

Red Hat OpenShift

The platform for big ideas

Presenter's Name

Title

A top-down photograph of a light-colored wooden desk. On the desk are several items: a white laptop on the left, an open spiral notebook with a pen, a small potted cactus, a power strip with multiple outlets, a black smartphone, a white smartphone, a black wallet, a white smartphone, a white coffee cup with a lid, a black keyboard, and a clipboard with a document titled "Contract". Two pairs of hands are clasped together in the center of the desk. One person is wearing a white long-sleeved shirt and a white watch with a green and blue band. The other person is wearing a striped shirt and a silver watch.

... so you want to do
containers and Kubernetes?

YOUR DIFFERENTIATION DEPENDS ON YOUR ABILITY TO DELIVER APPLICATIONS FASTER

Cloud-native
Applications



AI & Machine
Learning



Blockchain



Internet of Things



Innovation
Culture



CONTAINERS, KUBERNETES, MICROSERVICES & DEVOPS ARE KEY INGREDIENTS

KUBERNETES DONE RIGHT IS HARD



- Templating
 - Validation
 - OS Setup
-
- Identity & Security Access
 - App Monitoring & Alerts
 - Storage & Persistence
 - Egress, Ingress & Integration
 - Host Container Images
 - Build/Deploy Methodology

- Platform Monitoring & Alerts
- Metering & Chargeback
- Platform Security Hardening
- Image Hardening
- Security Certifications
- Network Policy
- Disaster Recovery
- Resource Segmentation

- OS Upgrade & Patch
- Platform Upgrade & Patch
- Image Upgrade & Patch
- App Upgrade & Patch
- Security Patches
- Continuous Security Scanning
- Multi-environment Rollout
- Enterprise Container Registry
- Cluster & App Elasticity
- Monitor, Alert, Remediate
- Log Aggregation

 75%

A red circular icon containing a white warning triangle symbol.

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

THE KUBERNETES NEWS YOU DON'T WANT



- K8s dashboard exposed
- AWS environment with telemetry data compromised
- Tesla's infrastructure was used for crypto mining



- No security on K8s dashboard
- IT infrastructure credentials exposed
- Enabled access to a large part of Weight Watchers' network



- K8S and etcd bug introduced to servers during update
- New features and changes deployed cause failures
- Restart backend components leading to full platform outage



Unnecessary
Costs



Increased
Risk



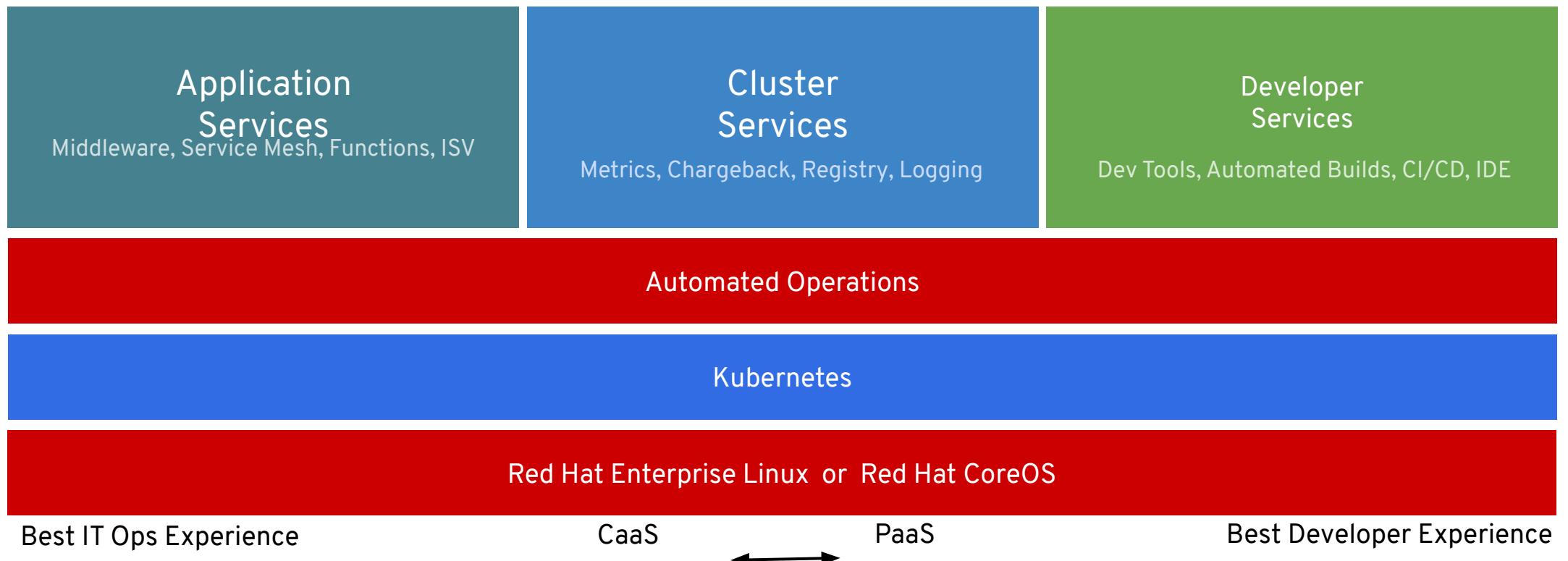
Unrealized
Value

OPENSIFT IS KUBERNETES FOR THE ENTERPRISE



Security fixes
100s of defect and performance fixes
200+ validated integrations
Middleware integrations
(container images, storage, networking, cloud services, etc)
9 year enterprise lifecycle management
Certified Kubernetes

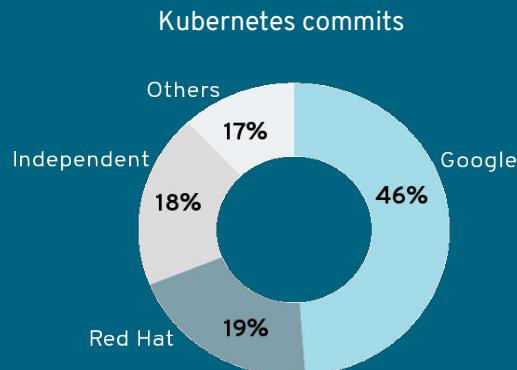
REFERENCE ARCHITECTURE FOR ENTERPRISE KUBERNETES



WHY IS RED HAT THE BEST CHOICE?

THE FOUR Cs

CODE



Red Hat is a leading Kubernetes developer & contributor with Google¹.

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

CUSTOMERS



Most reference customers running in production.

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

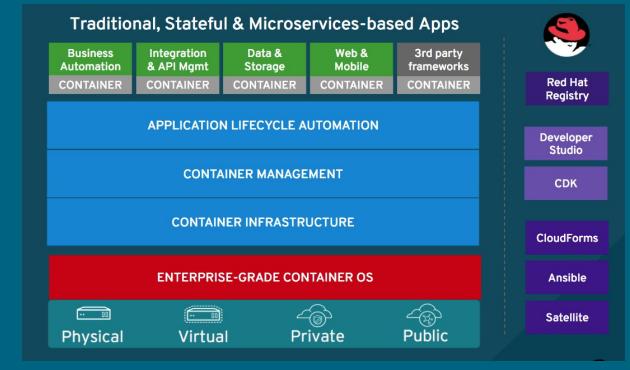
CLOUD



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.





The Kubernetes platform for developers

Contract



Developers want to be **productive** and have choice

Choice of architectures

Choice of programming languages

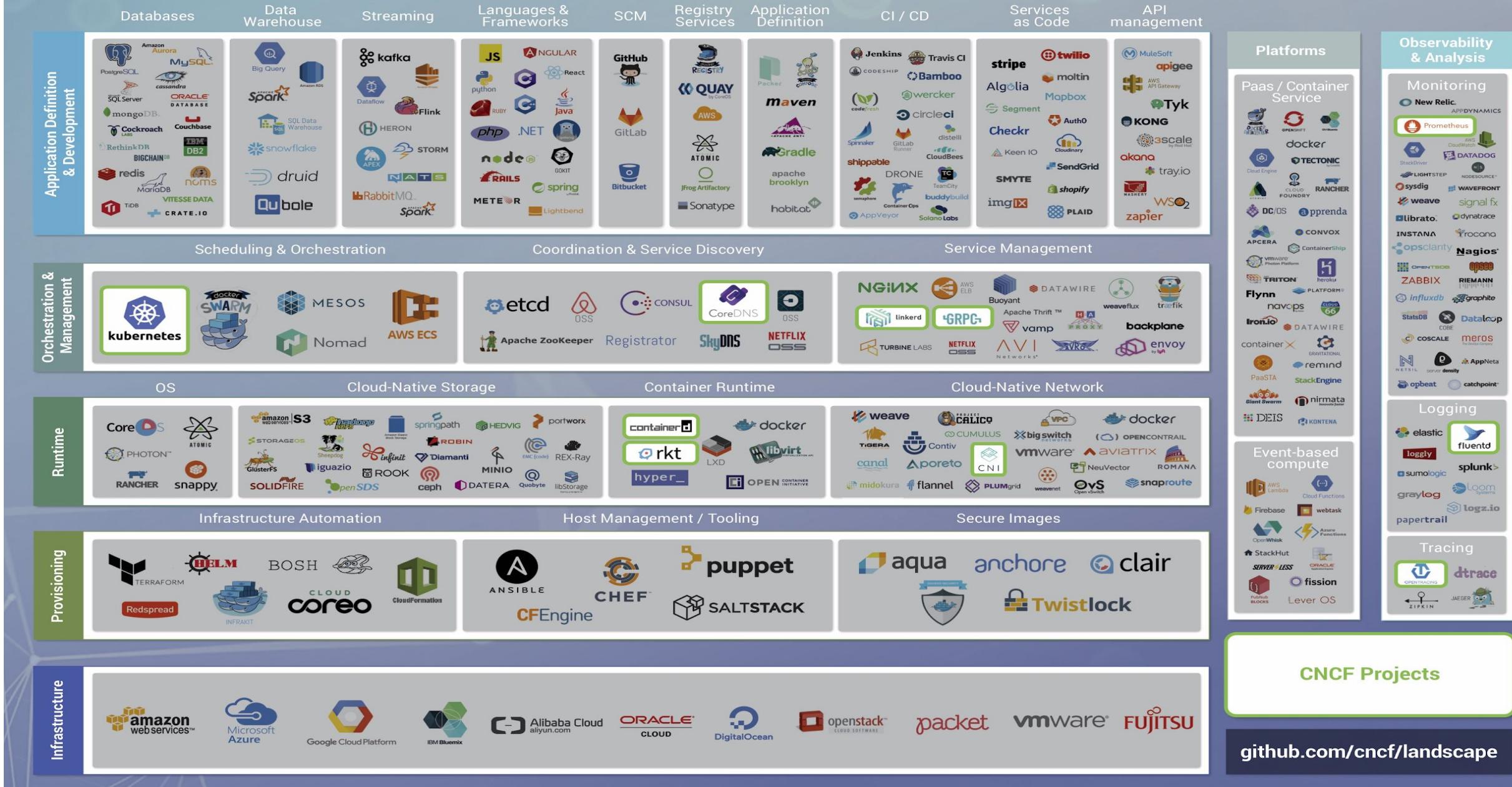
Choice of databases

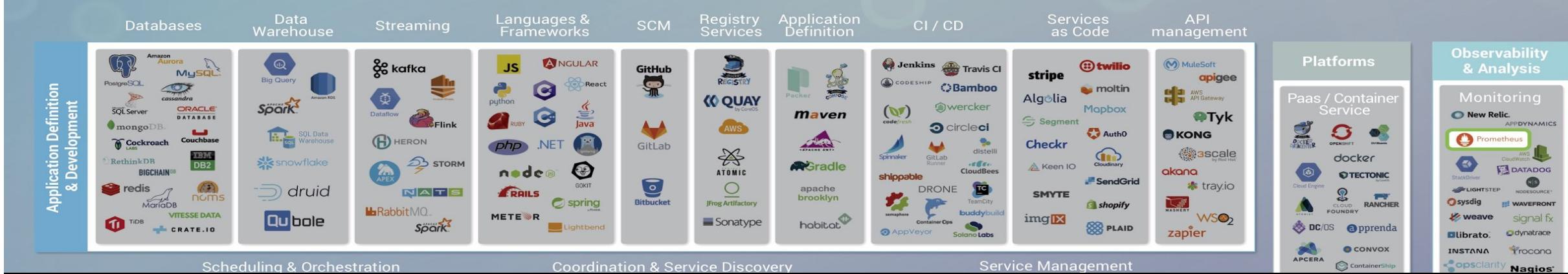
Choice of application services

Choice of development tools

Choice of build and deploy workflows

They don't want to have to worry about the infrastructure.





THE CLOUD-NATIVE APP DEV CHALLENGE



THE POWER OF THE OPENSHIFT ECOSYSTEM

RED HAT PORTFOLIO

Optimized for Containers

RED HAT[®]
OPENSHIFT
Application Runtimes

RED HAT JBOSS[®]
WEB SERVER

RED HAT JBOSS[®]
ENTERPRISE
APPLICATION PLATFORM

RED HAT[®]
DATA GRID

RED HAT[®]
AMQ

RED HAT[®]
FUSE

RED HAT[®]
MOBILE

RED HAT[®]
ANSIBLE[®]
Engine

RED HAT[®]
QUAY
CONTAINER
REGISTRY

RED HAT[®]
DECISION
MANAGER

RED HAT[®]
PROCESS AUTOMATION
MANAGER

RED HAT[®] 3SCALE[®]
API MANAGEMENT

RED HAT[®]
OPENSHIFT
Container Storage

THIRD-PARTY ISV

Red Hat Container Catalog (100s certified)



CLOUD SERVICES

Open Service Broker



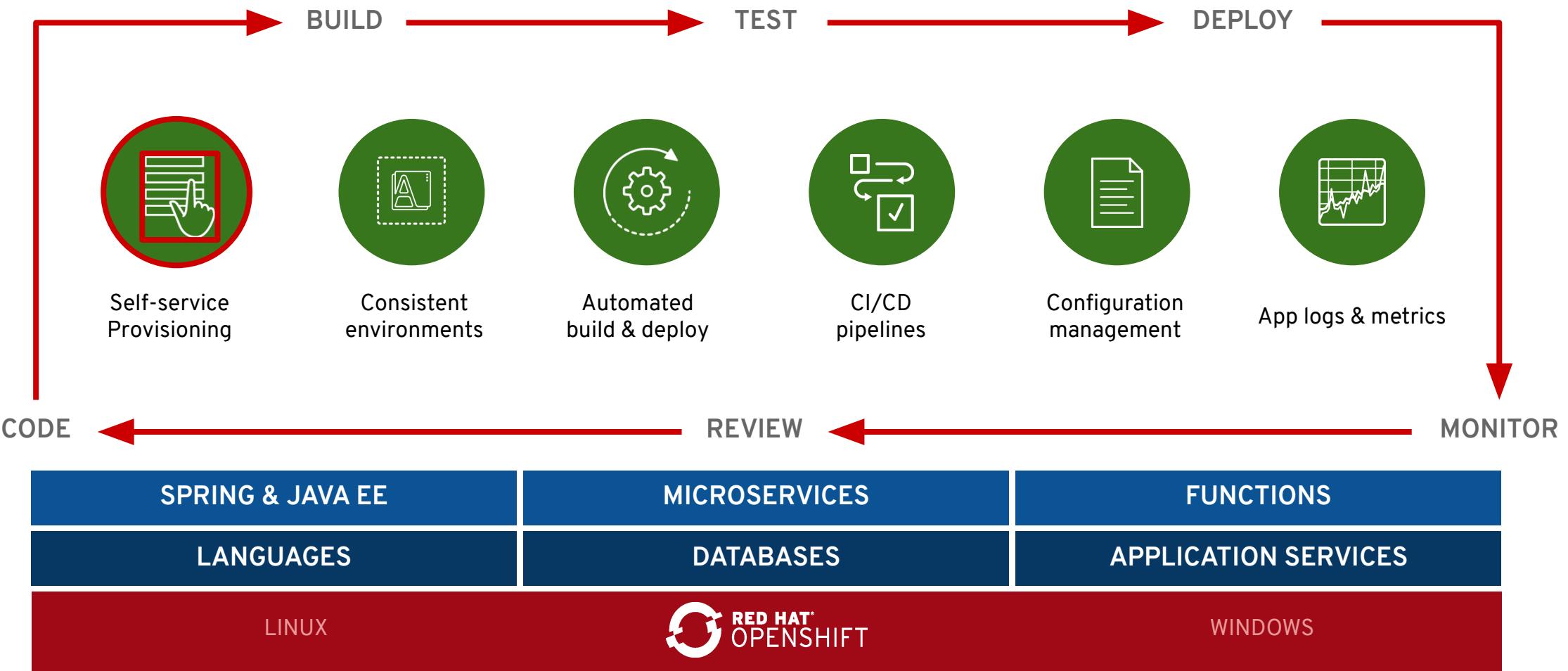
Microsoft Azure



RED HAT ENTERPRISE LINUX ECOSYSTEM

Hardware, Virtualization, Cloud and Service Provider Certifications

HOW OPENSHIFT ENABLES DEVELOPER PRODUCTIVITY





“Team went from dev to prod in 2 months on OpenShift, and nobody in IT Ops knew. The friction was removed.”

Simon Cashmore, Head of Middleware PM
Barclays

An aerial photograph of a large shipping port. The scene is filled with thousands of shipping containers stacked in tight, organized rows. The containers come in various colors, including red, blue, green, and white. Large yellow gantry cranes are positioned between the stacks, some with their arms extended over the containers. The port is situated next to a body of water, with several large cargo ships visible in the distance. The overall impression is one of a highly efficient and busy industrial hub.

The Kubernetes platform for IT Operations



IT Operations needs **secure, efficient and controlled processes**

Automated provisioning
Automated installations
Automated security scanning
Automated upgrades
Automated backups

And it needs to integrate with
what you already have.

AUTOMATED CONTAINER OPERATIONS

Fully automated day-1 and day-2 operations

INSTALL

DEPLOY

HARDEN

OPERATE

AUTOMATED OPERATIONS

Infra provisioning

Full-stack deployment

Secure defaults

Multi-cluster aware

Embedded OS

On-premises and cloud

Network isolation

Monitoring and alerts

Unified experience

Audit and logs

Full-stack patch & upgrade

Signing and policies

Zero downtime upgrades

Vulnerability scanning

A CONSISTENT CONTAINER APPLICATION PLATFORM

FROM YOUR DATACENTER TO THE CLOUD



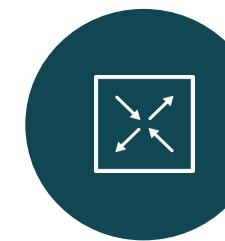
Automated
operations



Multi-tenant



Secure by
default



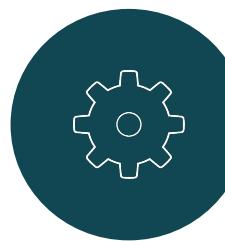
Network
traffic control



Over-the-air
updates



Monitoring
& chargeback



Pluggable
architecture



BARE METAL, VSphere, RHV, OPENSTACK, AWS, AZURE, GOOGLE

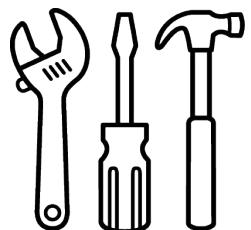
COMPREHENSIVE CONTAINER SECURITY



CONTROL
Application Security



DEFEND
Infrastructure



EXTEND

Container Content	CI/CD Pipeline
Container Registry	Deployment Policies
Container Platform	Container Host Multi-tenancy
Network Isolation	Storage
Audit & Logging	API Management
Security Ecosystem	

KUBERNETES OPERATOR FRAMEWORK

AN INNOVATIVE, MORE EFFICIENT WAY TO MANAGE CONTAINERIZED
APPLICATIONS AT SCALE

AUTOMATED LIFECYCLE MANAGEMENT



Operators codify operational knowledge and workflows to
automate lifecycle management of containerized applications
with Kubernetes

THE INDUSTRY IS ALIGNING BEHIND THE KUBERNETES OPERATOR FRAMEWORK



60+ Certified ISV Operators in Red Hat Early Access Program

OperatorHub.io

Contribute ▾

Welcome to OperatorHub.io

OperatorHub.io is a new home for the Kubernetes community to share Operators. Find an existing Operator or list your own today.

CATEGORIES

59 ITEMS

VIEW SORT A-Z

AI/Machine Learning

Application Runtime

Big Data

Cloud Provider

Database

Developer Tools

Integration & Delivery

Logging & Tracing

Monitoring

Networking

OpenShift Optional

Security

Storage

Streaming & Messaging

PROVIDER

- Amazon Web Services (1)
- Aqua Security (1)
- AtlasMap (1)
- Banzai Cloud (3)
- CNCF (2)

Show 43 more

akka

Akka Cluster Operator
provided by Lightbend, Inc.

Run Akka Cluster applications on OpenShift.

Apache Spark Operator
provided by radanalytics.io

An operator for managing the Apache Spark clusters and intelligent applications that...

Aqua Security Operator
provided by Aqua Security, Inc.

The Aqua Security Operator runs within Kubernetes cluster and provides a means to...

AtlasMap Operator
provided by AtlasMap

AtlasMap is a data mapping solution with an interactive web based user interface, t...

aws

AWS Service Operator
provided by Amazon Web Services, Inc.

The AWS Service Operator allows you to manage AWS...

Camel K Operator
provided by The Apache Software Foundation

Apache Camel K is a lightweight integration...

CockroachDB
provided by Helm Community

CockroachDB Operator based on the CockroachDB helm chart

Community Jaeger Operator
provided by CNCF

Provides tracing, monitoring and troubleshooting microservices-based...

Red Hat

MORE THAN JUST A KUBERNETES PLATFORM

RED HAT® QUAY CONTAINER REGISTRY

Enterprise image registry with geo-replication, time machine and security scanning

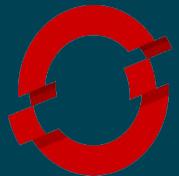
RED HAT® OPENSHIFT Container Storage

Container-optimized software-defined storage on OpenShift

CONTAINER-NATIVE VIRTUALIZATION

Single workflow for containers and virtual machines running on OpenShift

ONE PLATFORM FLEXIBLE CONSUMPTION MODELS



**RED HAT®
OPENSHIFT**
Online

SaaS offering to build, deploy,
and scale container
applications in the cloud



**RED HAT®
OPENSHIFT**
Dedicated

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



**RED HAT®
OPENSHIFT**
Container Platform

Manage your own secure,
enterprise-grade Kubernetes
platform

Thank you

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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