Red Hat OpenShift

The Kubernetes platform for big ideas

Robert Baumgartner
Senior Solution Architect

Red Hat

Creating value depends on your ability to deliver applications faster

Cloud-native applications

AI & machine learning

Analytics

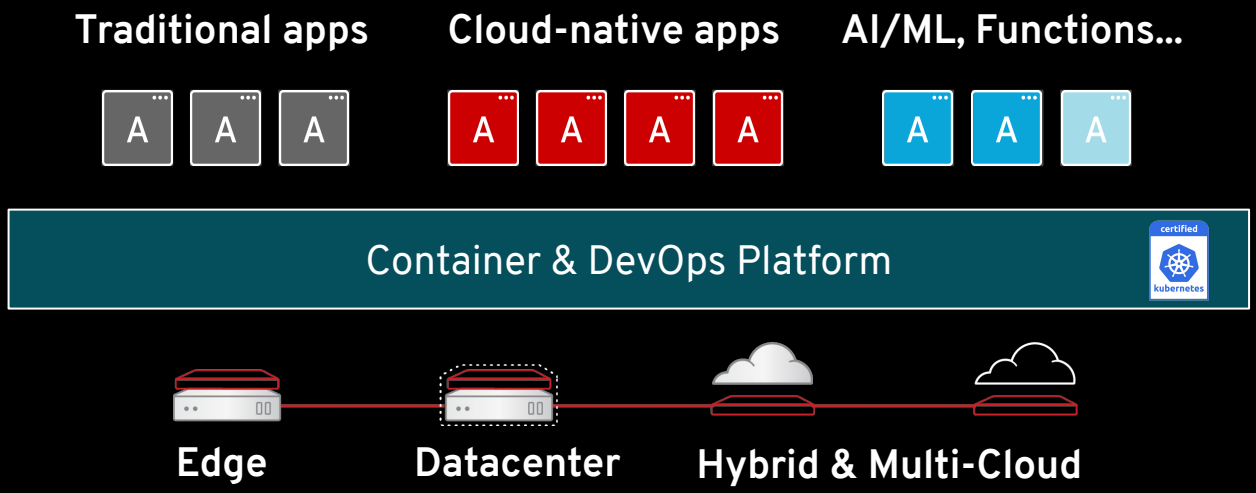
Internet of Things

Innovation culture

Containers, Kubernetes, and hybrid cloud are key ingredients.
OpenShift is the best platform to deliver container-based applications.

Red Hat

With OpenShift you can deliver all your applications in a whole new way



Red Hat

More than 1,000 Red Hat OpenShift customers

MODERNIZE APPS

WEB APPS

CLOUD NATIVE DEV

MULTI-CLOUD

MOBILE

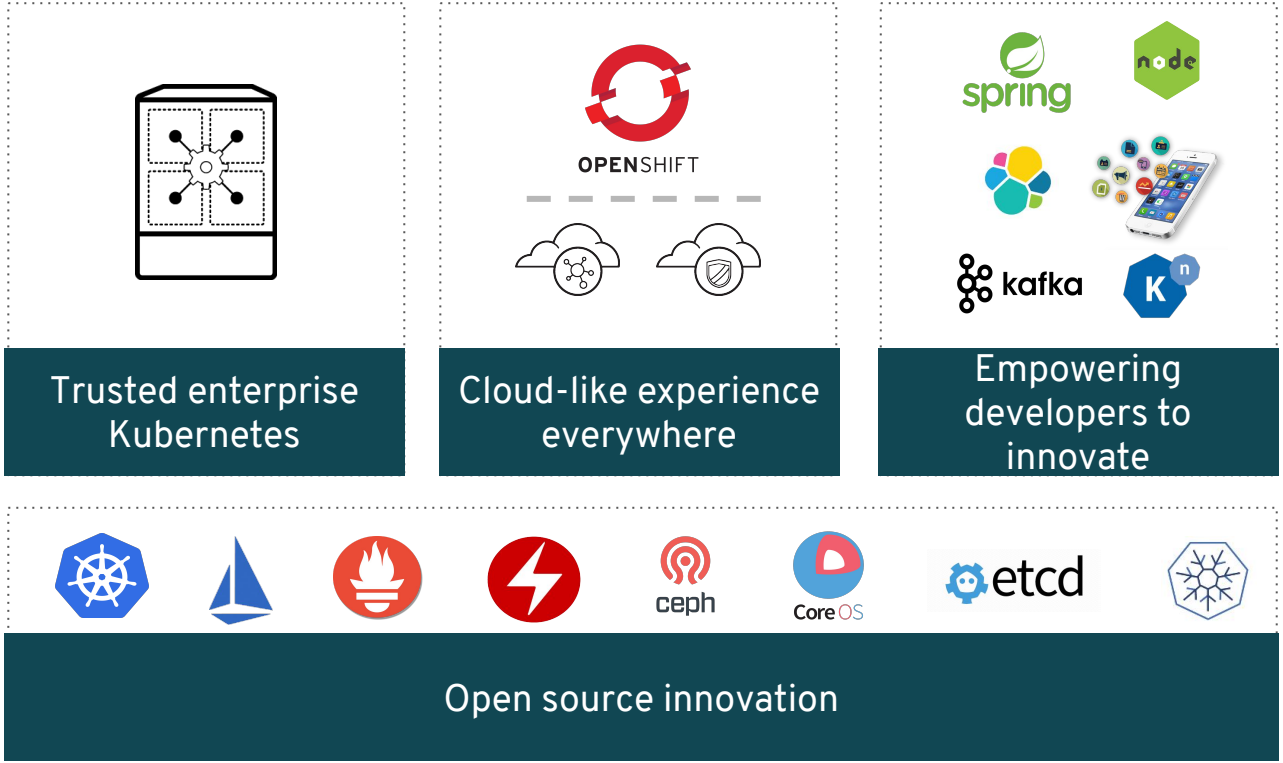
BIG DATA | ANALYTICS

AI | ML

IOT

Red Hat

Why customers choose Red Hat OpenShift



Red Hat

CONTAINER CHALLENGES

Container security

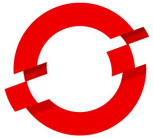
Image scanning, patching, and compliance

Day 2 management

Installations, upgrades, and maintenance
Integration of existing enterprise technology

Application delivery

Monitoring, metering, and management
Integration of existing developer tools



Red Hat OpenShift

Trusted enterprise Kubernetes

Continuous security, world-class support and services, and deep expertise to confidently run any application

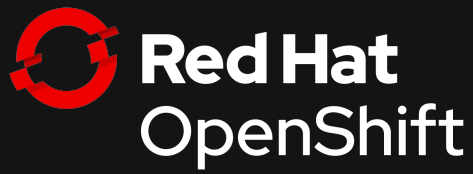
A cloud-like experience, everywhere

Full-stack automated operations on a consistent foundation across on-premises or hybrid cloud infrastructure

Empowerment for developers to innovate

Ability to get applications to production sooner with a wide range of technologies and streamlined workflows

Trusted enterprise Kubernetes



Trusted host, content, platform

Full-stack automated installation

Seamless updates

Red Hat

Kubernetes done right is hard

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
		• Disaster recovery	• Multi-environment rollout
		• Resource segmentation	• Enterprise container registry
			• Cluster & app elasticity
			• Monitor, alert, remediate
			• Log aggregation

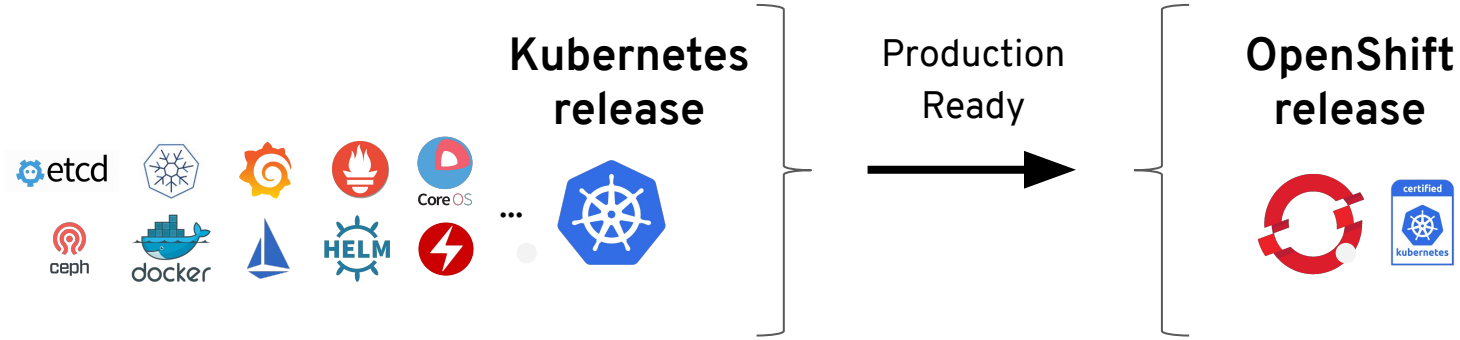
75%

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.

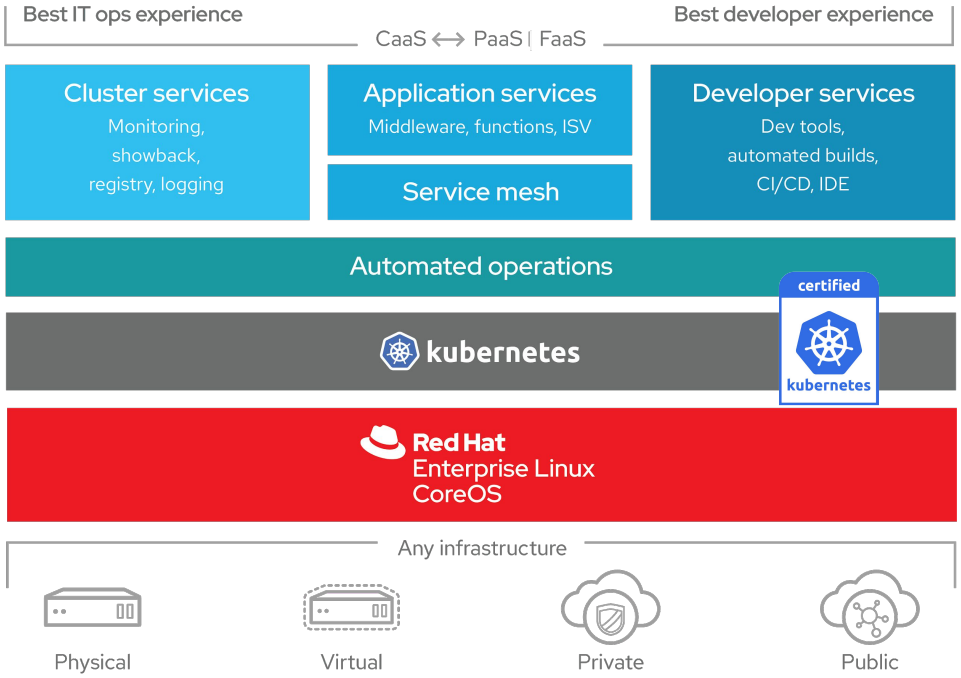
Red Hat

OpenShift is trusted enterprise Kubernetes



- Hundreds of defect and performance fixes
- 200+ validated integrations
- Certified container ecosystem
- 9-year enterprise life-cycle management
- Red Hat is a leading Kubernetes contributor since day 1

OpenShift 4 - A smarter Kubernetes platform



Automated, full-stack installation from the container host to application services

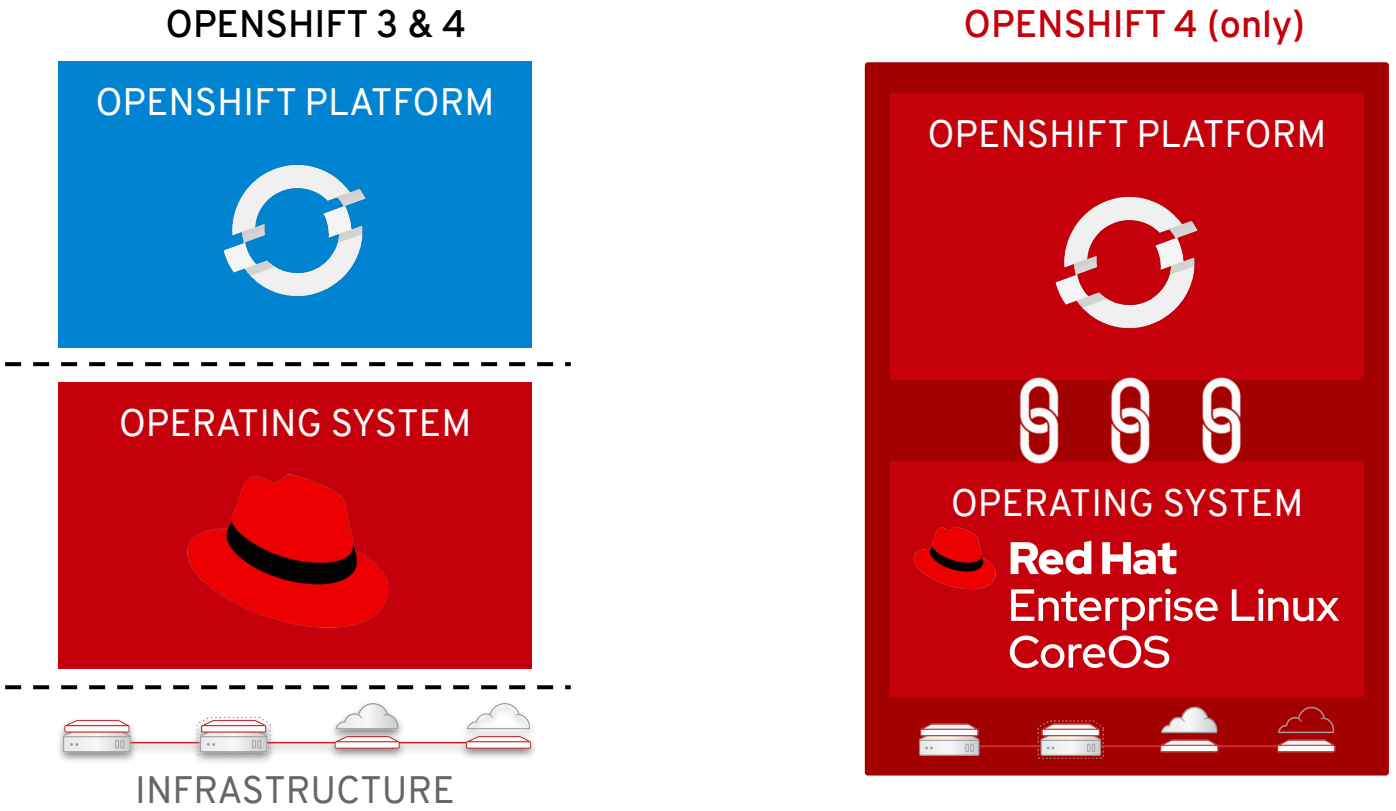
Seamless Kubernetes deployment to any cloud or on-premises environment

Autoscaling of cloud resources

One-click updates for platform, services, and applications

Red Hat

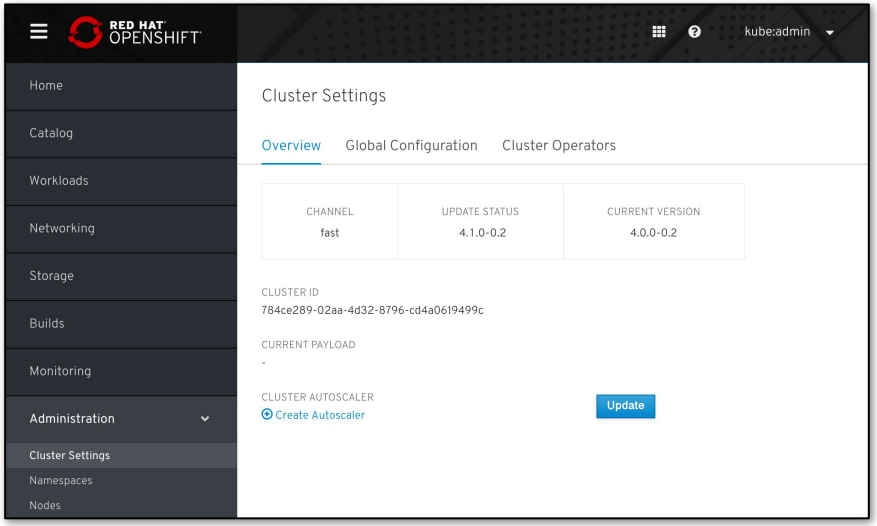
Full-stack automated install



Red Hat

Over the Air (OTA) Updates

- OpenShift retrieves the list of available updates
- Admin selects the target version
- OpenShift is updated over the air
- Auto-update support



Red Hat

Comprehensive container security

CONTROL
Application security

- Container content
- CI/CD pipeline
- Container registry
- Deployment policies

DEFEND
Infrastructure

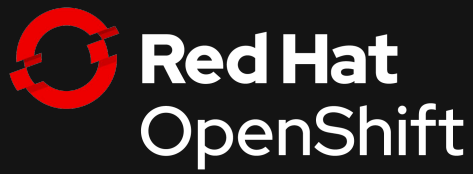
- Container platform
- Container host multi-tenancy
- Network isolation
- Storage
- Audit & logging
- API management

EXTEND

- Security ecosystem

Red Hat

A cloud-like experience, everywhere



Operator Framework

Operator Hub &
ISV ecosystem

Multicluster
management

A consistent container application platform

FROM YOUR DATACENTER TO THE CLOUD

Automated operations

Multi-tenant

Secure by default

Network traffic control

Over-the-air updates

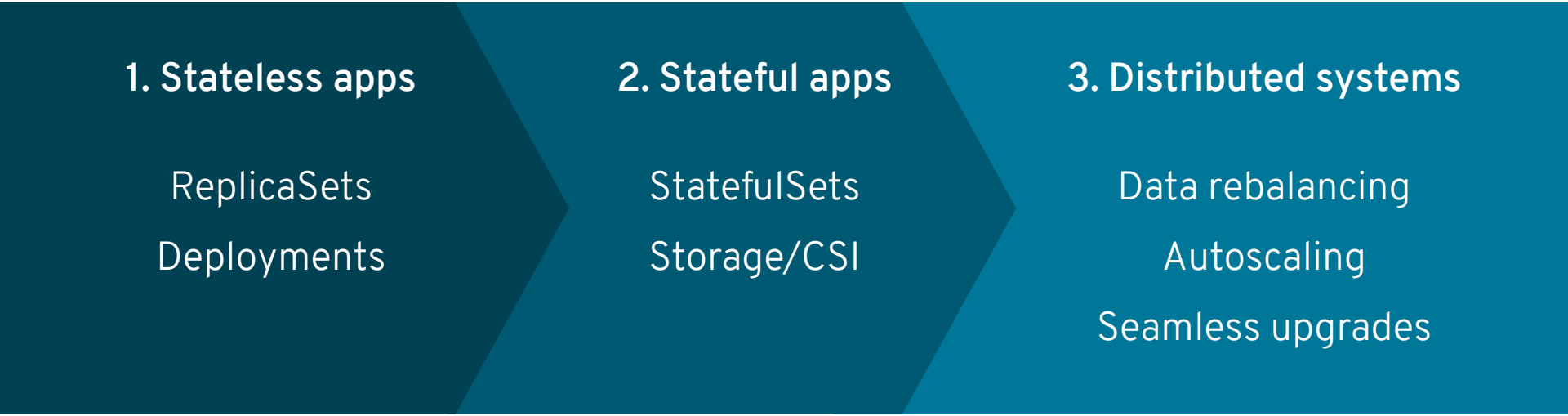
Monitoring & chargeback

Pluggable architecture

Bare metal, VMware vSphere, Red Hat Virtualization, Red Hat OpenStack Platform, Amazon Web Services, Microsoft Azure, Google

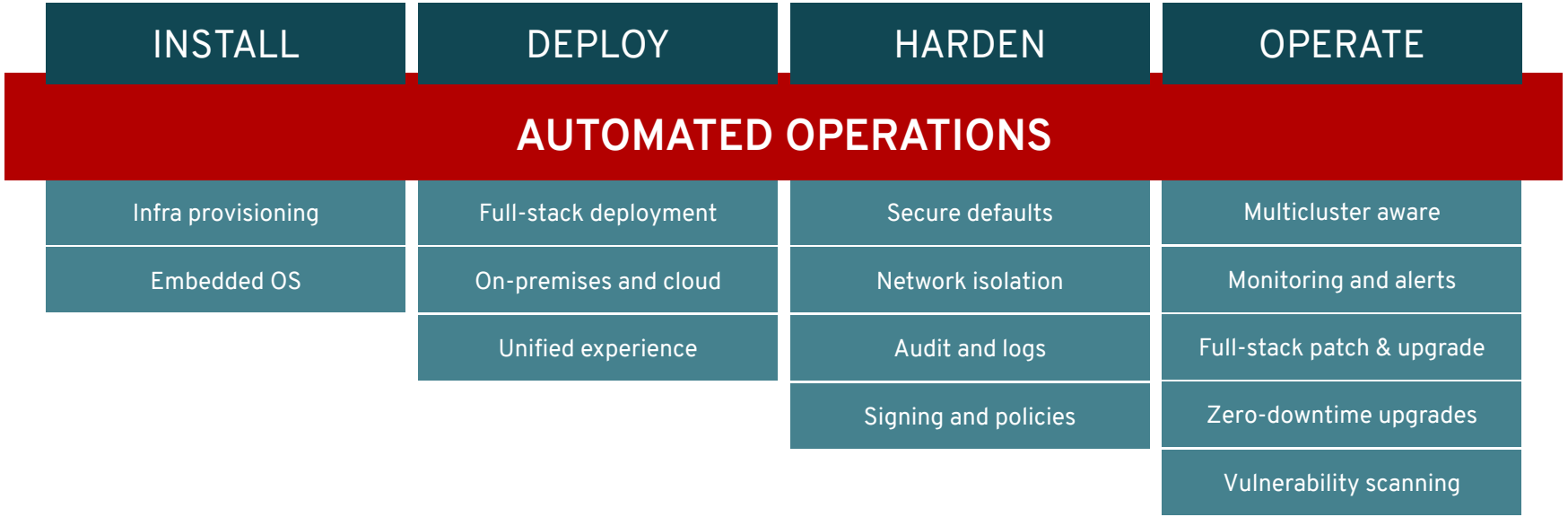
Red Hat

Kubernetes adoption phases



Automated container operations

FULLY AUTOMATED DAY-1 AND DAY-2 OPERATIONS



Red Hat

Kubernetes-native day 2 management

OPERATOR FRAMEWORK

Flexible app architectures

No reinvention of core concepts

Uniform deploy and debug

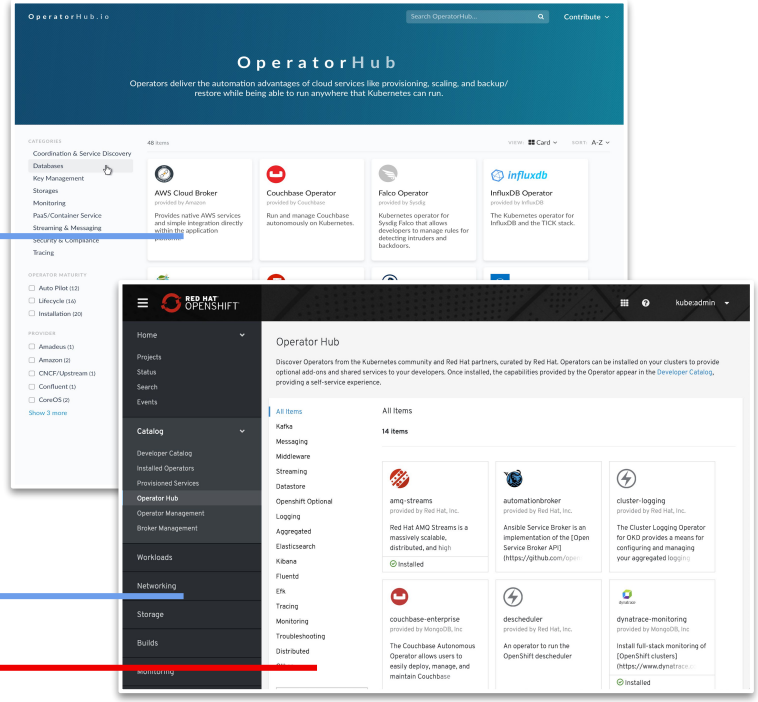
Truly hybrid

Operators codify operational knowledge and workflows to automate life-cycle management of containerized applications with Kubernetes

Red Hat

OperatorHub and certified Operators

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

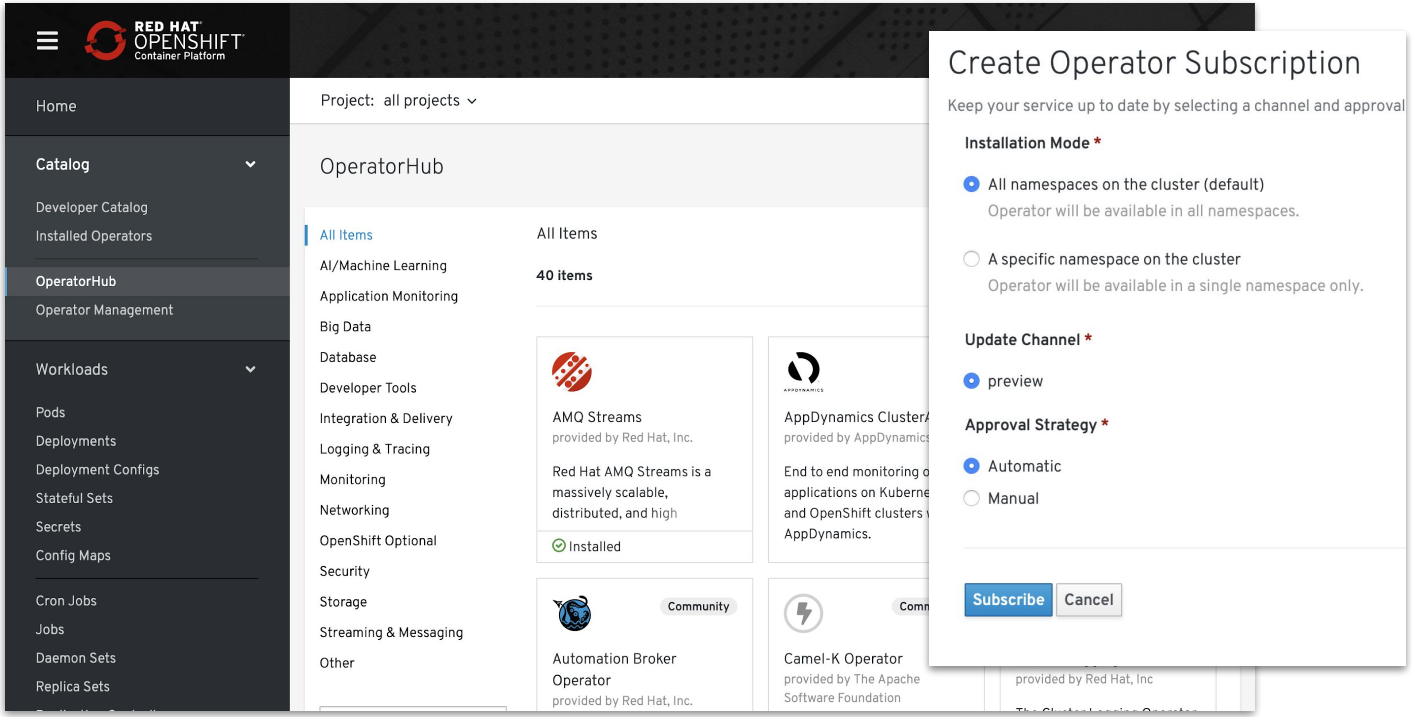


COMMUNITY OPERATORS

OPENSHIFT CERTIFIED OPERATORS

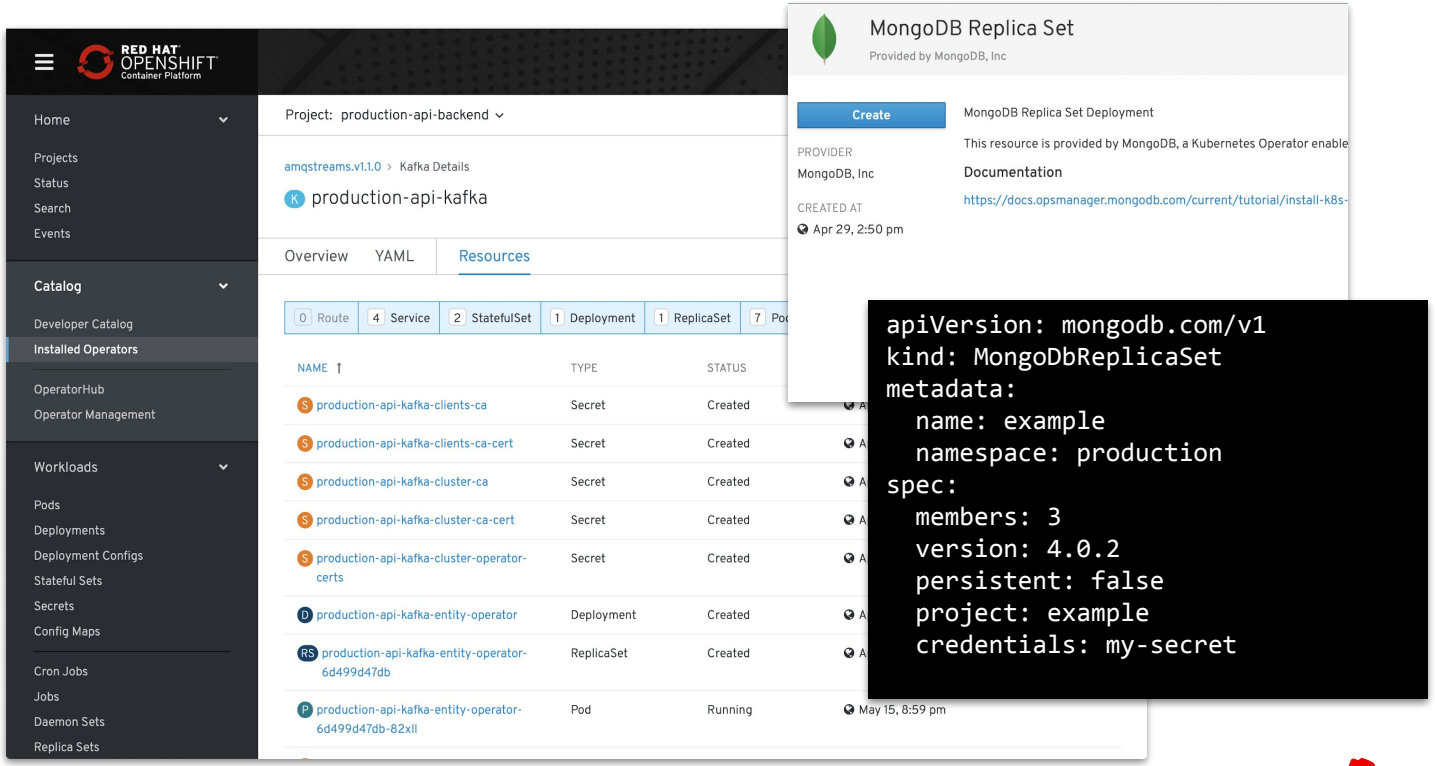
Red Hat

Full control for administrators



Red Hat

Self-service for developers



Red Hat

Why OpenShift for hybrid and multi-cloud deployments?

IDC Research: The Business Value of OpenShift on AWS

“

Our developers say that OpenShift on AWS is very easy to use, and they are definitely more productive as a result … seeing **60-70 percent increases in productivity levels.**

Financial Services

“

We have a **multi-cloud environment** and OpenShift on AWS has features that make it **easier to be agile.**

Pharmaceutical

“

OpenShift on AWS has really helped us improve our reservation system and contributed to up to **15 percent more revenue, worth tens of millions of dollars** per year.

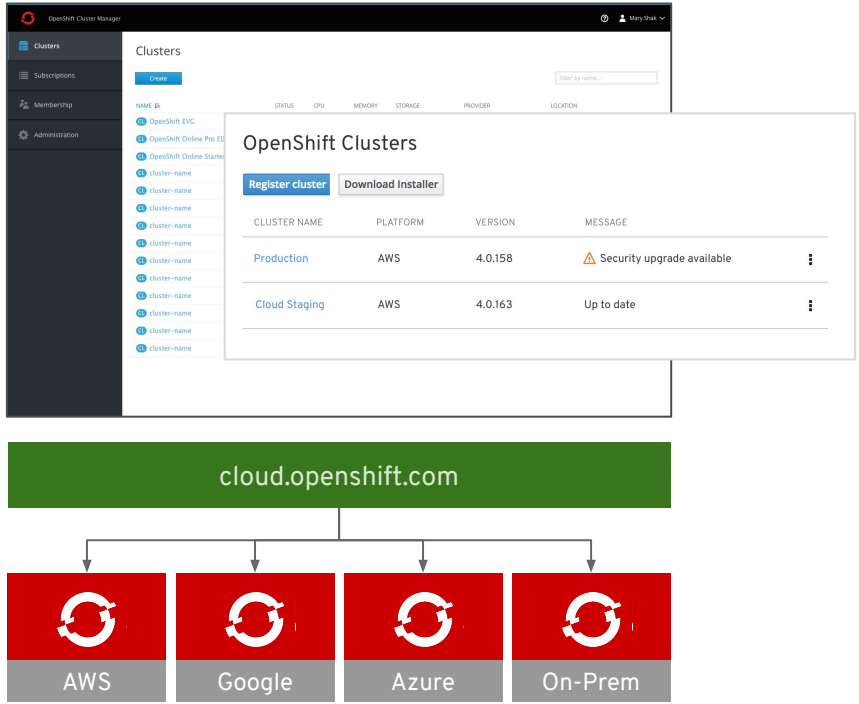
Hospitality

Source: IDC Report “The Business Value of an Agile and Flexible Platform for Developing and Running Applications with OpenShift on AWS”, May 2019

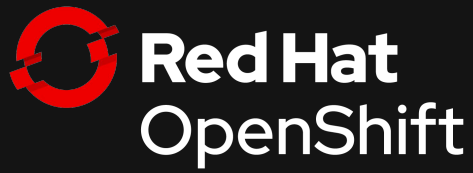
Red Hat

Unified Hybrid Cloud

- Cloud-based multicluster management
  - New clusters on AWS, Azure, Google, vSphere, OpenStack, and bare metal
  - Register existing clusters
  - Including OpenShift Dedicated
- Management operations
  - Install new clusters
  - View all registered clusters
  - Update clusters



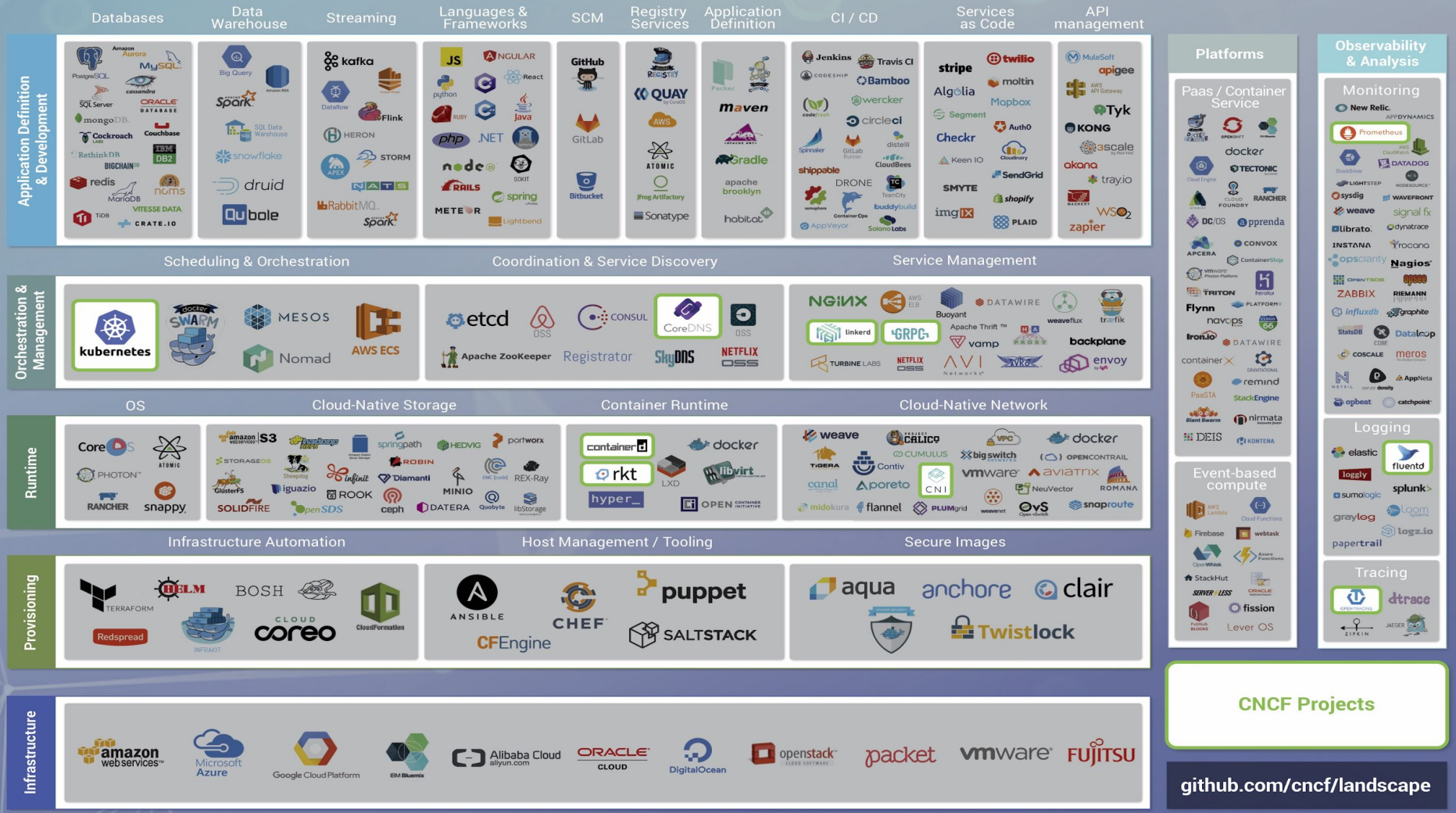
Empowering developers to innovate



Service mesh

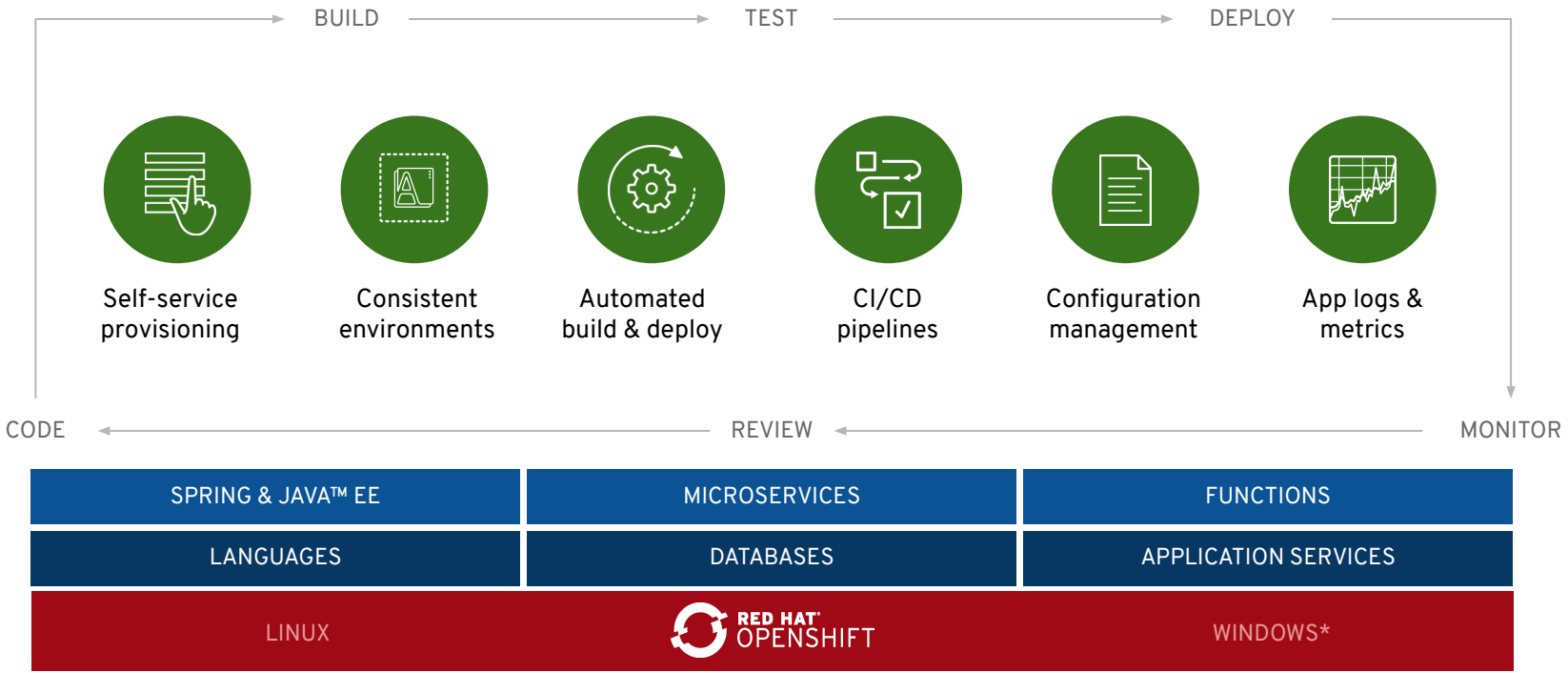
Serverless

Red Hat CodeReady Workspaces & developer tooling


Databases
Data Warehouse
Streaming
Languages & Frameworks
SCM
Registry Services
Application Definition
CI / CD
Services as Code
API management
Application Definition & Development
Scheduling & Orchestration
Coordination & Service Discovery
Service Management
Orchestration & Management
kubernetes
MESOS
Nomad
AWS ECS
etcd
CONSUL
CoreDNS
Apache ZooKeeper
Registrator
SkyDNS
NETFLIX OSS
NGINX
linkerd
gRPC
Buoyant
DATAWIRE
Apache Thrift
vamp
backplane
envoy
OS
Cloud-Native Storage
Container Runtime
Cloud-Native Network
Runtime
RANCHER
container
rkt
hyper_
docker
LXD
libvirt
OPEN CONTAINER INITIATIVE
weave
CALICO
CUMULUS
big switch
OPENCONTRAIL
Contiv
VMware
aviatrix
CNI
NeuVector
ROMANA
Aporeto
canal
flannel
PLUMgrid
OvS
snaproute
Infrastructure Automation
Host Management / Tooling
Secure Images
Provisioning
TERRAFORM
HELM
BOSH
CLOUD FOUNDRY
Redspread
CloudFormation
ANSIBLE
CHEF
CFEngine
puppet
SALTSTACK
aqua
anchore
clair
Twistlock
Infrastructure
amazon web services
Microsoft Azure
Google Cloud Platform
IBM Bluemix
Alibaba Cloud
ORACLE CLOUD
DigitalOcean
openstack
packet
vmware
FUJITSU
Platforms
Paas / Container Service
Event-based compute
Observability & Analysis
Monitoring
New Relic.
Prometheus
DATADOG
sysdig
WAVEFRONT
weave
signal fx
Nagios
ZABBIX
RIEMANN
graphite
Logging
elastic
fluentd
loggly
splunk
sumologic
graylog
papertrail
Tracing
OPENTRACING
dtrace
JAEGER
ZIPKIN
CNCF Projects
github.com/cncf/landscape

THE CLOUD-NATIVE APP DEV CHALLENGE

OpenShift enables developer productivity



* coming soon

Red Hat

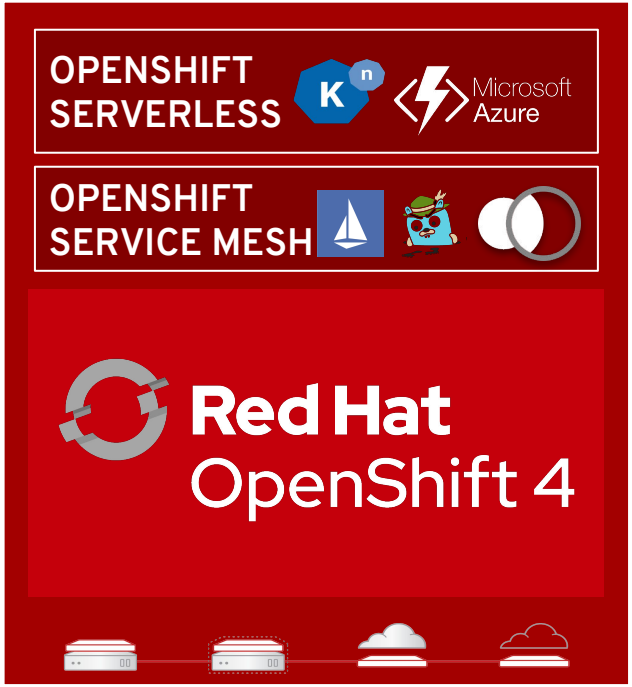
Building next-gen applications

OpenShift Service Mesh

- Integrated Service Mesh for enhanced security and network segmentation of microservices applications. Combines Istio, Kiali (UI), and Jaeger (Tracing) projects.

OpenShift Serverless

- Integrated serverless, enabling scale-to-zero FaaS services and event sources - built on the Knative framework.
- Support for Azure Functions
- Integrated with Camel-k for rich set of initial event sources: HTTP, Kafka, AMQP



Enabling greater developer productivity

CodeReady Workspaces

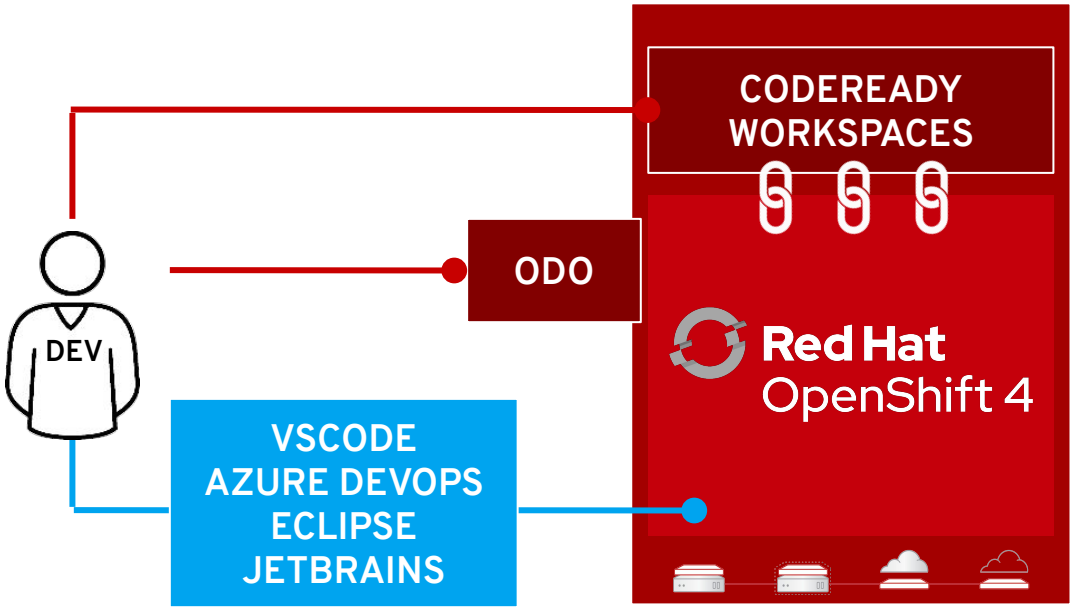
Web-Based IDE (Eclipse Che), Collaborative Development, integrated with CI/CD.

OpenShift ODO

Advanced developer CLI

OpenShift Plugins

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



CodeReady Workspaces

The collaborative OpenShift-Native IDE. Free for any customer of OpenShift Dedicated or OpenShift Container Platform.

Container Workspaces

Workspace replicas to end "works on my machine" and enable team collaboration.

DevOps Integrations

Reference developer workspaces from any issue, failed build, or git notification.

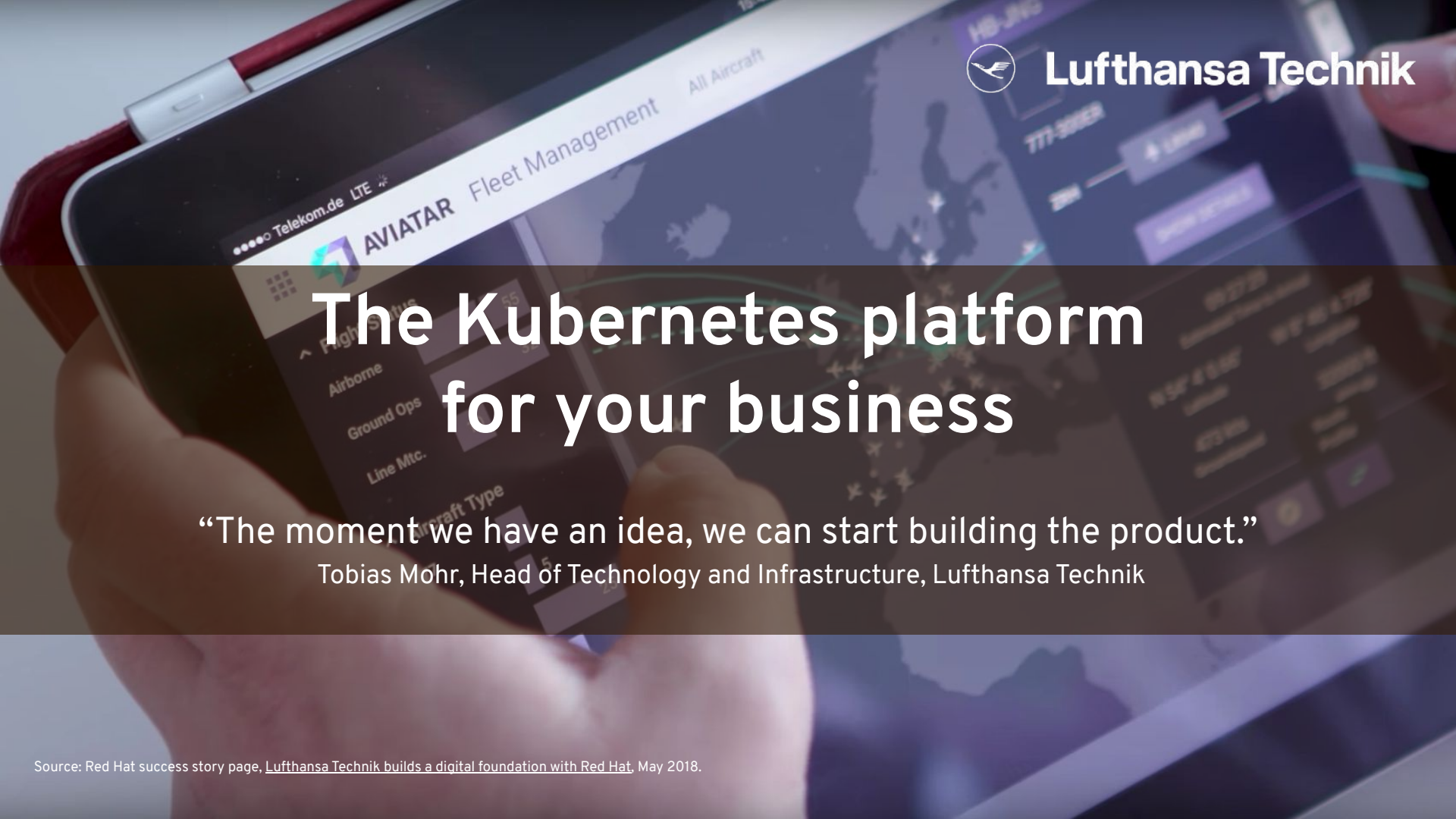
Protect Source Code

Full access to source code without any of it landing on hard-to-secure laptops.

Based on the open Eclipse Che project	Red Hat Linux and Application Infrastructure	Plugin model for extensibility	Serverless support (coming soon)

Use It To: Replace VDI for devs, and enable true container-based DevOps.

Red Hat



The Kubernetes platform for your business

"The moment we have an idea, we can start building the product."

Tobias Mohr, Head of Technology and Infrastructure, Lufthansa Technik

Source: Red Hat success story page, Lufthansa Technik builds a digital foundation with Red Hat, May 2018.

Red Hat OpenShift business value

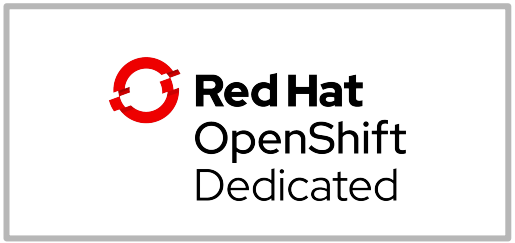
531%
5-year ROI

66%	36%	8 MONTHS	US$1.29M
Faster development life cycle	More applications per year	Payback period	Average annual benefits per 100 developers

The Business Value of Red Hat OpenShift, IDC #US41845816, October 2017, https://www.redhat.com/en/resources/The-Business-Value-of-Red-Hat-OpenShift.

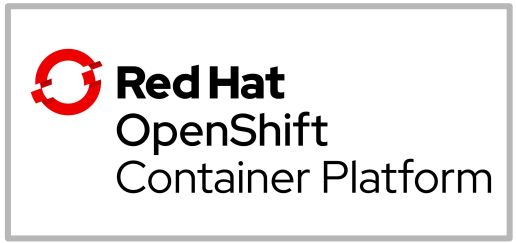
Red Hat

Multiple OpenShift Consumption Models



Managed service offering on your choice of AWS, Azure, or Google

Joint engineering, operation, and integrated support by Microsoft and Red Hat



Freedom to install on-premises or in the cloud to address your hybrid deployments

HOSTED SERVICES

SELF-MANAGED

Red Hat

Red Hat Services for OpenShift adoption

RED HAT OPEN INNOVATION LABS

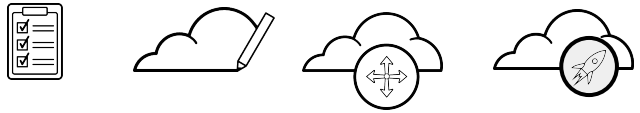
EXPERIMENT
Rapidly build prototypes, do DevOps, and be agile.

CATALYZE INNOVATION
Bring modern application development back to your team.

IMMERSE YOUR TEAM
Work side by side with experts in a residency-style engagement.

TO SHOW YOUR TEAMS HOW OPENSHIFT AND MODERN DEVELOPMENT PRACTICES CAN DRIVE INNOVATION: START WITH A 4- TO 12-WEEK LABS RESIDENCY

RED HAT CONTAINER ADOPTION PROGRAM



FRAMEWORK FOR SUCCESSFUL CONTAINER ADOPTION AND I.T. TRANSFORMATION:

Mentoring, training, and side-by-side collaboration to:

- Create a production platform and team to run it
- Create end-to-end container-driven deployment automation
- Scale application onboarding expertise
- Guide new Kubernetes-native development
- Align business with IT through **included Red Hat Open Innovation Labs**

TO BEGIN A COMPREHENSIVE PROGRAM (INCLUDING OPEN INNOVATION LABS): START WITH THE 12-WEEK RED HAT CONSULTING CONTAINER PLATFORM PILOT

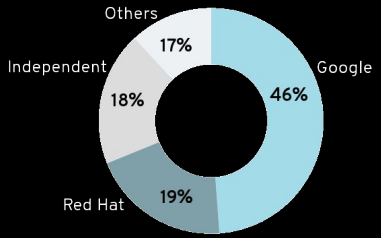
Red Hat

Why is Red Hat the best choice?

THE 4 C's

CODE

Kubernetes commits



Red Hat is a leading Kubernetes developer & contributor with Google[1].

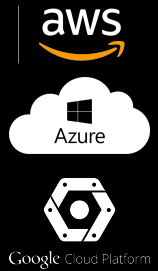
We make container development easy, reliable, & more secure.

CUSTOMERS

1,000+ customers[2]

We have years of experience running OpenShift Online & OpenShift Dedicated services.

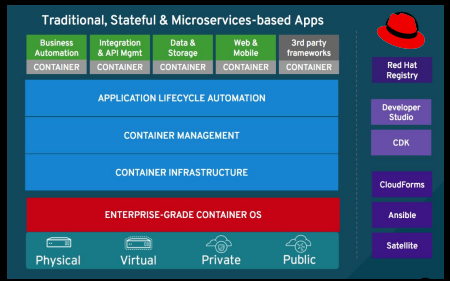
CLOUD



We have strong partnerships with cloud providers, ISVs, & CCSPs.

We have an extensive container catalog of certified partner images.

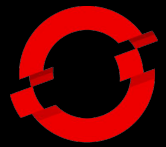
COMPREHENSIVE



Our comprehensive portfolio of container products and services includes developer tools, security, application services, storage, & management.

Source: [1] Stackalytics, *Contribution by Companies*. (Release: All, Project type: Kubernetes, Module: kubernetes, Metric: Commits) Retrieved: March 2, 2018. [2] More Than 1,000 Enterprises Across the Globe Adopt Red Hat OpenShift Container Platform to Power Business Applications

Red Hat



Red Hat
OpenShift 4

Trusted enterprise Kubernetes

- Trusted host, content, platform
- Full-stack automated install
- Seamless updates & day 2 management

A cloud-like experience, everywhere

- Operator Framework
- Operator Hub & certified ISVs
- Hybrid, multicluster management

Empowering developers to innovate

- OpenShift service mesh / Istio
- OpenShift serverless / Knative
- CodeReady Workspaces / Che

Thank You

Red Hat
OpenShift

linkedin.com/company/red-hat

youtube.com/user/RedHatVideos

facebook.com/redhatinc

twitter.com/RedHat

Red Hat