed to make a platform
- Customer must do integrations and maintenance of integrated tools

Additional costs and integrations

12

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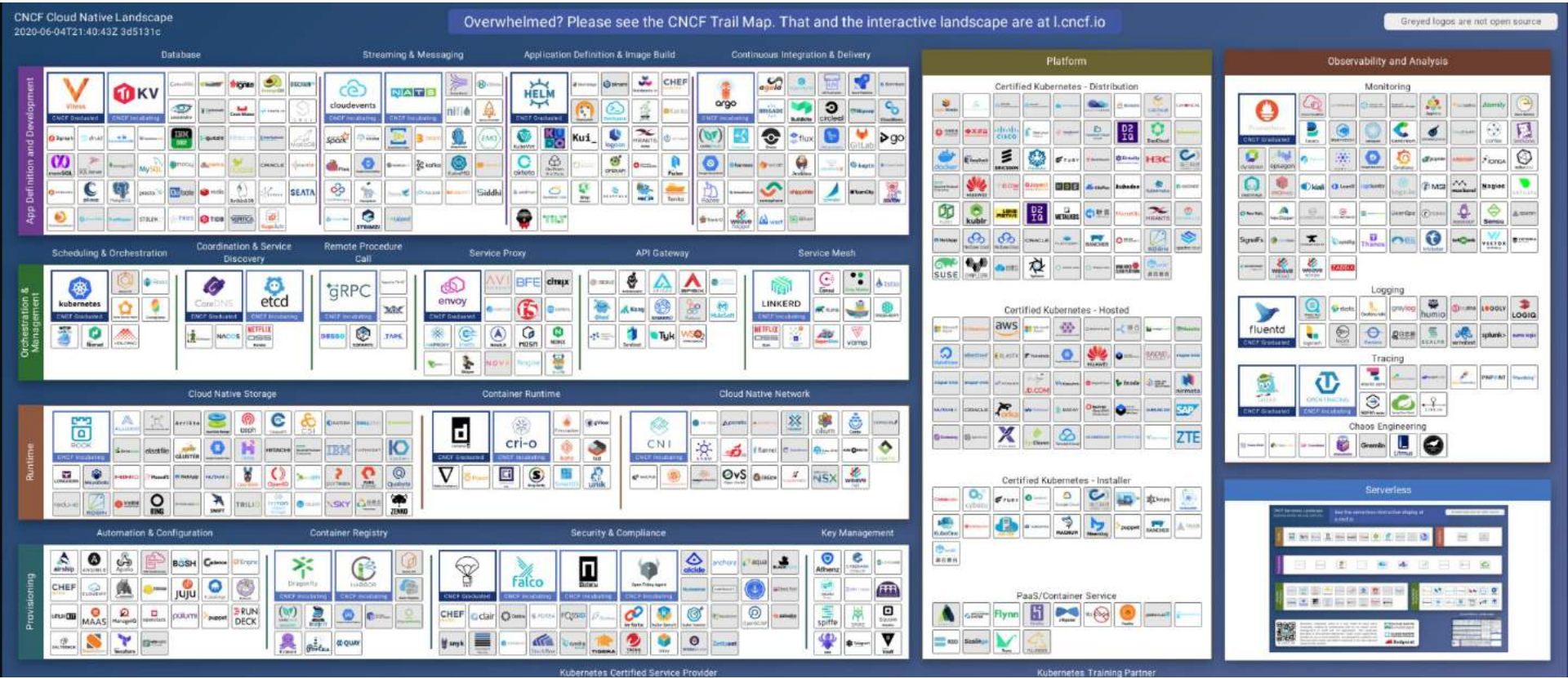
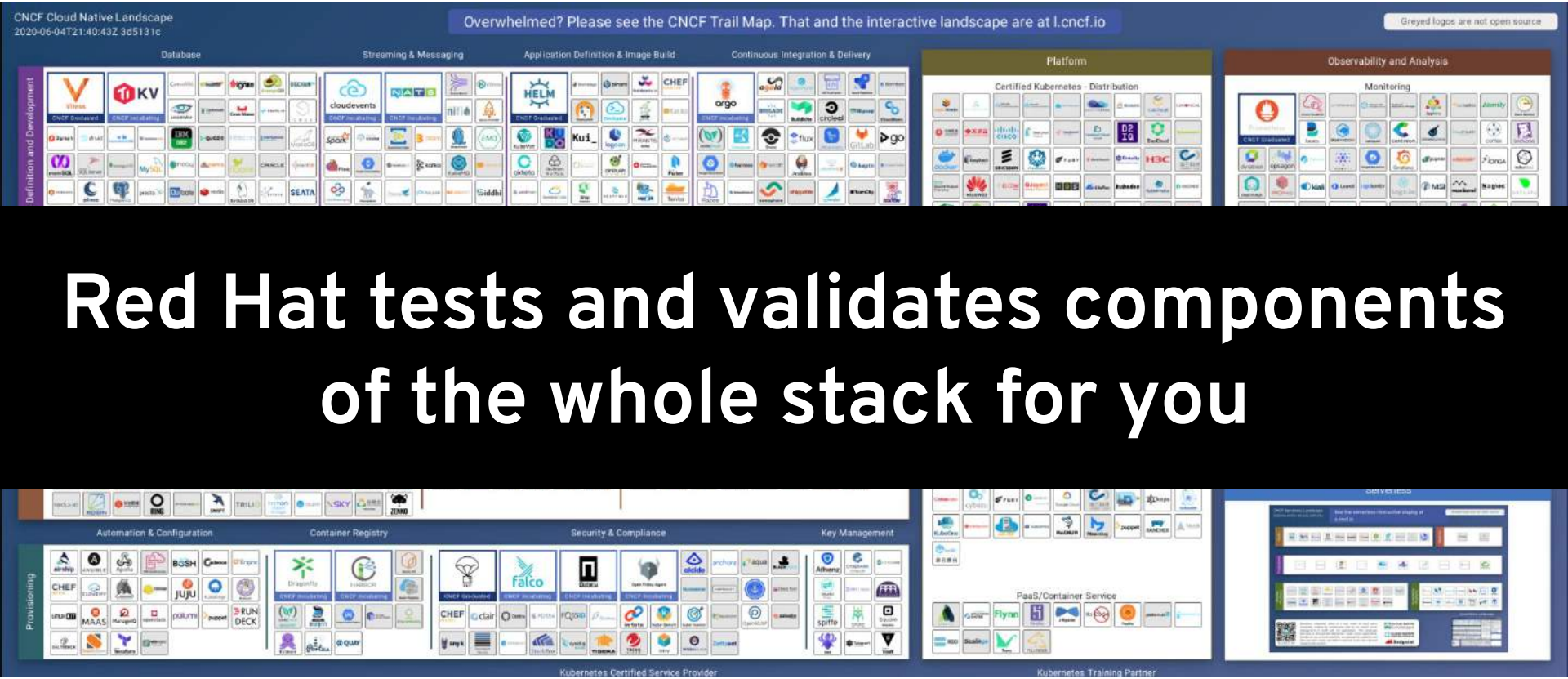
The Cloud Native App Dev Challenge



Red Hat

The Cloud Native App Dev Challenge



Red Hat tests and validates components of the whole stack for you

Red Hat

2) If I wont build my own platform:

WHAT am I buying from WHOM?

Red Hat

2) If I wont build my own platform WHAT am I buying from WHOM?

[Enterprise Container Platform Software Suites, Q4 2018 report]

[Enterprise Container Platform Software Suites, Q3 2020 report]

- “Red Hat and IBM aim to make "build once, deploy anywhere" a reality”
- “both companies' deep commitment to Kubernetes-powered modernization has paid off, **moving OpenShift further ahead of the market** since Forrester's last evaluation.”

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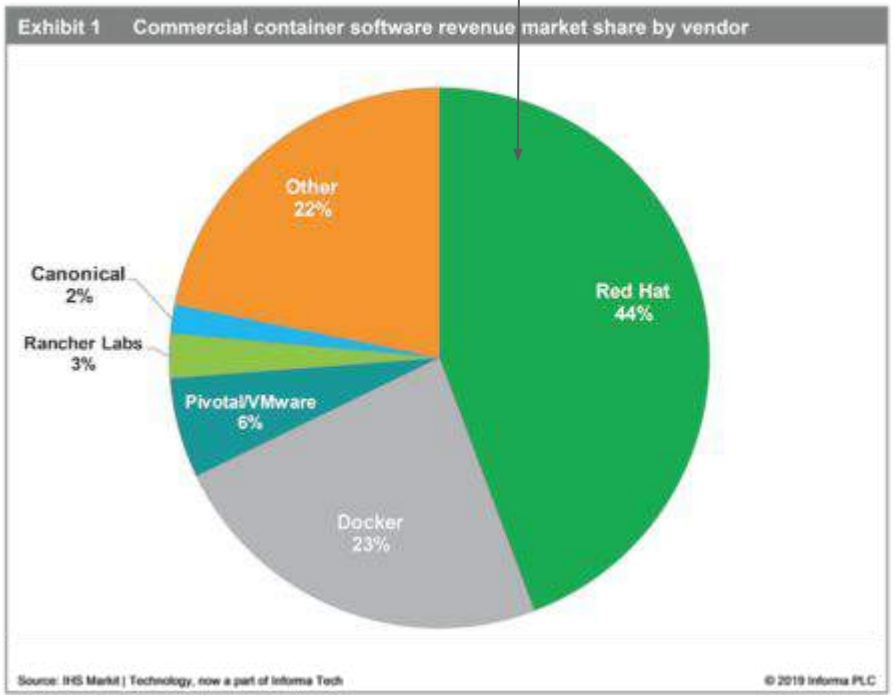
2) If I wont build my own platform WHAT am I buying from WHOM?

Container revenue market share

OPENSHIFT - 44% OF THE MARKET



https://www.fiercetelecom.com/telecom/red-hat-rules-roost-for-container-software-market-revenue-for-now-report

Red Hat

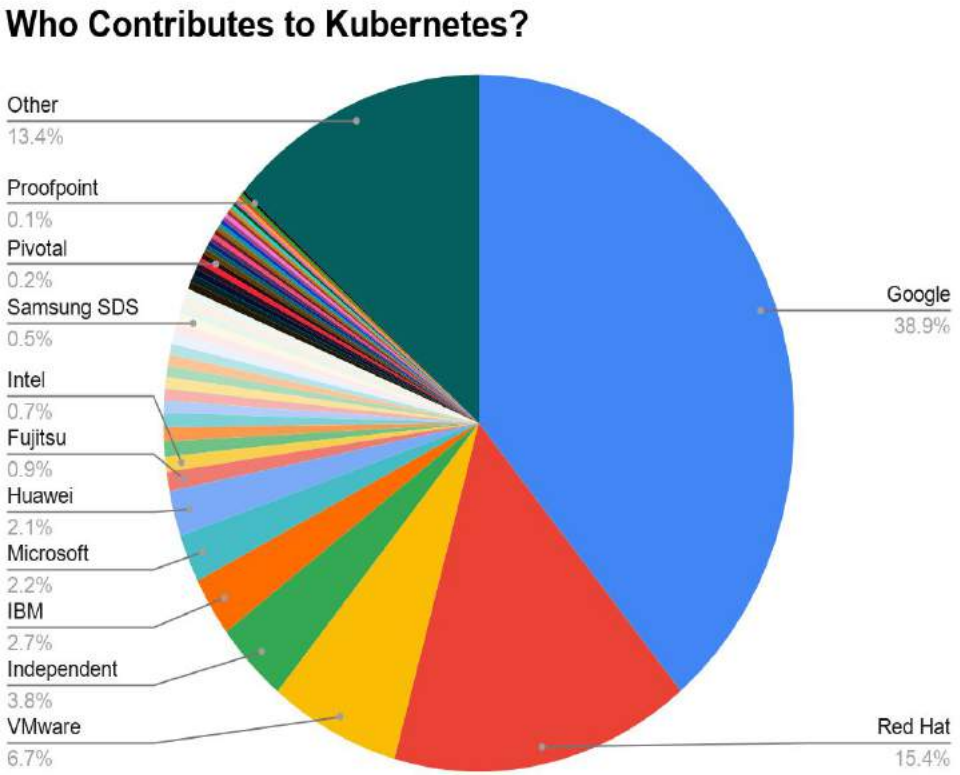
2) If I wont build my own platform WHAT am I buying from WHOM?

Checklist items:

1) Needs to have deep kubernetes experience.

Just in case you are missing the
Other vendors from the Forrester Report:

Mirantis (inkl 0.14% Docker)	0.63%
SUSE	0.53%
Mesosphere (inkl 0.04% D2IQ)	0.38%
Cisco	0.30%
Canonical (inkl 0.02% Ubuntu)	0.10%
HP	0.05%
NetApp	0.03%
Platform9	0.03%
Rancher Labs	0.02%



Source: https://k8s.devstats.cncf.io/d/9/companies-table?orgId=1 (16.09.2020)

2) If I wont build my own platform WHAT am I buying from WHOM?

Checklist items:

2) Shouldnt be a one trick pony:
Kubernetes is not the end game!

“Moving Beyond Kubernetes: Kubernetes is and remains the shooting star of the cloud-native world around which all projects and offers are built. However, a world of technologies is also developing alongside Kubernetes which is becoming increasingly important in practice and is increasingly commoditizing Kubernetes itself. This means that Kubernetes and, above all, its distribution will continue to be important in the long term.

In the future, however, the tools around them will make a difference.

Once Kubernetes is available everywhere in the company, even if in different flavours, the right tools for the development, management, monitoring and optimization of the infrastructure will be needed. Whether tracing, service mesh or visualization of the platforms – any service can make the difference and improve the go-to-market cycles of the applications, reduce operational costs or increase the performance of the platform.

Therefore, the choice of technologies of the Kubernetes ecosystem is becoming more and more a success factor. “

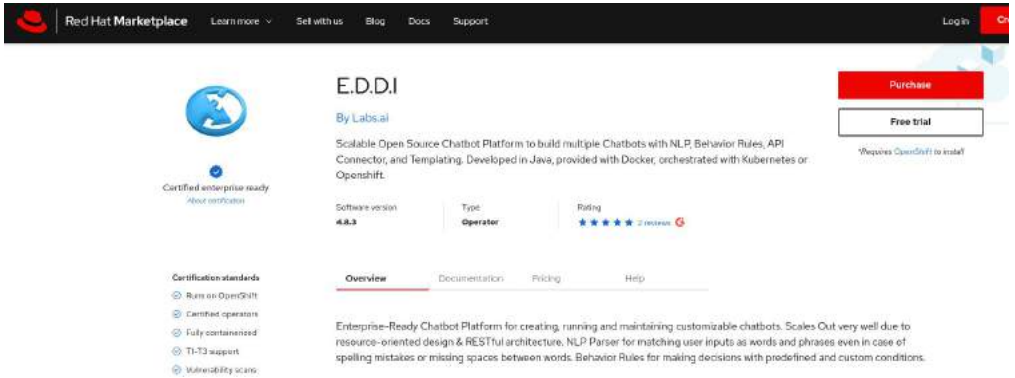
https://www.cloudflight.io/expert-views/the-cloud-native-kubernetes-trends-2020-37918/

Red Hat

2) If I wont build my own platform
WHAT am I buying from WHOM?

Checklist items:

3) How does the ecosystem look like?



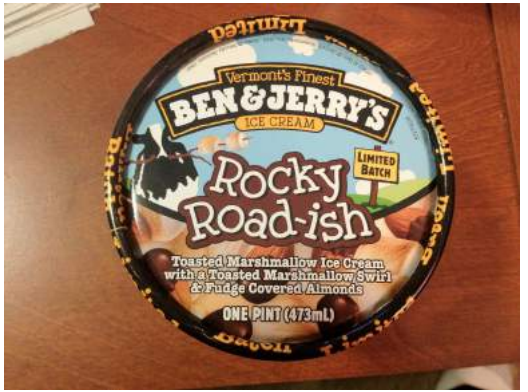
3) Can you “move fast and break your core business”?

Red Hat

3) Will Kubernetes change the fact that I need to run applications secure and to the operational standards of my organization?

Checklist items:

1) Does the solution require you to embrace change such as "the operating system / network / persistent storage doesnt matter any more"
2) Is the decision for a kubernetes based platform pushed by developers who "will take care of everything" from the virtual machine layer upwards?
3) Is security "built in" with sensible defaults or "built on top of" the platform?
4) Is the platform tacked onto legacy software or built like you would built new applications - kubernetes / cloud native?



> *"Our vision was for 'Everything as a Service' – to create a bubble where our people can't tell if they're building software for a bank or any of the software companies in the world. We wanted to be able to quickly take an idea to production while meeting the security and regulatory standards of the industry.*
>
> TOM GILBERT , GLOBAL HEAD OF CLOUD, APPLICATION AND INTEGRATION PLATFORMS, DEUTSCHE BANK

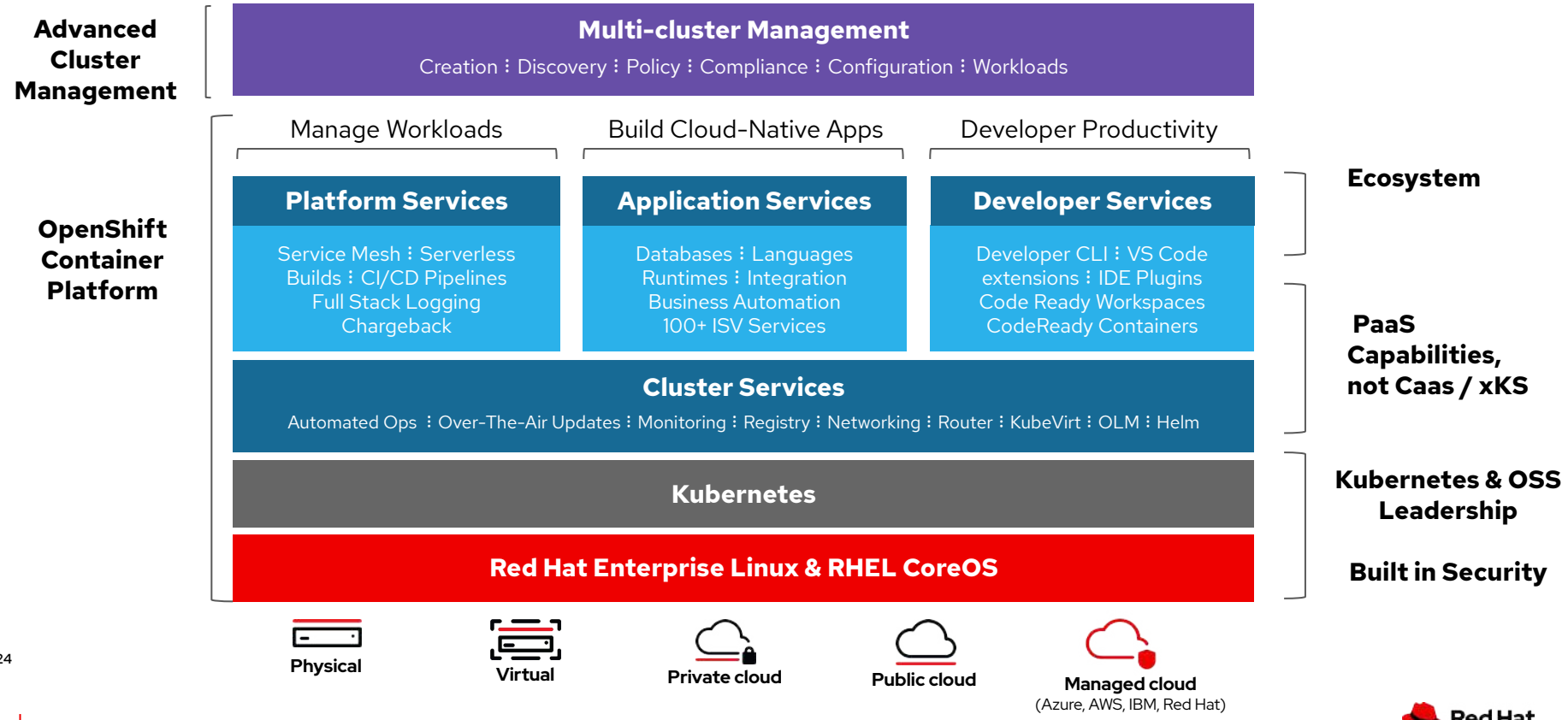
Red Hat

Source: https://k8s.devstats.cncf.io/d/9/companies-table?orgId=1 (16.09.2020)

So, what else remains besides Red Hat OpenShift?

Red Hat

Draw Me a Picture!



Red Hat

Supporting hybrid usage and buying patterns

A consistent platform no matter how or where you run

Start quickly, we manage it for you

Managed Red Hat OpenShift services

Azure Red Hat OpenShift

Red Hat OpenShift Service on AWS[1]

IBM Cloud
Red Hat OpenShift on IBM Cloud

Red Hat OpenShift Dedicated[2]

You manage it, for control and flexibility

Self-managed Red Hat OpenShift

Red Hat OpenShift Container Platform

On public cloud, or on-premises on physical or virtual infrastructure[3]

Source:
1 In preview as of 1/1/2021. Also available as Red Hat OpenShift Dedicated managed service running on user-supplied AWS infrastructure.
2 Red Hat managed service running on user-supplied GCP infrastructure
3 See docs.openshift.com for supported infrastructure options and configurations

More than 2,500 Red Hat OpenShift customers

Modernize apps

Web apps

Cloud-native dev

Multicloud

Mobile

Big data | Analytics

AI | ML

IoT

Red Hat

>200 Red Hat OpenShift customers

In DACH – some examples:

AT

CH

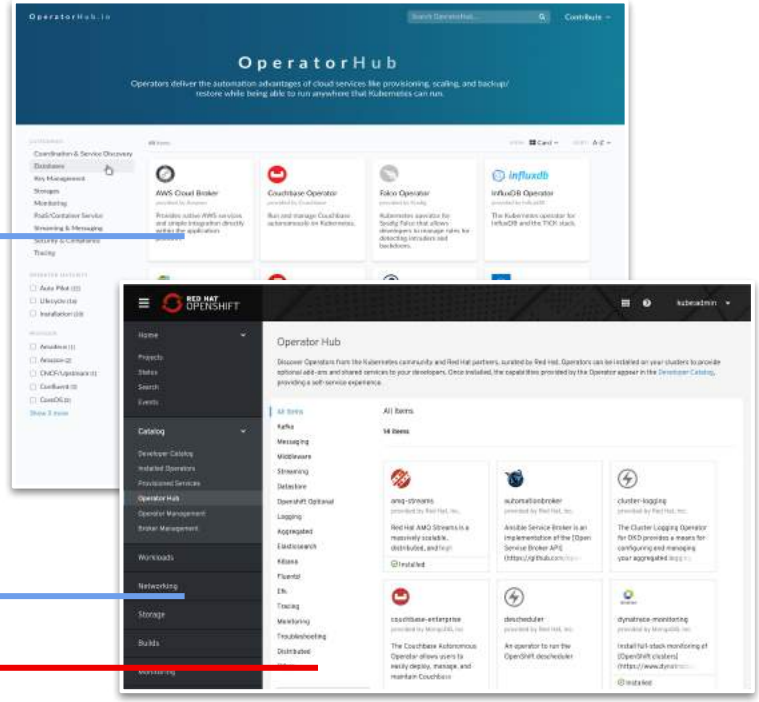
DE

DB Systel GmbH

Red Hat

Red Hat Innovates Beyond Kubernetes - OperatorHub and certified Operators

- OperatorHub.io launched by Red Hat, AWS, Microsoft and Google
- OpenShift Operator Certification
- OperatorHub integrated into OpenShift 4



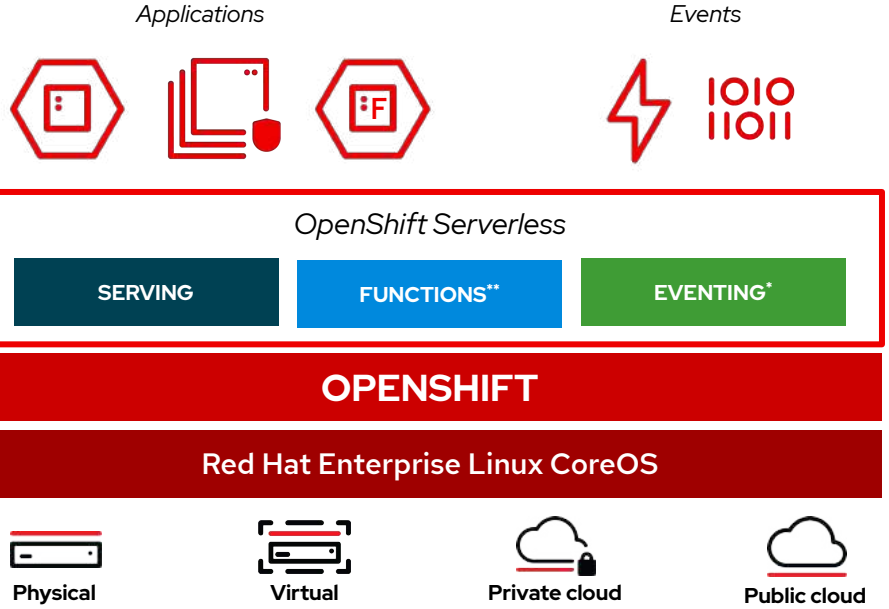
Red Hat

Red Hat Innovates Beyond Kubernetes - OpenShift Serverless

Event-driven serverless containers and functions

- Deploy and run **serverless containers**
- Use any programming language or runtime
- Modernize existing applications to run serverless
- Powered by a rich ecosystem of event sources
- Manage serverless apps natively in Kubernetes
- Based on open source project **Knative**
- Run anywhere OpenShift runs

Product briefing deck



* Eventing is currently in Technology Preview

** Functions are currently a work in progress initiative

Product Manager: William Markito

Red Hat

Red Hat Innovates Beyond Kubernetes - Enabling greater developer productivity

CodeReady Workspaces

Write container-native code in OpenShift, even with zero Linux or Kubernetes knowledge

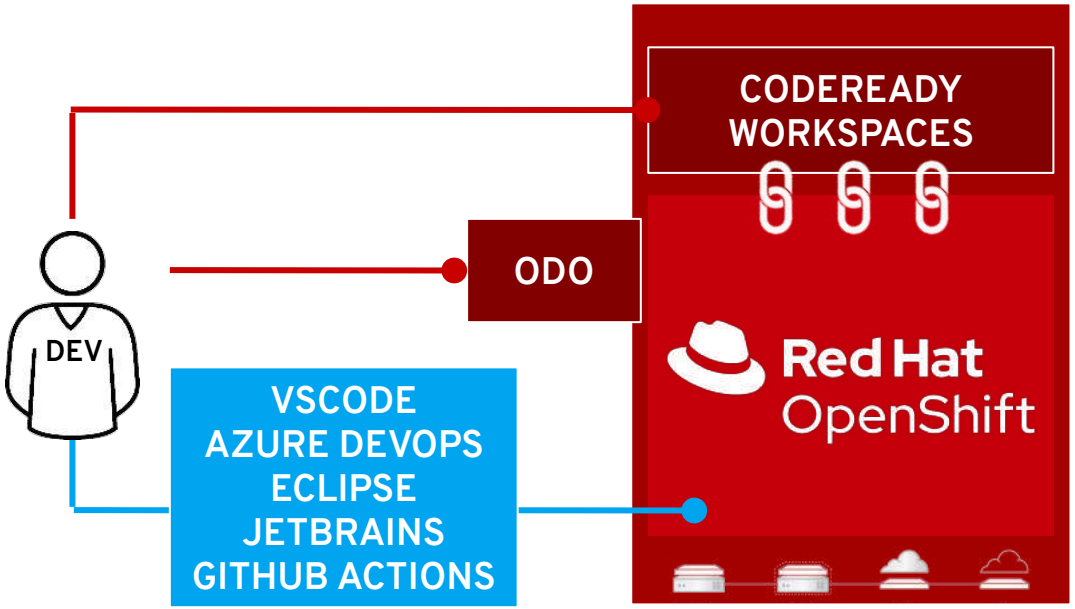
Kube-native IDE for simplified container development, no docker knowledge required

OpenShift ODO

Developer CLI for OpenShift with familiar git-push syntax

OpenShift Plugins

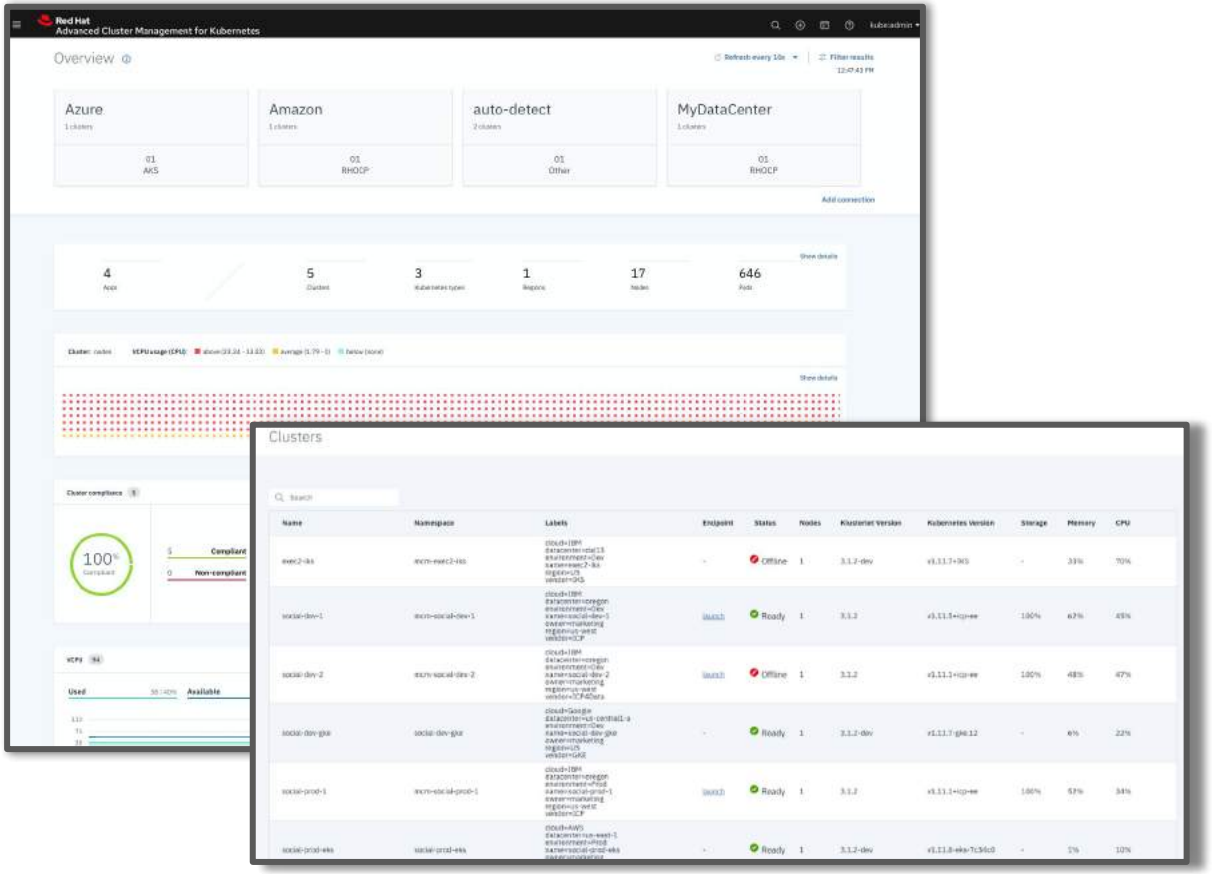
Integration plugins - VScode, Azure DevOps, Eclipse IDE, JetBrains, GitHub Actions



Red Hat

Red Hat Innovates Beyond Kubernetes - Unified Hybrid Cloud Management

Single Pane for all your Kubernetes Clusters

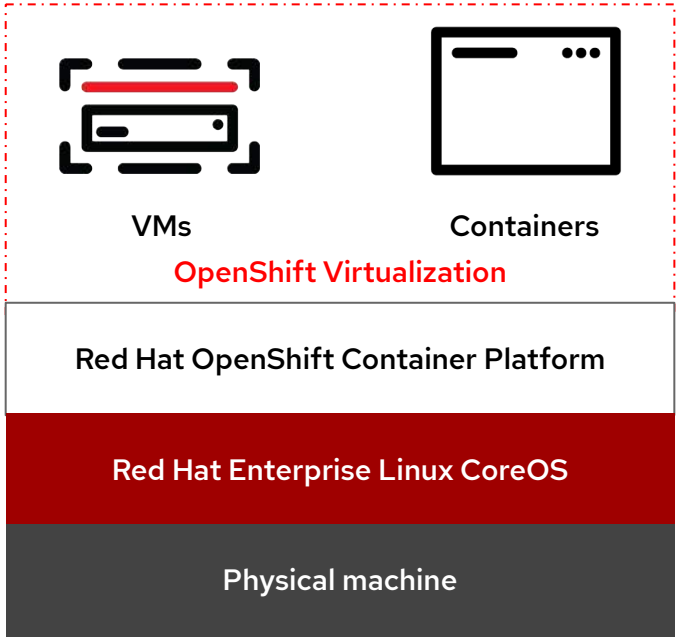


- **Centrally** create, update and delete Kubernetes clusters **across multiple** private and public clouds
- Search, find and modify **any** kubernetes resource across the **entire** domain.
- **Quickly** troubleshoot and resolve issues across your **federated** domain

Red Hat

Red Hat Innovates Beyond Kubernetes - Virtual Machines Run and Managed in OpenShift

Modernize workloads and support mixed applications consisting of VMs, containers, and serverless



- OpenShift Virtualization accelerates application delivery with a single platform that can manage “mixed applications” with the same tools and teams
- Add VMs to new and existing applications
- Modernize legacy VM applications over time, or maintain them as VMs

Red Hat

Eat your own OpenShift at Red Hat

Red Hat

How we think about the business

What got us here won't get us there

the Why

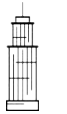
We believe open hybrid cloud will enable us to:

- Match the speed and adaptability demands of the digital business
- Improve availability, resiliency, and durability of our digital systems

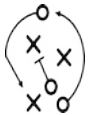
While we continue to reduce operating expense.

the How

How we get there:



1. Think business first



2. Guide work via a roadmap

3. Adapt based on data

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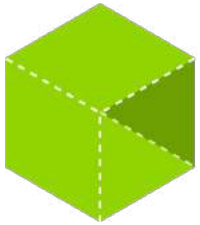
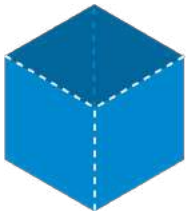
OpenShift deployments at Red Hat



OPEN PLATFORM



MANAGED PLATFORM

Empowering innovation

Why: Innovation

Who: Any associate

What: Single cluster, public cloud

How much: 1,000+ apps

Development & build pipeline

Why: Development & build

Who: Engineering primarily

What: Single cluster in datacenter

How much: 689 projects across 34,530 containers

Mission-critical workloads

Why: Enterprise availability

Who: Mission-critical systems

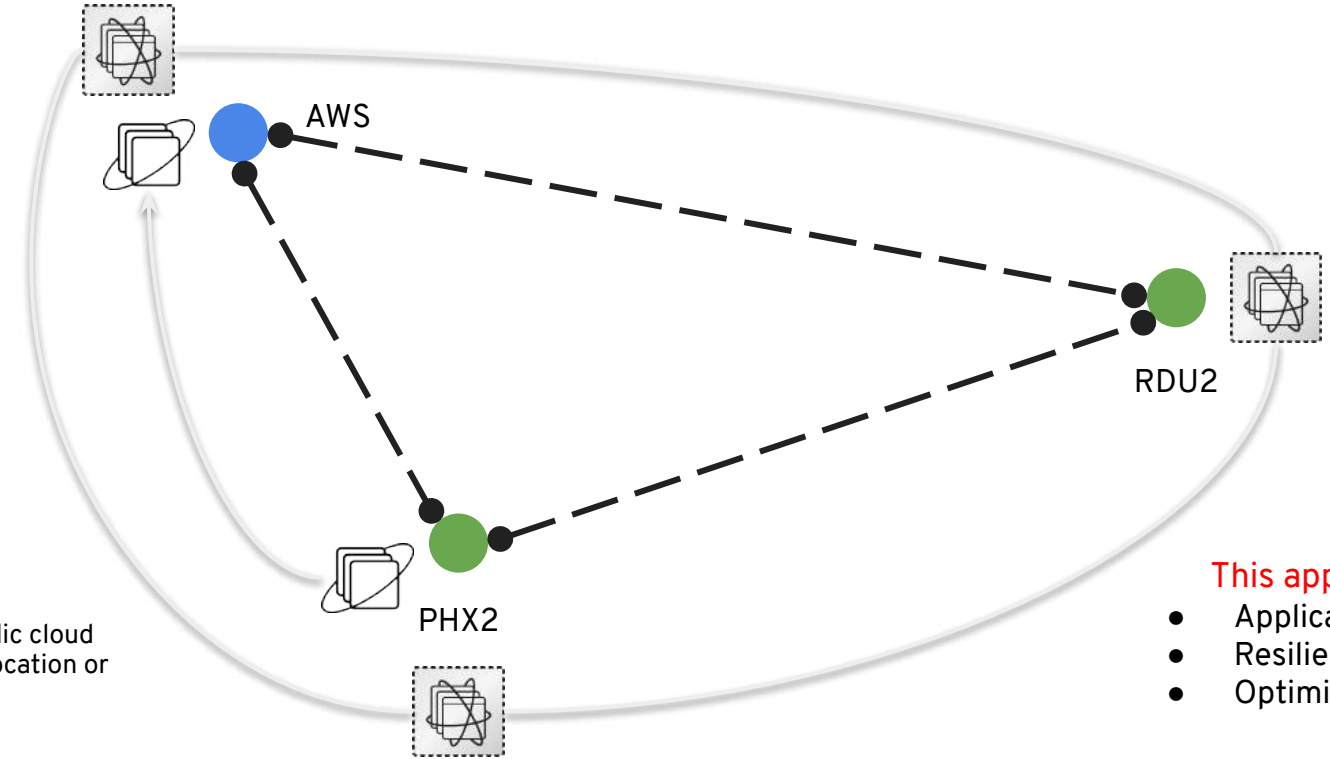
What: 3x multi-site clusters

How much: 125+ apps

Red Hat

Open Hybrid Cloud in Action

Multi-site active workloads across the globe for key data and business function services.
(Diagram is illustrative only)



- Current public cloud
- Red Hat colocation or datacenter

This approach enables

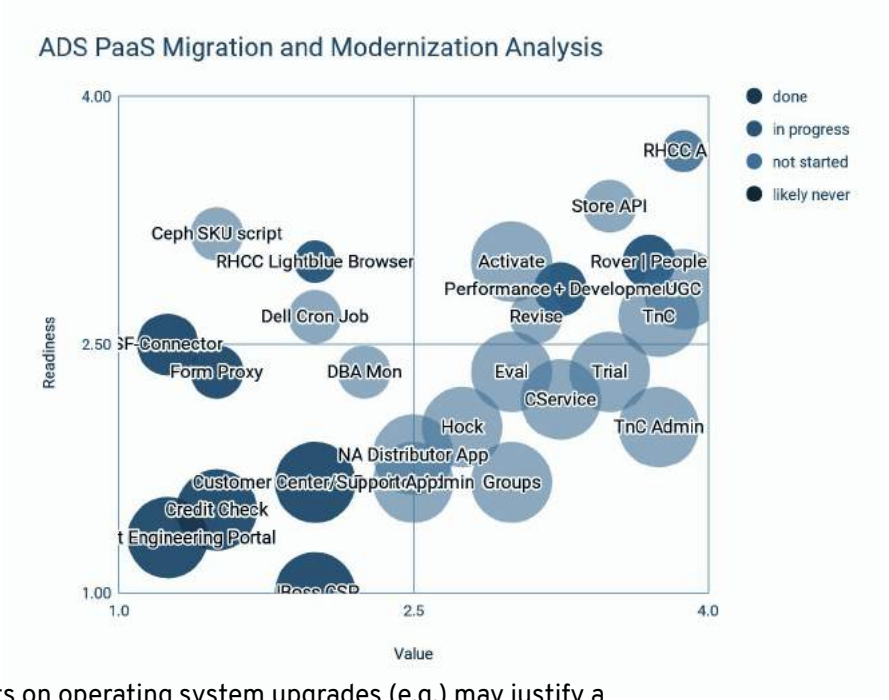
- Application portability
- Resiliency & availability
- Optimized costs

Red Hat

How we identify and prioritize applications

Assess value and readiness of each application:

- Value criteria
  - Change rate
  - Lifespan
- Readiness criteria
  - Business criticality
  - Business support
  - Architectural gaps



Note: specific use cases like end-of-life hardware or constraints on operating system upgrades (e.g.) may justify a re-platforming approach and yield other technical benefits.

Red Hat