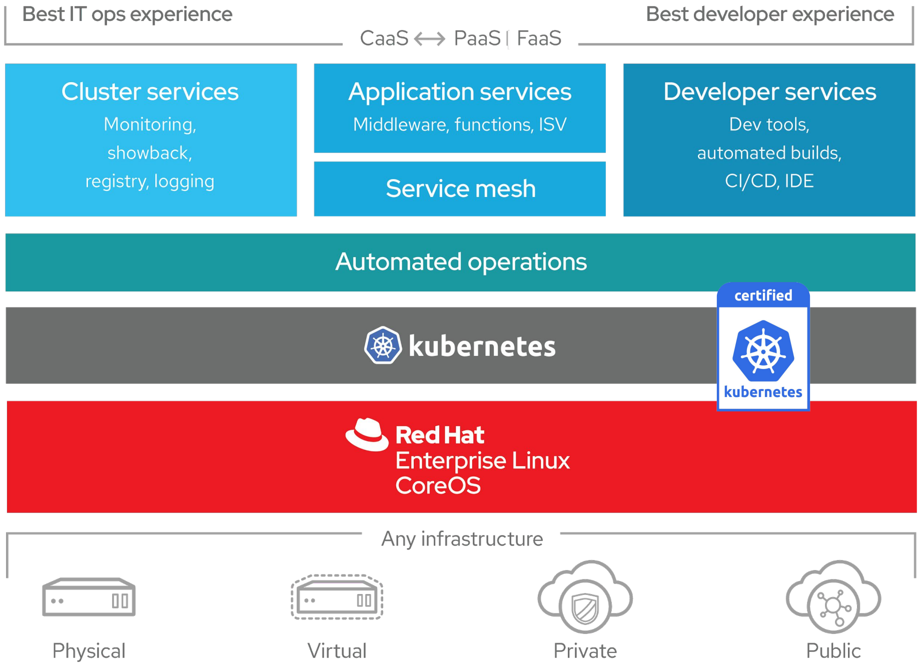
OpenShift 4 Roadmap Update

Duncan Hardie

Product Manager

Jan Kleinert

Developer Advocate

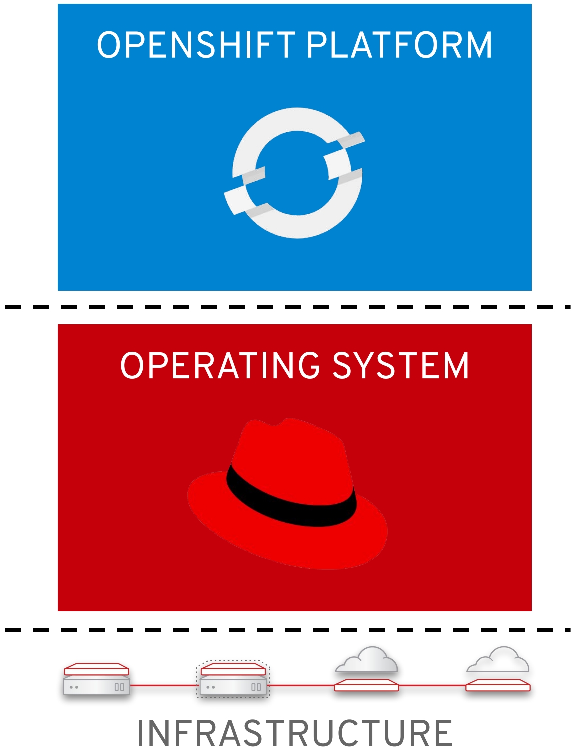


OpenShift 4 Platform

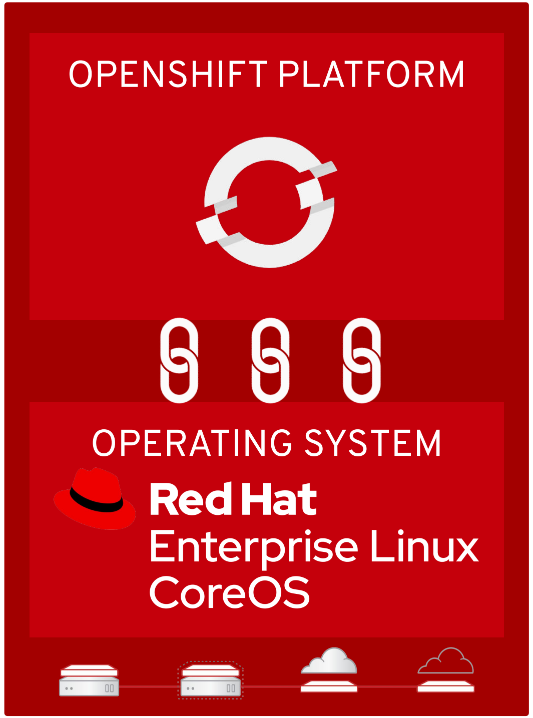
- Fully integrated and automated
- Seamless Kubernetes deployment
- Fully automated installation
- 1-click platform updates
- Autoscaling of cloud resources

Full-stack automated install

OPENSHIFT 3 & 4



OPENSHIFT 4 (only)



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

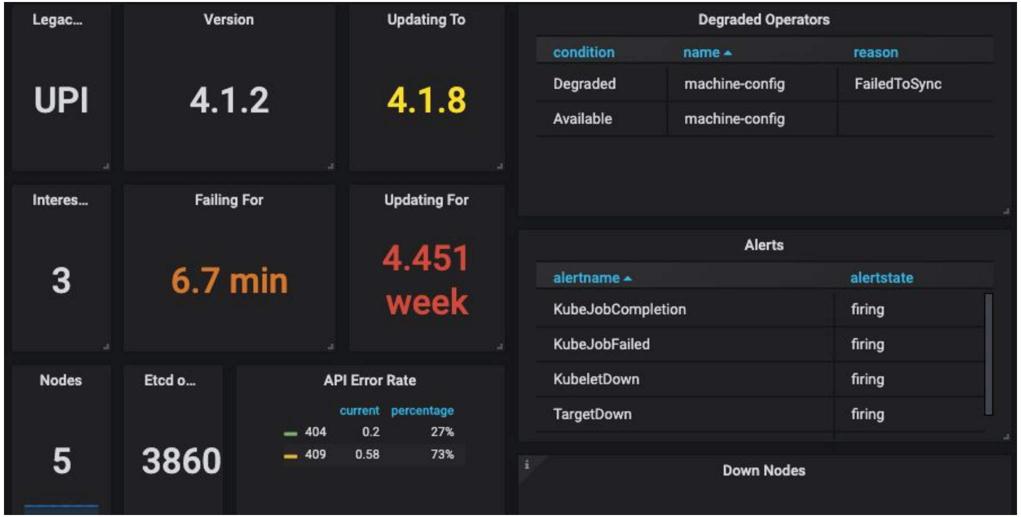
Connected Customer

Proactive support for customer issues

- Active upgrades
- Overall cluster health
- Firing alerts
- Node health

Driving a high quality product

- Monitor and improve upon the health of the customer base
- Prioritize engineering roadmap for platforms and prove they are improving over time
- Active monitoring of fast and stable channels



Legac... UPI

Version 4.1.2

Updating To 4.1.8

Interes... 3

Failing For 6.7 min

Updating For 4.451 week

Nodes 5

Etcd o... 3860

API Error Rate

	current	percentage
— 404	0.2	27%
— 409	0.58	73%

Degraded Operators

condition	name ▴	reason
Degraded	machine-config	FailedToSync
Available	machine-config	

Alerts

alertname ▴	alertstate
KubeJobCompletion	firing
KubeJobFailed	firing
KubeletDown	firing
TargetDown	firing

Down Nodes

OpenShift CY2020

Initiatives

Edge

Address needs of rapidly emerging Telco 5G Edge use cases, in a manner that can be leveraged for other Edge use cases in future.

Multi-Cluster

We must drive the foundational components of our architecture stack to converge with MCM and other open source solutions.

Stabilize the platform

Fine tune delivering IaaS platforms. Create new deployment patterns that mix a hosted and on premise customer needs.

Drive Workload and Usage

Deliver the best combination of next generation developer experiences on innovative open source technologies found in the cloud native ecosystem. Strengthen our operator ISV solutions.

OpenShift 4.3

INSTALLER CUSTOMIZATION

Improvements for disconnected

Internal facing/private clusters

Customer provisioned VPC/VNet/etc and subnets

SECURITY & COMPLIANCE

FIPS validated crypto

Disk encryption for RHCOS

Encrypted etcd datastore

Kubernetes 1.16

IMPROVED NETWORKING

High performance multicast to clients outside cluster

SR-IOV graduates to GA

Additional monitoring for OVN

Install/Upgrade

4.3 Supported Providers

Full Stack Automation (IPI)

- amazon web services
- Microsoft Azure
- Google Cloud Platform
- RED HAT OPENSTACK PLATFORM

Pre-existing Infrastructure (UPI)

- amazon web services
- Microsoft Azure *
- Google Cloud Platform
- vmware vSphere
- IBM Z *
- Bare Metal

** Support planned for an upcoming 4.3 z-stream release*

Generally Available

PMs: Katherine Dubé (AWS, Azure, GCP), Maria Bracho (BM UPI, VMware, Upgrades), Peter Lauterbach (RHV), Ramon Acedo Rodriguez (OSP, BM IPI), Mike Barrett (IBM Z & Power)

OpenShift Upgrades

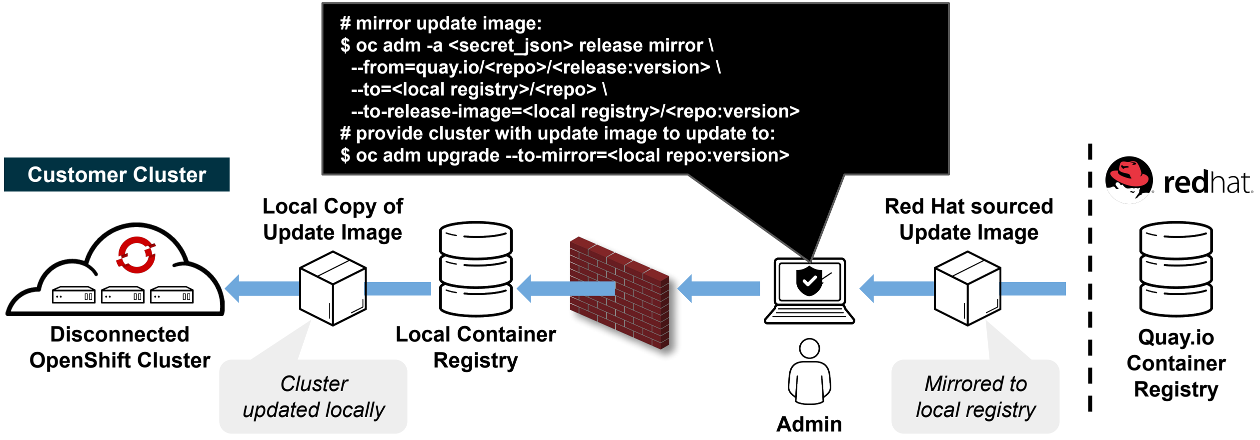
OCP 4.3 Upgrade Channels

- OCP 4.3 includes three upgrade channels:
    - candidate-4.3
        - Should be used to test features coming up in new releases
        - Ideal for test environment
    - fast-4.3
        - This channel will be updated with new 4.3 patch versions as soon as GA.
    - stable-4.3
        - This channel will be updated with new 4.3 patch versions on a time delay by design. This allows Red Hat's SREs to receive feedback from connected environments. If issues are found, then upgrades to it are blocked in both stable and fast channels. New versions on both channels are updated as soon as fixes are in place.

Generally Available

Product Manager: Maria Bracho (UPI BM, VMware, OTA)

Disconnected “Air-gapped” Installation & Upgrading



```
# mirror update image:
$ oc adm -a <secret_json> release mirror \
  --from=quay.io/<repo>/<release:version> \
  --to=<local registry>/<repo> \
  --to-release-image=<local registry>/<repo:version>
# provide cluster with update image to update to:
$ oc adm upgrade --to-mirror=<local repo:version>
```

Customer Cluster
Disconnected OpenShift Cluster
Local Copy of Update Image
Cluster updated locally
Local Container Registry
Admin
Red Hat sourced Update Image
Mirrored to local registry
redhat
Quay.io Container Registry

Overview

- 4.2 introduces support for installing and updating OpenShift clusters in disconnected environments
- Requires local Docker 2.2 spec compliant container registry to host OpenShift content
- Designed to work with the user provisioned infrastructure deployment method
  - *Note: Will not work with Installer provisioned infrastructure deployments*

Installation Procedure

- Mirror OpenShift content to local container registry in the disconnected environment
- Generate install-config.yaml: $ ./openshift-install create install-config --dir <dir>
  - Edit and add pull secret (PullSecret), CA certificate (AdditionalTrustBundle), and image content sources (ImageContentSources) to install-config.yaml
- Set the OPENSHIFT_INSTALL_RELEASE_IMAGE_OVERRIDE environment variable during the creation of the ignition configs
- Generate the ignition configuration: $ ./openshift-install create ignition-configs --dir <dir>
- Use the resulting ignition files to bootstrap the cluster deployment

Generally Available

Support for installing cluster with private facing endpoints

Support for installing private/internal facing clusters

- Enables clusters to be installed on Day 1 as fully private/internal facing on supported public cloud providers
  - Private clusters don’t expose any external endpoints *(API & default Ingress LB’s are private)*
  - Cluster is only accessible from an internal network and are not visible to the Internet
  - Useful for customer environments that don't require external connectivity to the outside world and prefer not to expose their cluster network information publicly

Requirements

- Admins need to edit the install-config.yaml file to define how you wish to publish the user-facing endpoints of your cluster *[Internal or External]*

Documentation

- **AWS:** https://docs.openshift.com/container-platform/4.3/installing/installing_aws/installing-aws-private.html
- **Azure:** https://docs.openshift.com/container-platform/4.3/installing/installing_azure/installing-azure-private.html
- **GCP:** https://docs.openshift.com/container-platform/4.3/installing/installing_gcp/installing-gcp-private.html

```
metadata:
  name: test-cluster
networking:
  clusterNetwork:
  - cidr: 10.128.0.0/14
    hostPrefix: 23
  machineCIDR: 10.0.0.0/16
  networkType: OpenShiftSDN
  serviceNetwork:
  - 172.30.0.0/16
platform:
  azure:
    region: centralus
    baseDomainResourceGroupName:
resource_group
    networkResourceGroupName:
vnet_resource_group
    virtualNetwork: vnet
    controlPlaneSubnet:
control_plane_subnet
    computeSubnet: compute_subnet
pullSecret: '{"auths": ...}'
fips: false
sshKey: ssh-ed25519 AAAA...
publish: Internal
```

Generally Available

App migration experience

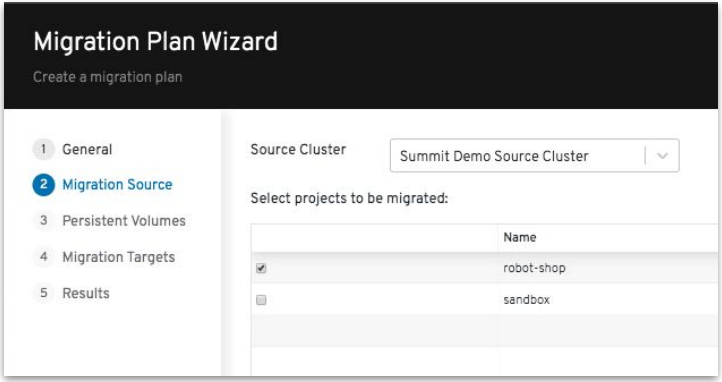
Using open source tooling based on Velero

Velero is an upstream project previously known as Ark. Check out this video if you are curious and want to get a sneak peek at our capabilities.

What's moved during a migration

- Namespaces
- Persistent Volumes (move or copy)
- All important resource objects (Deployments, StatefulSets, etc)

Available from OpenShift 4.2



Migration Plan Wizard

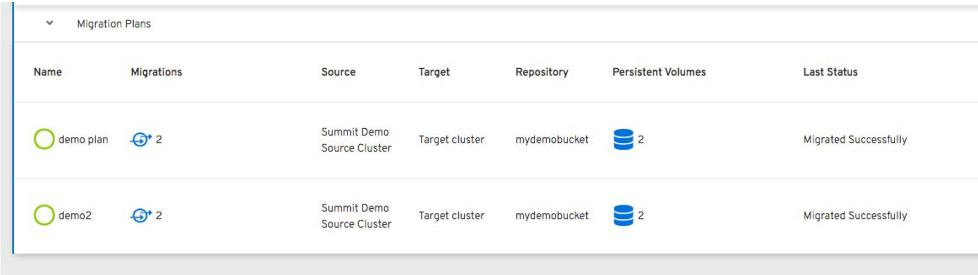
Create a migration plan

1 General
2 Migration Source
3 Persistent Volumes
4 Migration Targets
5 Results

Source Cluster: Summit Demo Source Cluster

Select projects to be migrated:

	Name
☑	robot-shop
□	sandbox



Migration Plans

Name	Migrations	Source	Target	Repository	Persistent Volumes	Last Status
○ demo plan	2	Summit Demo Source Cluster	Target cluster	mydemobucket	2	Migrated Successfully
○ demo2	2	Summit Demo Source Cluster	Target cluster	mydemobucket	2	Migrated Successfully

Day 2 Management

Security Themes

Control Application Security

Connect workload identity to Cloud provider authorization

Application certificate lifecycle management

Defend the Infrastructure

Encrypt etcd datastore

Enhanced certificate management

RHEL CoreOS disk encryption

VPN / VPC support

Consume group membership from Identity Provider

External Keycloak integration

Automate Compliance

Disconnected / air-gapped install

FIPS compliance

Cipher Suite Configuration

Compliance Operator

Stronger Platform Security

Defense in Depth

CONTROL
Application Security

DEFEND
Infrastructure

EXTEND

- FIPS Compliance
- Encrypt etcd datastore
- RHEL CoreOS network bound disk encryption
- Private clusters with existing VPN / VPC
- Internal ingress controller
- Ingress Cipher & TLS Policy Configuration
- Log forwarding (tech preview)

Product Manager: Kirsten Newcomer & Keith Basil

OpenShift 4 and Fips 140-2

FIPS ready Services

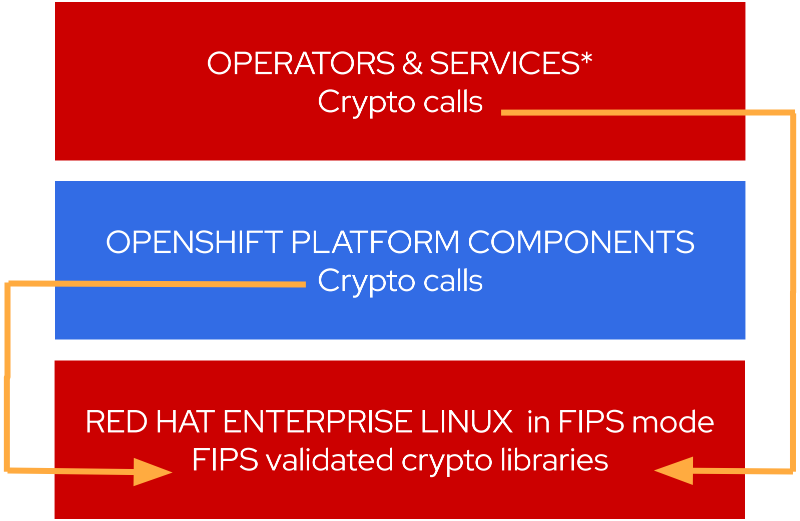
- When built with RHEL 7 base image

OpenShift calls FIPS validated crypto

- When running on RHEL in FIPS mode, OpenShift components bypass go cryptographic routines and call into a RHEL FIPS 140-2 validated cryptographic library
- This feature is specific to binaries built with the RHEL go compiler and running on RHEL

RHEL CoreOS FIPS mode

- Configure at install to enforce use of FIPS Implementation Under Test* modules


OPERATORS & SERVICES*
Crypto calls
OPENSHIFT PLATFORM COMPONENTS
Crypto calls
RED HAT ENTERPRISE LINUX in FIPS mode
FIPS validated crypto libraries

*When built with RHEL base images

More about RHEL go and FIPS 140-2

Tech Preview

Monitoring your own services

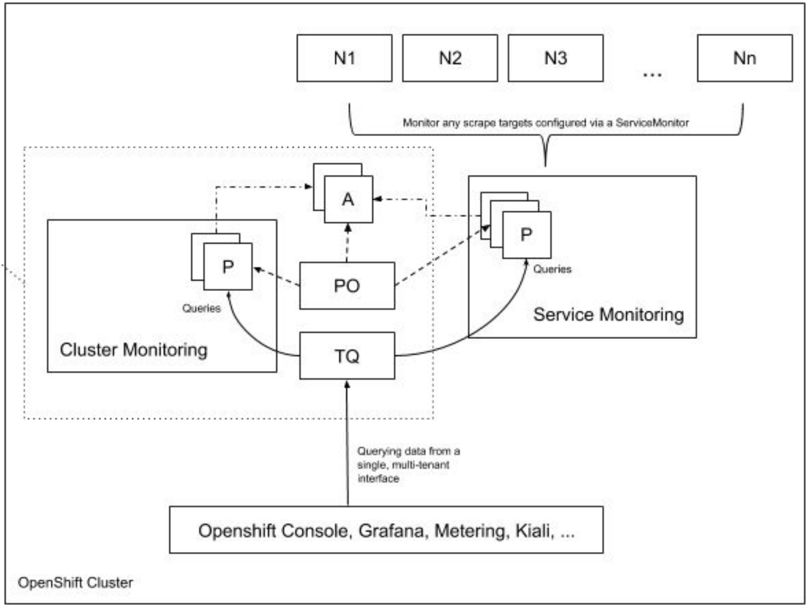
Extend existing stack to configure monitoring for any service running on OpenShift.

Goals for this milestone are:

- Feedback!
- Enable additional Prometheus servers that your customers own, but are managed by us.
- Configure monitoring for your business critical services not covered by the out-of-the-box monitoring stack.
- Access metrics through a single, multi-tenant interface.
- Maintain notifications in a centralized Alertmanager setup.
- Developers can query metrics through the developer perspective.

.

Preinstalled in any OpenShift cluster


N1
N2
N3
...
Nn
Monitor any scrape targets configured via a ServiceMonitor
A
P
P
Queries
PO
Queries
Service Monitoring
Cluster Monitoring
TQ
Querying data from a single, multi-tenant interface
Openshift Console, Grafana, Metering, Kiali, ...
OpenShift Cluster

Multi Cloud

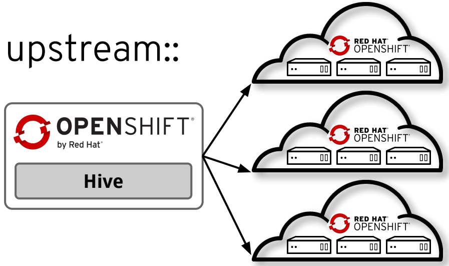
PATH TO MULTI-CLUSTER

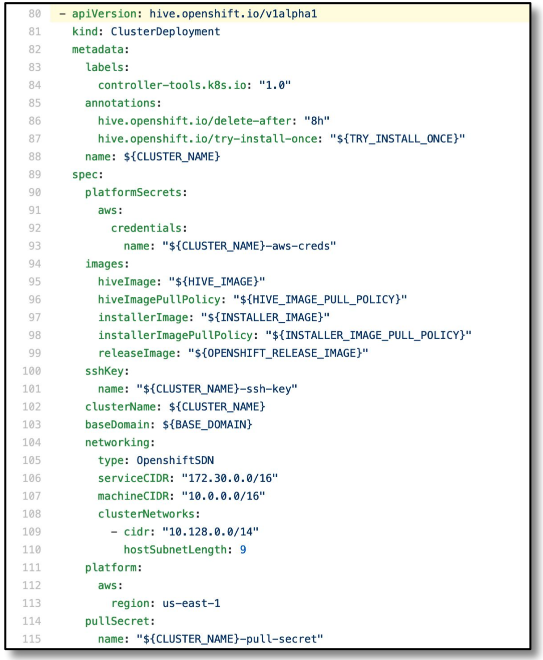
Provisioning/Cluster Lifecycle	● OpenShift Installer, Hive, MCM
UX/Inventory/Lifecycle	● MCM, OCM, On-premise OCM frontend for Hive
Common Monitoring & Logging	● Multi-cluster Monitoring and Observability
Job Deployment & Policy	● MCM, gitOps, App SIG projects
Infrastructure	● Network: Submariner ● Storage: Building on Noobaa

Product Managers: Duncan Hardie, Jacob Lucky (OCM), Katherine Dubé (Installer, Hive)

Multi Cluster Life Cycle

- Getting Clusters as if they were Pods
  - Head cluster with CRD to understand cluster config
- API driven OpenShift 4 cluster provisioning and management
- Hive is an operator that runs on top of OpenShift
- Used to provision and perform initial configuration of OpenShift clusters
- Working code & documentation available upstream::
  - *https://github.com/openshift/hive*





```yaml
- apiVersion: hive.openshift.io/v1alpha1
  kind: ClusterDeployment
  metadata:
    labels:
      controller-tools.k8s.io: "1.0"
    annotations:
      hive.openshift.io/delete-after: "8h"
      hive.openshift.io/try-install-once: "${TRY_INSTALL_ONCE}"
    name: ${CLUSTER_NAME}
  spec:
    platformSecrets:
      aws:
        credentials:
          name: "${CLUSTER_NAME}-aws-creds"
    images:
      hiveImage: "${HIVE_IMAGE}"
      hiveImagePullPolicy: "${HIVE_IMAGE_PULL_POLICY}"
      installerImage: "${INSTALLER_IMAGE}"
      installerImagePullPolicy: "${INSTALLER_IMAGE_PULL_POLICY}"
      releaseImage: "${OPENSHIFT_RELEASE_IMAGE}"
    sshKey:
      name: "${CLUSTER_NAME}-ssh-key"
    clusterName: ${CLUSTER_NAME}
    baseDomain: ${BASE_DOMAIN}
    networking:
      type: OpenshiftSDN
      serviceCIDR: "172.30.0.0/16"
      machineCIDR: "10.0.0.0/16"
      clusterNetworks:
        - cidr: "10.128.0.0/14"
          hostSubnetLength: 9
    platform:
      aws:
        region: us-east-1
    pullSecret:
      name: "${CLUSTER_NAME}-pull-secret"
```

OpenShift 4.4

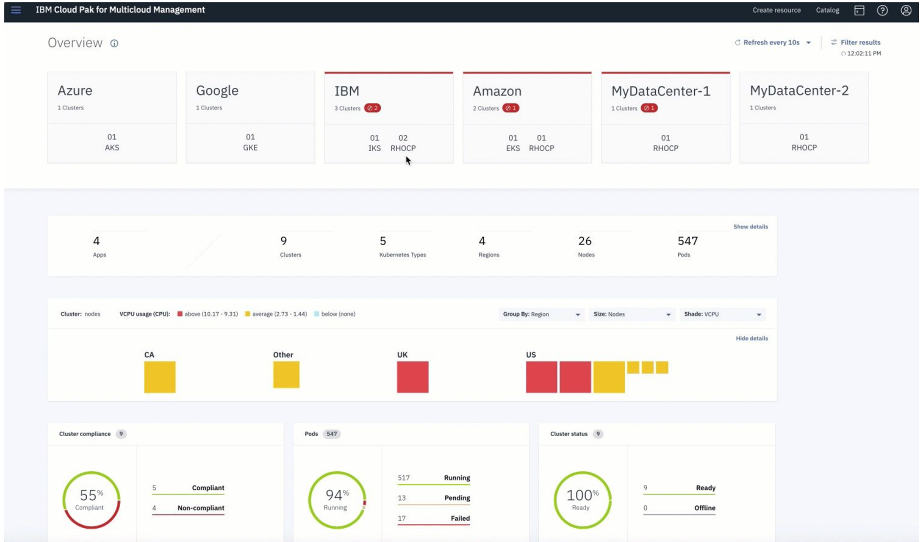
- Initial GA release
- Support for provisioning clusters on AWS, Azure, and GCP

OpenShift 4.5

- On-premise Cluster Manager (MCM) front-end

Integration with IBM MCM

- Discovery
- Application modelling
- Policy
- Compliance
- Incidents and remediation
- Dynamic search
- Multicluster application placement



IBM Cloud Pak for Multicloud Management

Create resource

Catalog

Overview

Refresh every 10s

Filter results

12:02:11 PM

Azure
1 Clusters
01
AKS

Google
1 Clusters
01
GKE

IBM
3 Clusters ⊘2
01 IKS
02 RHOCP

Amazon
2 Clusters ⊘1
01 EKS
01 RHOCP

MyDataCenter-1
1 Clusters ⊘1
01
RHOCP

MyDataCenter-2
1 Clusters
01
RHOCP

Show details

4	9	5	4	26	547
Apps	Clusters	Kubernetes Types	Regions	Nodes	Pods

Cluster: nodes

VCPU usage (CPU): 🟥 above (10.17 - 9.31) 🟨 average (2.73 - 1.44) ■ below (none)

Group By: Region

Size: Nodes

Shade: VCPU

Hide details

Cluster compliance 9

55% Compliant

5 Compliant

4 Non-compliant

Pods 547

94% Running

517 Running

13 Pending

17 Failed

Cluster status 9

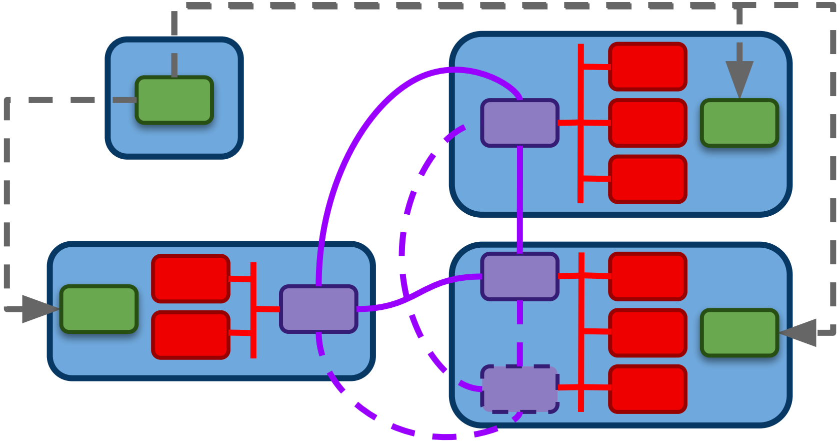
100% Ready

9 Ready

0 Offline

Multi-Cluster Networking

- Submariner project
  - Controlled, secure communication between clusters
  - Agents and controller run on nodes which are connected in a mesh
  - Dev preview available from OCP catalog
- Lighthouse and Coastguard are projects that provide multi cluster DNS and network policy accordingly on top of Submariner



GitOps with ArgoCD Reference Architecture

- Install and configuration of ArgoCD on OpenShift
- OpenShift cluster configs with ArgoCD
  - Cluster config CRs (identify provider, registry, etc)
  - Operator installation via OLM
- Multiple clusters with single GitHub repo
  - Shared configs
  - Cluster-specific configs
- ArgoCD Operator

Cloud Native Development

OpenShift has all of the latest **tools** and **services**
to make your devs more productive

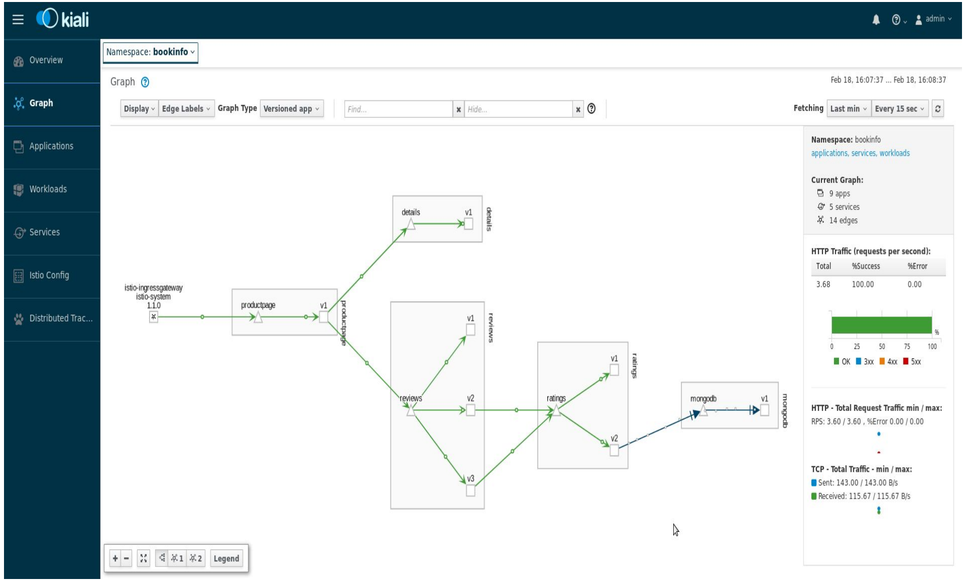
Code	**Pipelines**
Serverless	**Service Mesh**

Service Mesh

OpenShift Service Mesh

Key Features & Updates

- Version 1.1 coming mid-February
- Upgrade Istio to version 1.4
- Direct links from OCP Console
- Labeled HAProxy routes into the mesh
- Kiali has been updated to Patternfly4
- Jaeger streaming support via Kafka
- Allow Jaeger to be used with an external Elasticsearch instance



Namespace: **bookinfo**

Graph

Feb 18, 16:07:37 ... Feb 18, 16:08:37

Graph Type: Versioned app

Fetching: Last min, Every 15 sec

Namespace: bookinfo
applications, services, workloads

Current Graph:
9 apps
5 services
14 edges

HTTP Traffic (requests per second):

Total	%Success	%Error
3.68	100.00	0.00

🟩 OK 🟦 3xx 🟧 4xx 🟥 5xx

HTTP - Total Request Traffic min / max:
RPS: 3.60 / 3.60 , %Error 0.00 / 0.00

TCP - Total Traffic - min / max:
🟦 Sent: 143.00 / 143.00 B/s
🟩 Received: 115.67 / 115.67 B/s

Product Manager: Brian ‘redbeard’ Harrington

Serverless

Jan 2020, London

Tech Preview

OpenShift Serverless in 4.3

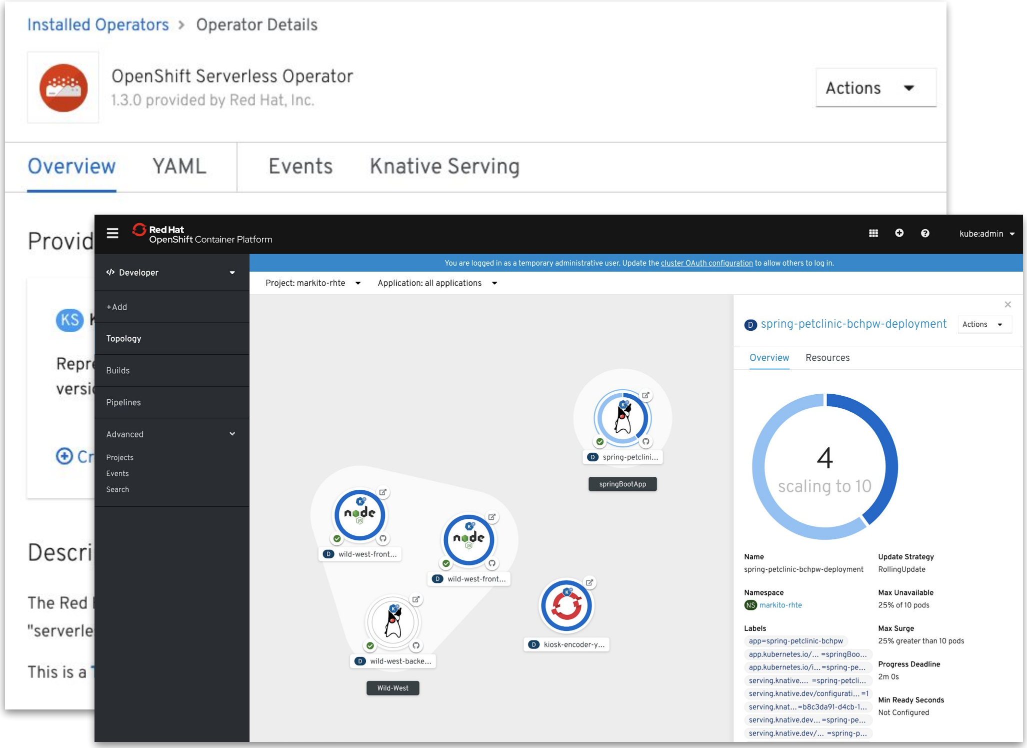
Key features and updates

- **Serverless Operator v1.3.0**
- **Knative v0.10**
- **OLM dependency resolution for Service Mesh**
- Dropped support for Kubernetes 1.14 (OCP 4.1)

Learn more

https://openshift.com/learn/topics/serverless

Knative Tutorial


Installed Operators > Operator Details

OpenShift Serverless Operator
1.3.0 provided by Red Hat, Inc.

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: markito-rhte

Application: all applications

spring-petclinic-bchpw-deployment

4
scaling to 10

Name
spring-petclinic-bchpw-deployment

Update Strategy
RollingUpdate

Namespace
NS markito-rhte

Max Unavailable
25% of 10 pods

Labels
app=spring-petclinic-bchpw
app.kubernetes.io/... =springBoo...
app.kubernetes.io/i... =spring-pe...
serving.knative.... =spring-petcli...
serving.knative.dev/configurati... =1
serving.knat... =b8c3da91-d4cb-1...
serving.knative.dev... =spring-pe...
serving.knative.dev/... =spring-p...

Max Surge
25% greater than 10 pods

Progress Deadline
2m 0s

Min Ready Seconds
Not Configured

Product Manager: William Markito

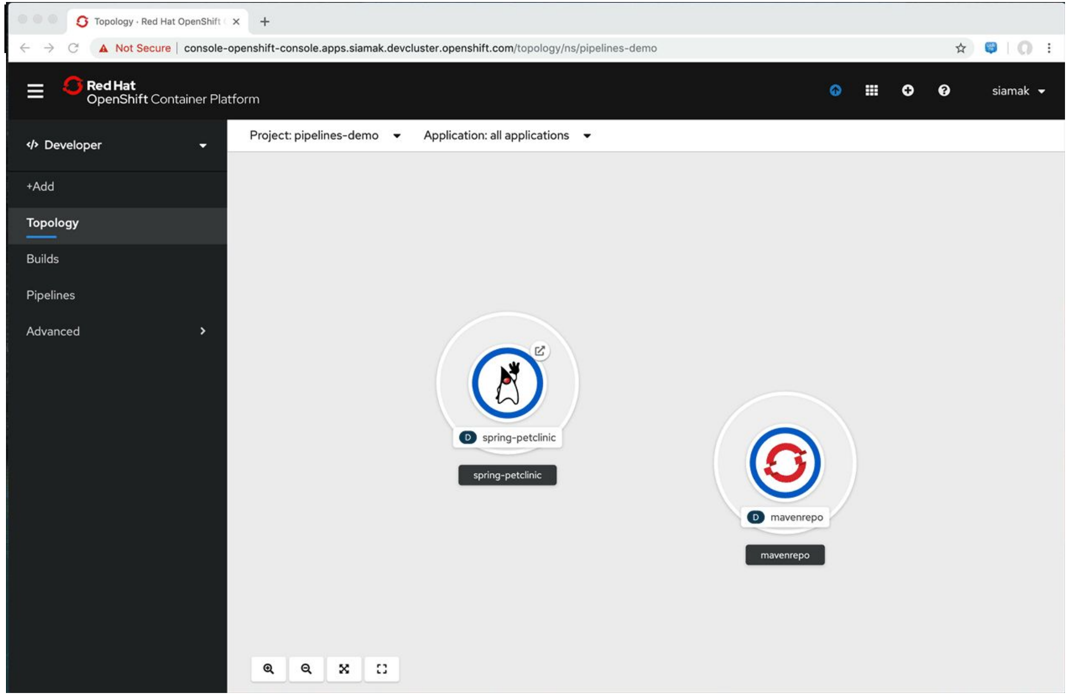
Pipelines

Jan 2020, London

Tech Preview (Feb)

Cloud-native CI/CD with OpenShift

- Based on Tekton Pipelines
- Runs serverless (no CI engine!)
- Containers as building blocks
- Build images with Kubernetes tools (s2i, buildah, kaniko, jib, buildpack, etc)
- Pipelines portable to any Kubernetes
- Available in OperatorHub
- Tekton CLI

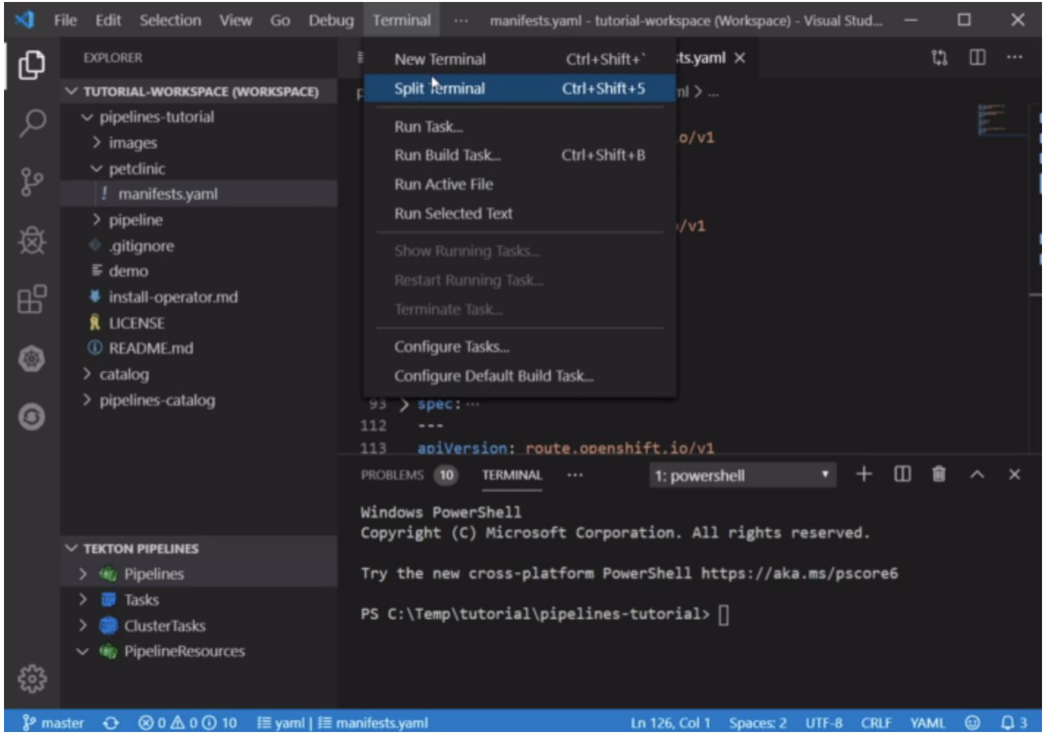

Topology · Red Hat OpenShift
Not Secure | console-openshift-console.apps.siamak.devcluster.openshift.com/topology/ns/pipelines-demo
Red Hat
OpenShift Container Platform
siamak
Developer
+Add
Topology
Builds
Pipelines
Advanced
Project: pipelines-demo
Application: all applications
D spring-petclinic
spring-petclinic
D mavenrepo
mavenrepo

Product Manager: Siamak Sadeghianfar

TEKTON Red Hat

Tekton Pipelines VSCode Extension

Create, triggers and manage Tekton Pipelines on OpenShift and Kubernetes from Visual Studio Code



```
> spec: ···
---
apiVersion: route.openshift.io/v1
```

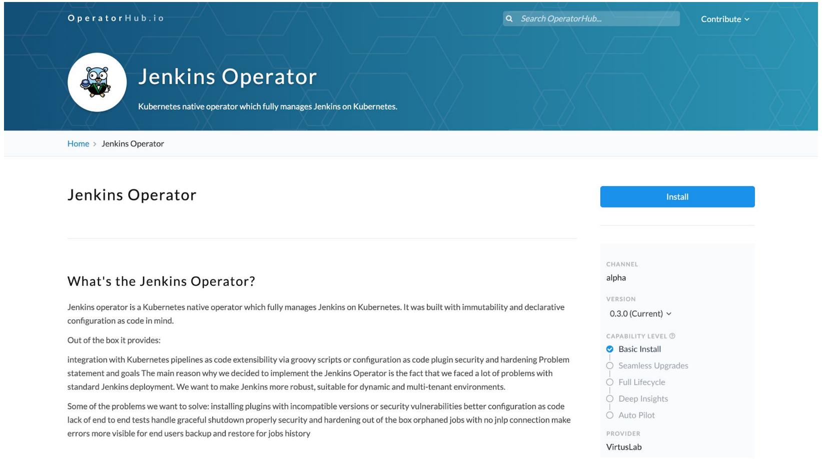
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Temp\tutorial\pipelines-tutorial> 
```

Jenkins

- Jenkins server on JDK 8 & 11
- Jenkins agents
  - JDK 11
  - Node.js 10
- Official Jenkins Operator
  - github.com/jenkinsci/kubernetes-operator
  - Available in OperatorHub.io
  - Developer Preview on OCP 4.3
  - Collaboration upstream



Jenkins Operator

Kubernetes native operator which fully manages Jenkins on Kubernetes.

What's the Jenkins Operator?

Jenkins operator is a Kubernetes native operator which fully manages Jenkins on Kubernetes. It was built with immutability and declarative configuration as code in mind.

Out of the box it provides:

integration with Kubernetes pipelines as code extensibility via groovy scripts or configuration as code plugin security and hardening Problem statement and goals The main reason why we decided to implement the Jenkins Operator is the fact that we faced a lot of problems with standard Jenkins deployment. We want to make Jenkins more robust, suitable for dynamic and multi-tenant environments.

Some of the problems we want to solve: installing plugins with incompatible versions or security vulnerabilities better configuration as code lack of end to end tests handle graceful shutdown properly security and hardening out of the box orphaned jobs with no jnlp connection make errors more visible for end users backup and restore for jobs history

CHANNEL
alpha

VERSION
0.3.0 (Current)

CAPABILITY LEVEL
- ✓ Basic Install
- ○ Seamless Upgrades
- ○ Full Lifecycle
- ○ Deep Insights
- ○ Auto Pilot

PROVIDER
VirtusLab

Product Manager: Siamak Sadeghianfar

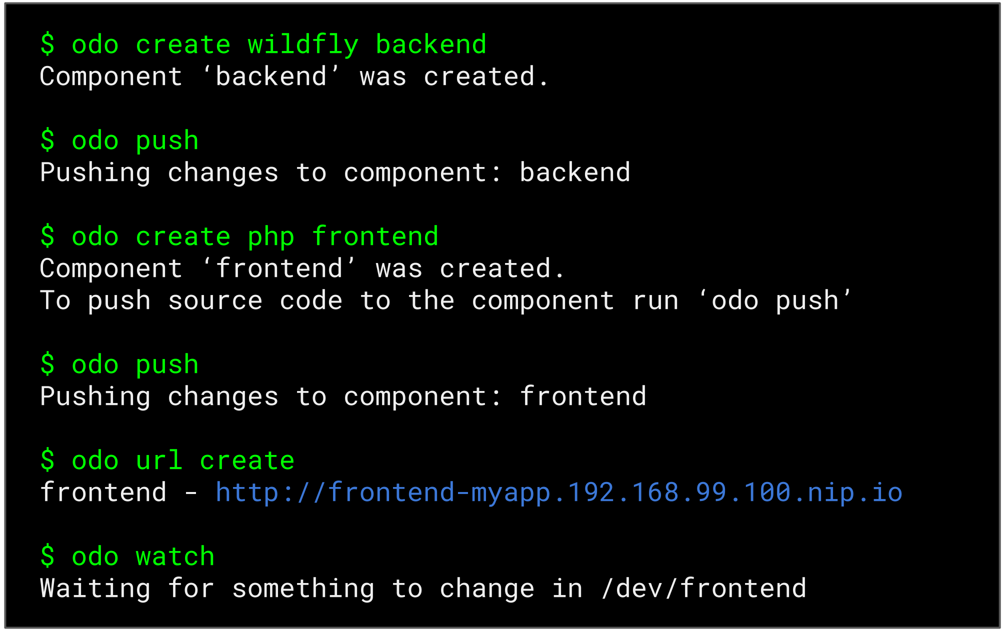
CodeReady / Dev Tools

odo - OpenShift’s Dev-Focused CLI

Focus on additional stability & customer usage (46 issues fixed)

Improve output when showing list of components

Focus on R&D/spike for new use cases: Knative, other runtimes, devfile support, etc



```
$ 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
```

Product Manager: Steve Speicher

CodeReady Containers: OpenShift on your Laptop

New in 4.3:

- Automatic certificate rotation for internal node<->master communication
- 4.3 embedded GA version targeted for February 4th
- Ongoing updates with 4.2 z-stream updates
- Deprecated: removed VirtualBox support
- crc version outputs embedded OCP version number
- Many stability fixes around host networking

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.

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

$ crc start
Start with the Hyperkit 4.3 bundle

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

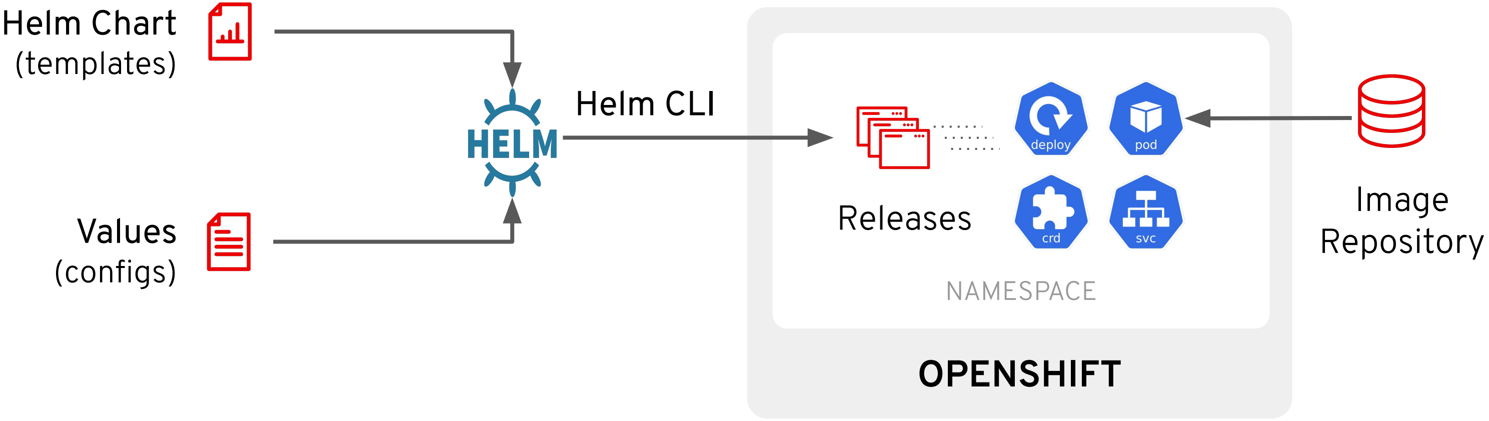
Product Manager: Steve Speicher

Helm

Tech Preview

Helm 3 on OpenShift

Helm is a package manager for Kubernetes applications and helps to define, install and update apps



Tech Preview

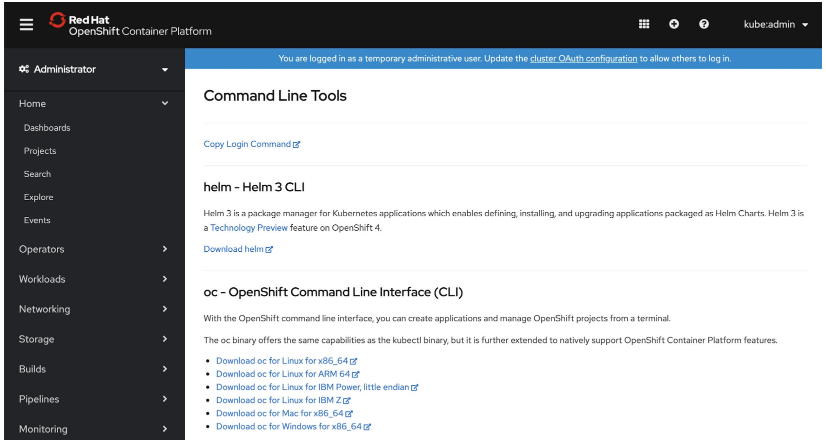
Helm 3 on OpenShift

OpenShift 4.3

- Helm 3 CLI in Tech Preview
- Built and shipped with OpenShift
- Available in Console CLI menu
- Added to OpenShift Docs

OpenShift 4.4+

- Helm 3 in Dev Console
  - Charts in Developer Catalog
  - Releases in Dev Console
  - Update/rollback/delete
- Helm developer guides



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Command Line Tools

Copy Login Command

helm - Helm 3 CLI

Helm 3 is a package manager for Kubernetes applications which enables defining, installing, and upgrading applications packaged as Helm Charts. Helm 3 is a Technology Preview feature on OpenShift 4.

Download helm

oc - OpenShift Command Line Interface (CLI)

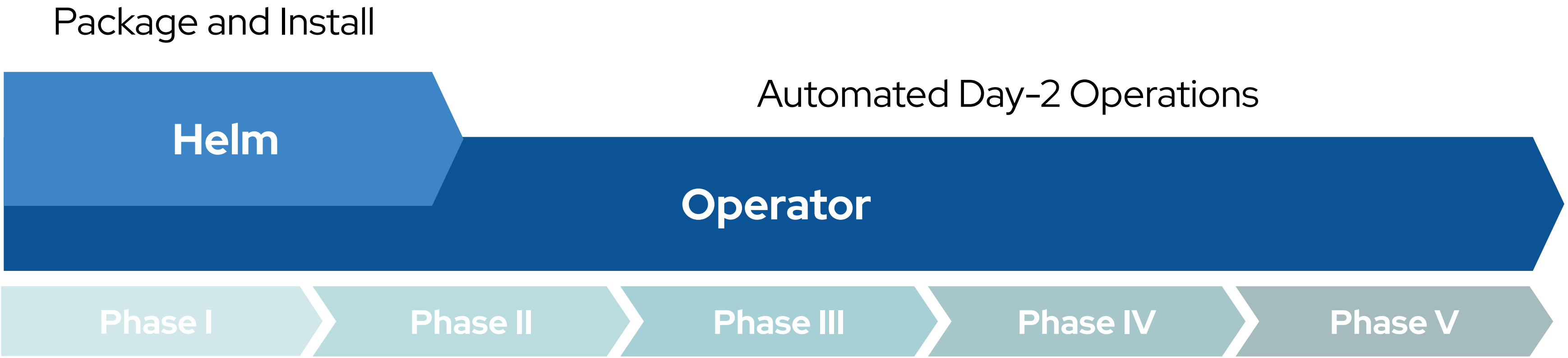
With the OpenShift command line interface, you can create applications and manage OpenShift projects from a terminal.

The oc binary offers the same capabilities as the kubectl binary, but it is further extended to natively support OpenShift Container Platform features.

- Download oc for Linux for x86_64
- Download oc for Linux for ARM 64
- Download oc for Linux for IBM Power, little endian
- Download oc for Linux for IBM Z
- Download oc for Mac for x86_64
- Download oc for Windows for x86_64

Product Manager: Siamak Sadeghianfar

Helm and Operators



Package and Install

Helm

Automated Day-2 Operations

Operator

Phase I

Phase II

Phase III

Phase IV

Phase V

Basic Install

Automated application provisioning and configuration management

Seamless Upgrades

Patch and minor version upgrades supported

Full Lifecycle

App lifecycle, storage lifecycle (backup, failure recovery)

Deep Insights

Metrics, alerts, log processing and workload analysis

Auto Pilot

Horizontal/vertical scaling, auto config tuning, abnormal detection, scheduling tuning

Product Manager: Siamak Sadeghianfar

OpenShift Console

The future is now.

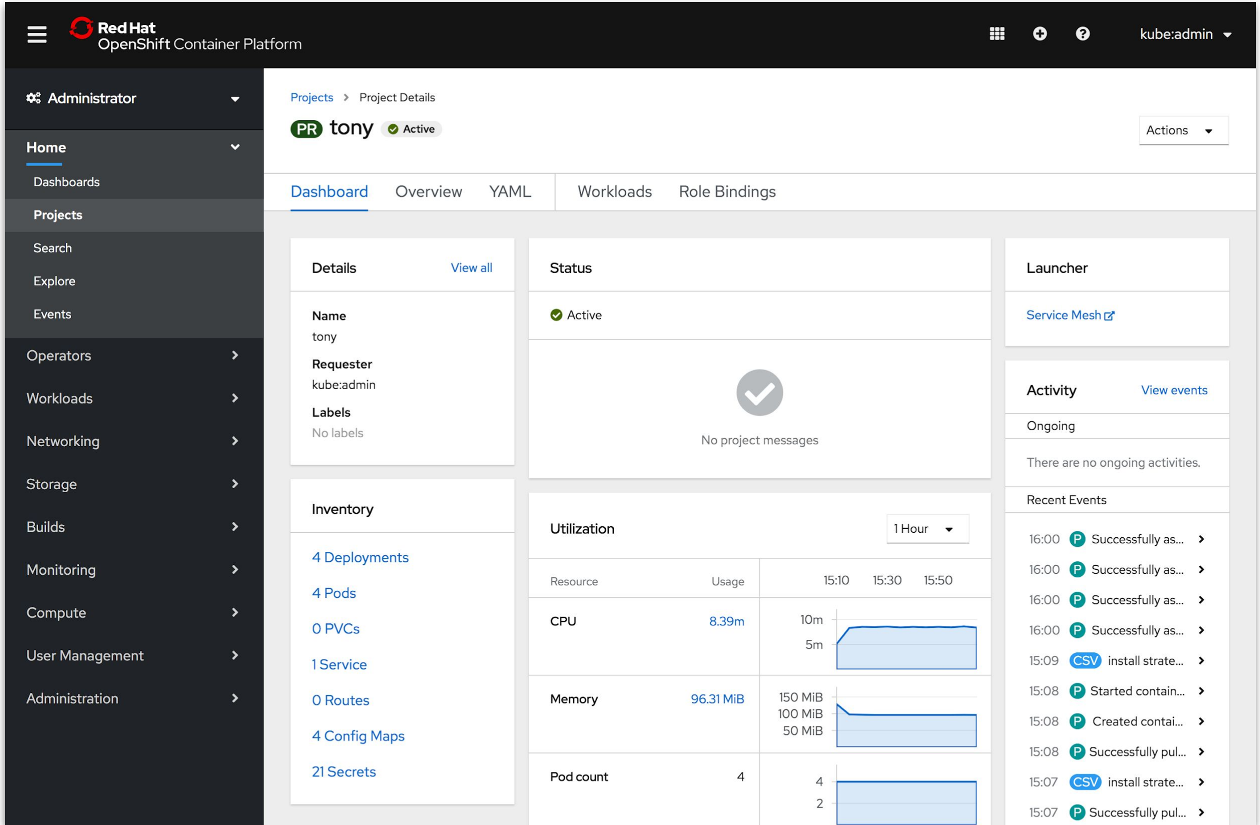
Extending the Console	**Improve Observability**
Administration made easy	**Developer Focused**

Enhanced Visibility with the New Project Dashboard

Project-scope Dashboard gives Developer Clear Insights

Drill down in context from the new project dashboard widgets:

- Project Details
- Project Status/Health
- Project External Links (Launcher)
- Project Inventory
- Project Utilization
- Project Resource Quota
- Project Activity (Top consumers)



Red Hat OpenShift Container Platform

kube:admin

Administrator

Home
Dashboards
Projects
Search
Explore
Events
Operators
Workloads
Networking
Storage
Builds
Monitoring
Compute
User Management
Administration

Projects > Project Details

PR tony Active

Actions

Dashboard Overview YAML Workloads Role Bindings

Details View all

Name
tony
Requester
kube:admin
Labels
No labels

Status

Active

No project messages

Launcher

Service Mesh

Activity View events

Ongoing

There are no ongoing activities.

Recent Events

16:00 P Successfully as...
16:00 P Successfully as...
16:00 P Successfully as...
16:00 P Successfully as...
15:09 CSV install strate...
15:08 P Started contain...
15:08 P Created contai...
15:08 P Successfully pul...
15:07 CSV install strate...
15:07 P Successfully pul...

Inventory

4 Deployments
4 Pods
0 PVCs
1 Service
0 Routes
4 Config Maps
21 Secrets

Utilization 1 Hour

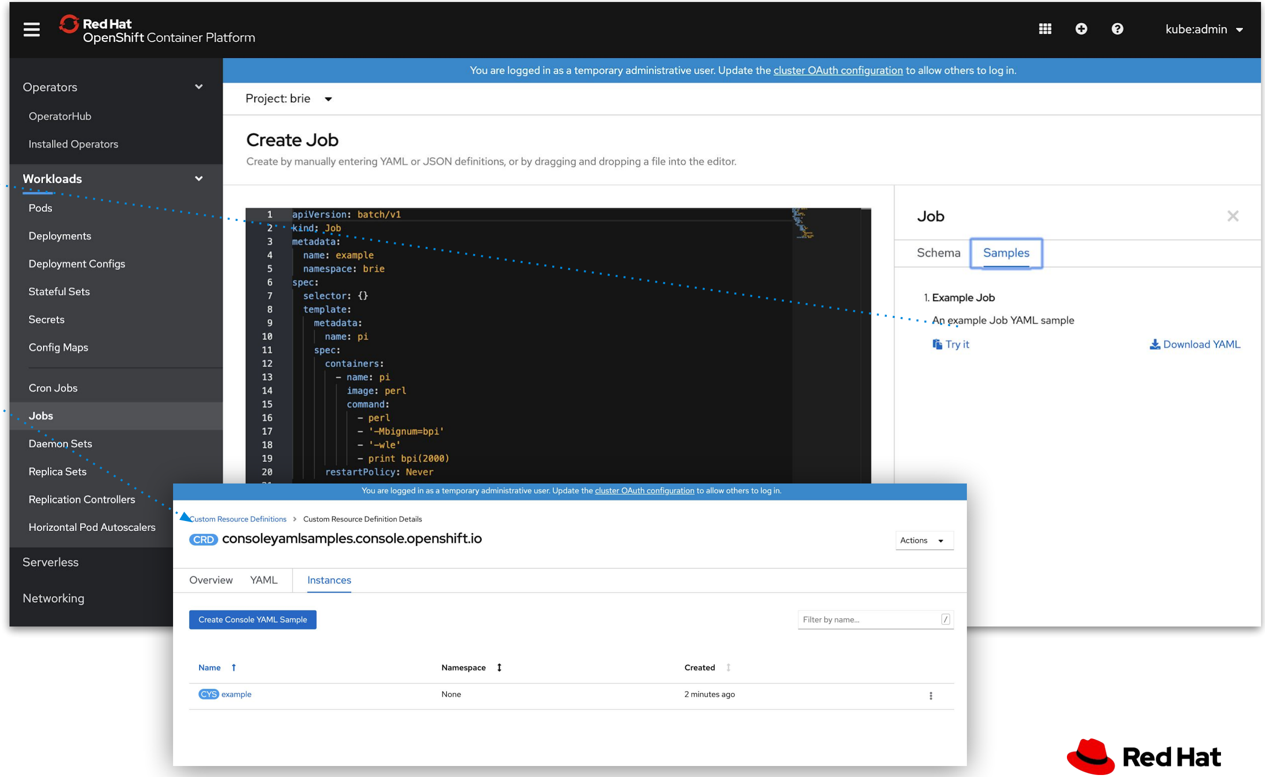
Resource Usage
CPU 8.39m
Memory 96.31 MiB
Pod count 4

Product Manager: Ali Mobrem

Add YAML Samples for a specific resource

Educate your Users with an Easy Way to Understand Kubernetes Resources

- You can now add cluster-wide samples to any Kube Resource with ***ConsoleYAMLSamples CRD***.
- Each team that manages kube resources owns their samples and should make it part of their Operator.
- Any Operators can add YAML samples including Third-Party ISVs



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Create Job

Create by manually entering YAML or JSON definitions, or by dragging and dropping a file into the editor.

```
apiVersion: batch/v1
kind: Job
metadata:
  name: example
  namespace: brie
spec:
  selector: {}
  template:
    metadata:
      name: pi
    spec:
      containers:
        - name: pi
          image: perl
          command:
            - perl
            - '-Mbignum=bpi'
            - '-wle'
            - print bpi(2000)
      restartPolicy: Never
```

1. Example Job

An example Job YAML sample

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

consoleyamlsamples.console.openshift.io

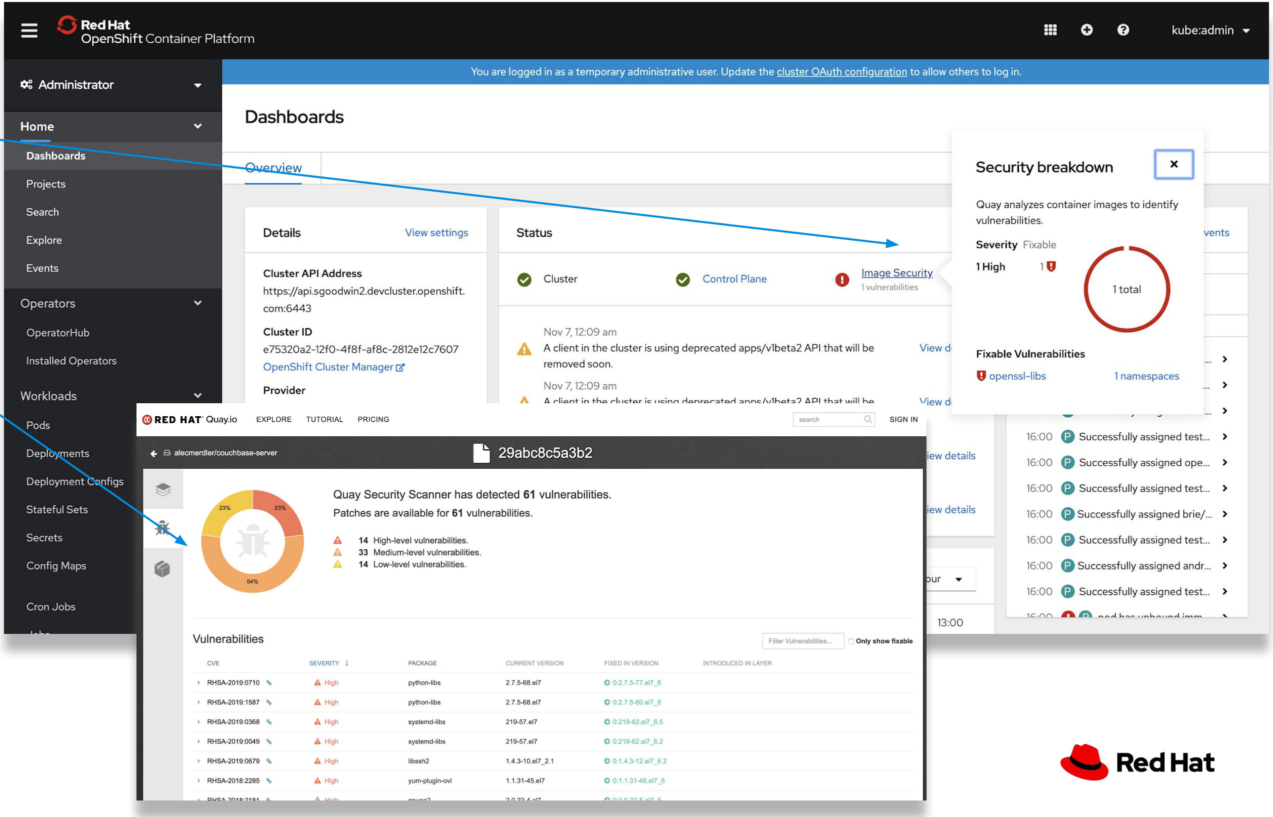
Name	Namespace	Created
CYS example	None	2 minutes ago

Red Hat

View Security Vulnerabilities with the Quay Operator

See all your Container Vulnerabilities right from the Console Dashboard

- Link out to **Red Hat Quay** for more in depth information
- The Quay Operator supports both **On-premise and External** Quay Registries
- Currently uses **Clair for Security Scan**; Planning to expand to other Vendors(TwistLock, Aqua, e.g.)
- *Only works for images managed by Quay*



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Dashboards

Overview

Details — View settings

Cluster API Address
https://api.sgoodwin2.devcluster.openshift.com:6443

Cluster ID
e75320a2-12f0-4f8f-af8c-2812e12c7607
OpenShift Cluster Manager

Provider

Status

Cluster — Control Plane — Image Security (1 vulnerabilities)

Nov 7, 12:09 am
A client in the cluster is using deprecated apps/v1beta2 API that will be removed soon.

Nov 7, 12:09 am
A client in the cluster is using deprecated apps/v1beta2 API that will be

Security breakdown

Quay analyzes container images to identify vulnerabilities.

Severity Fixable
1 High 1

1 total

Fixable Vulnerabilities
openssl-libs — 1 namespaces

16:00 Successfully assigned test...
16:00 Successfully assigned ope...
16:00 Successfully assigned test...
16:00 Successfully assigned brie/...
16:00 Successfully assigned test...
16:00 Successfully assigned andr...
16:00 Successfully assigned test...

Quay Security Scanner has detected **61** vulnerabilities.
Patches are available for **61** vulnerabilities.

14 High-level vulnerabilities.
33 Medium-level vulnerabilities.
14 Low-level vulnerabilities.

Vulnerabilities

Filter Vulnerabilities... □ Only show fixable

CVE	SEVERITY	PACKAGE	CURRENT VERSION	FIXED IN VERSION	INTRODUCED IN LAYER
RHSA-2019:0710	High	python-libs	2.7.5-68.el7	0:2.7.5-77.el7_6	
RHSA-2019:1587	High	python-libs	2.7.5-68.el7	0:2.7.5-80.el7_6	
RHSA-2019:0368	High	systemd-libs	219-57.el7	0:219-62.el7_6.5	
RHSA-2019:0049	High	systemd-libs	219-57.el7	0:219-62.el7_6.2	
RHSA-2019:0679	High	libssh2	1.4.3-10.el7_2.1	0:1.4.3-12.el7_6.2	
RHSA-2018:2285	High	yum-plugin-ovl	1.1.31-45.el7	0:1.1.31-46.el7_5	

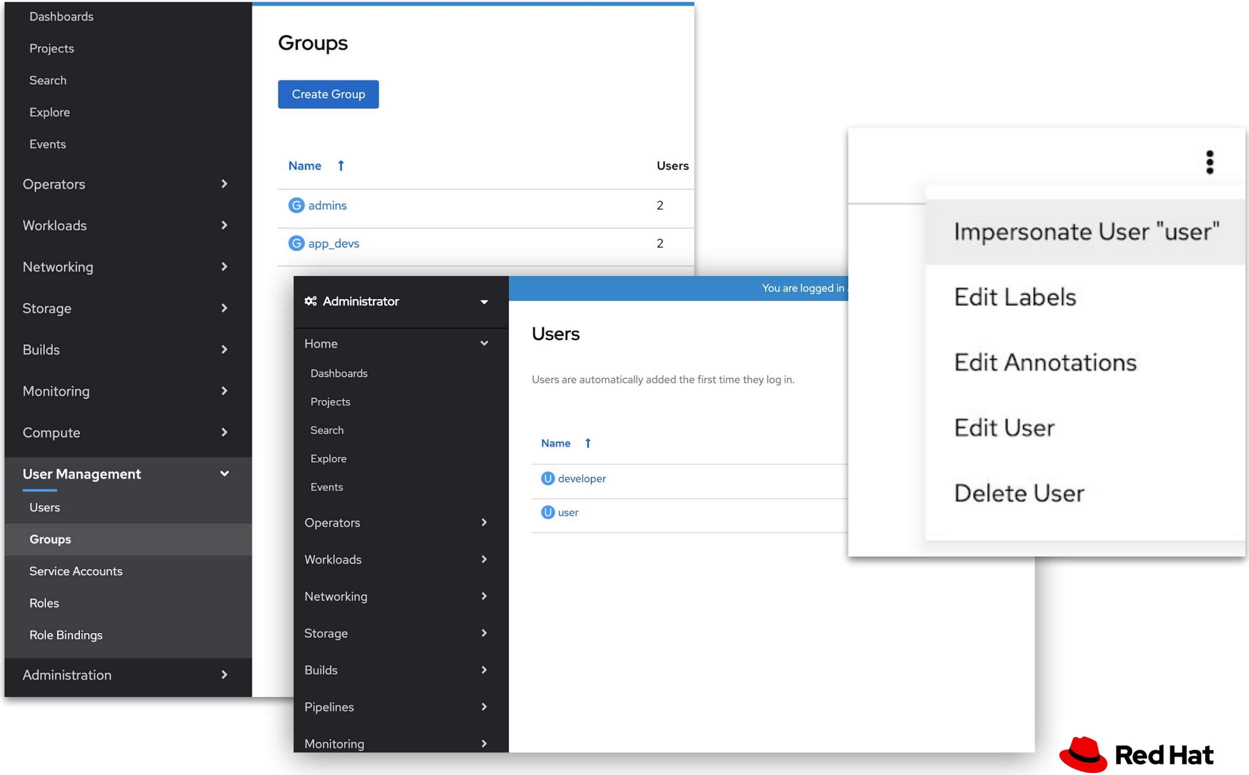
Product Manager: Ali Mobrem

Red Hat

New User Management Section with the Console

Allow cluster admins to easily see who has access to the cluster and how they are organized

1. **All user management** resources under **one navigation section**
2. **Dedicated pages** to view **Users** and **Groups** for the cluster have been added
3. Ability to **impersonate a user;** view exactly what they can see



Groups

Name ↑	Users
G admins	2
G app_devs	2

Users

Users are automatically added the first time they log in.

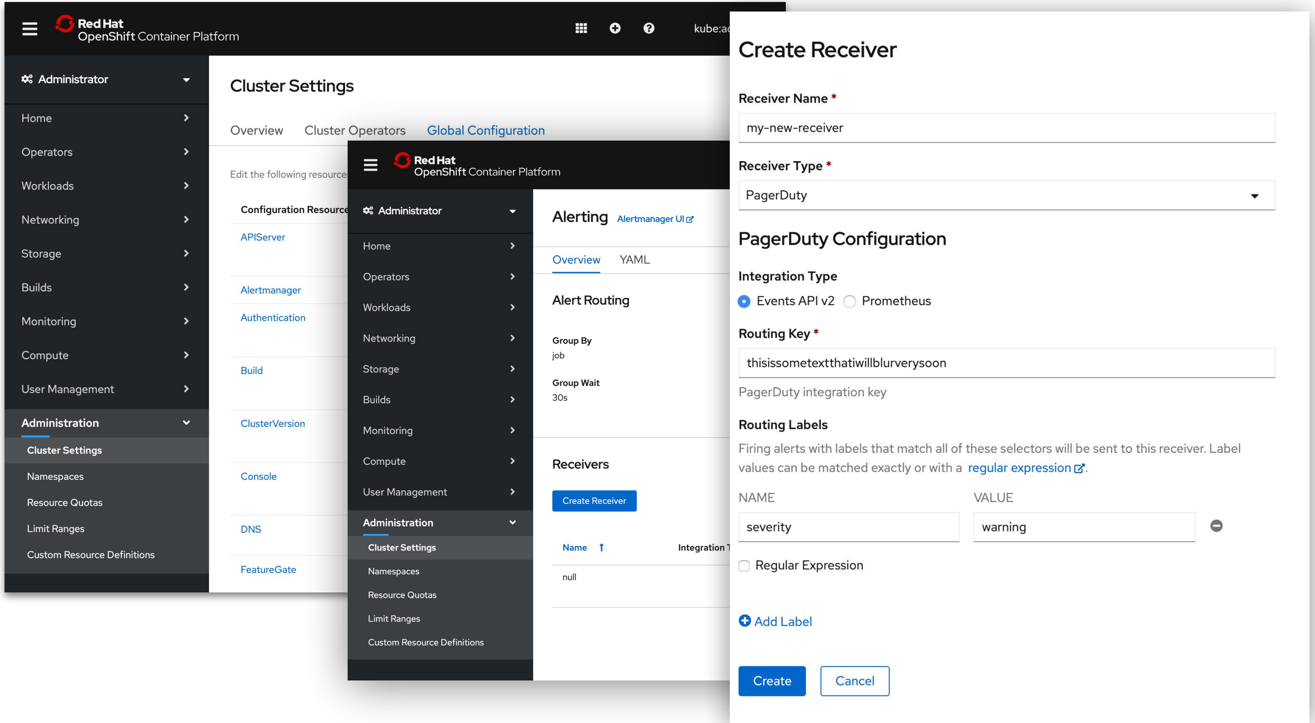
Name ↑
U developer
U user

Product Manager: Ali Mobrem

Be Informed with the Alert Receivers

Alerts are only useful if you know about them!

- **Reduce** your **Mean Time To Resolution** (MTTR)
- Create alerts receivers for:
  - **Pager Duty**
  - **Webhooks**
- **More receivers** to come in **future** releases
- Send alerts to the teams that need them; **Reduce the noise** for teams that don't
- Default receiver in place as a **catch all**



Alert Routing

Group By
job

Group Wait
30s

Create Receiver

Receiver Name *
my-new-receiver

Receiver Type *
PagerDuty

PagerDuty Configuration

Integration Type
● Events API v2 ○ Prometheus

Routing Key *
thisissometextthatiwillblurverysoon

PagerDuty integration key

Routing Labels

Firing alerts with labels that match all of these selectors will be sent to this receiver. Label values can be matched exactly or with a regular expression.

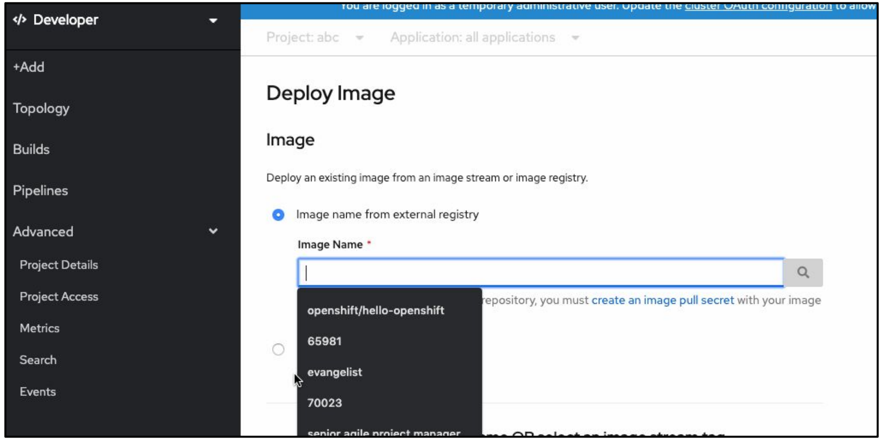
NAME	VALUE
severity	warning

□ Regular Expression

Deploy Applications streamlining flows

Deploy Image from Internal Registry

- Allow for rapidly deploying with alternate paths
- No need to repush/pull images



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow

Project: abc   Application: all applications

Deploy Image

Image

Deploy an existing image from an image stream or image registry.

● Image name from external registry

Image Name *

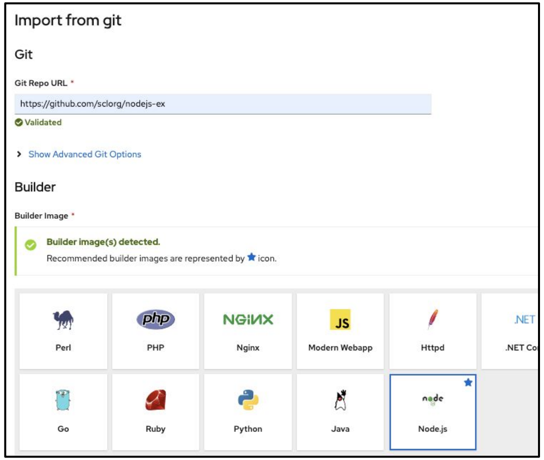
openshift/hello-openshift
65981
evangelist
70023
senior agile project manager

repository, you must create an image pull secret with your image

○ me OR select an image stream tag

Auto-detect builder image

- Recommends builder images based on detected language by git provider



Import from git

Git

Git Repo URL *

https://github.com/sclorg/nodejs-ex

✓ Validated

› Show Advanced Git Options

Builder

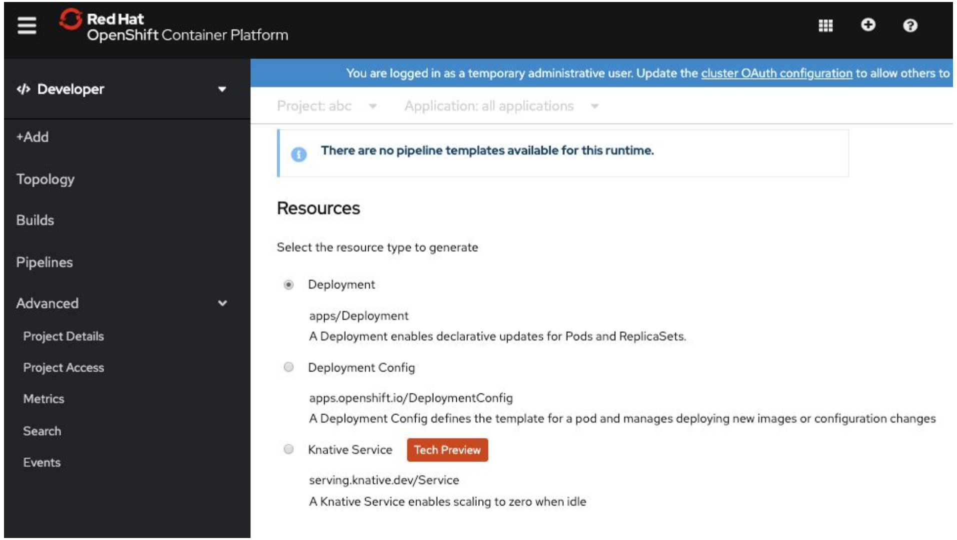
Builder Image *

Builder image(s) detected.

Recommended builder images are represented by ★ icon.

Deploy Applications alternate deployment targets

- Default to Kubernetes Deployments
- Alternately can use OpenShift's DeploymentConfigs or Knative Service (tech preview) objects
- Advanced options changes accordingly



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to

There are no pipeline templates available for this runtime.

Resources

Select the resource type to generate

● Deployment

apps/Deployment
A Deployment enables declarative updates for Pods and ReplicaSets.

○ Deployment Config

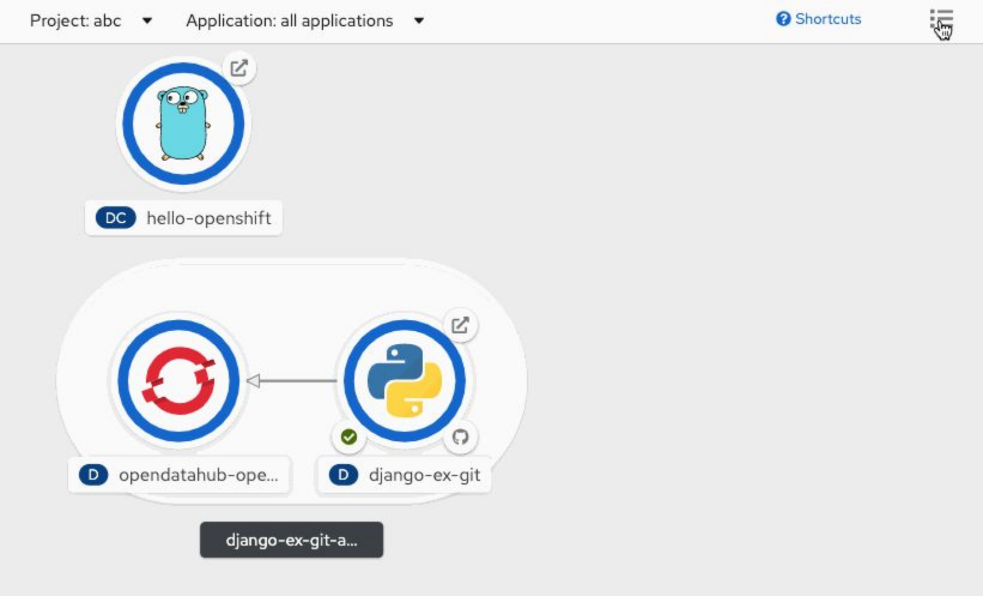
apps.openshift.io/DeploymentConfig
A Deployment Config defines the template for a pod and manages deploying new images or configuration changes

○ Knative Service Tech Preview

serving.knative.dev/Service
A Knative Service enables scaling to zero when idle

Application Topology streamlined flows

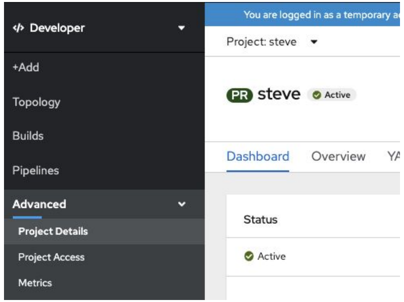
- Toggle between List and Topology views
- Easily group applications
- Connect/bind applications easily
- Contextual actions
- Quickly delete applications



Project Details & Access

Project Details

- Quick access to current project details
- View dashboard for status and resource utilization
- Actions for edit or delete



You are logged in as a temporary a

Project: steve

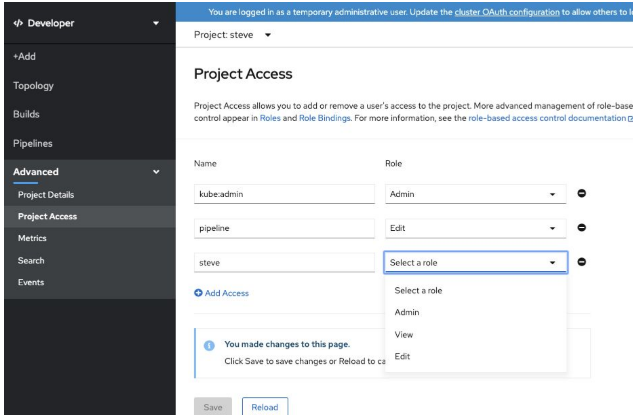
PR steve Active

Status

Active

Project Access

- Simplify sharing projects
- Reduces to a simple set of Roles that developers frequently use



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to l

Project: steve

Project Access

Project Access allows you to add or remove a user's access to the project. More advanced management of role-base control appear in Roles and Role Bindings. For more information, see the role-based access control documentation

Name	Role
kube:admin	Admin
pipeline	Edit
steve	Select a role

You made changes to this page.

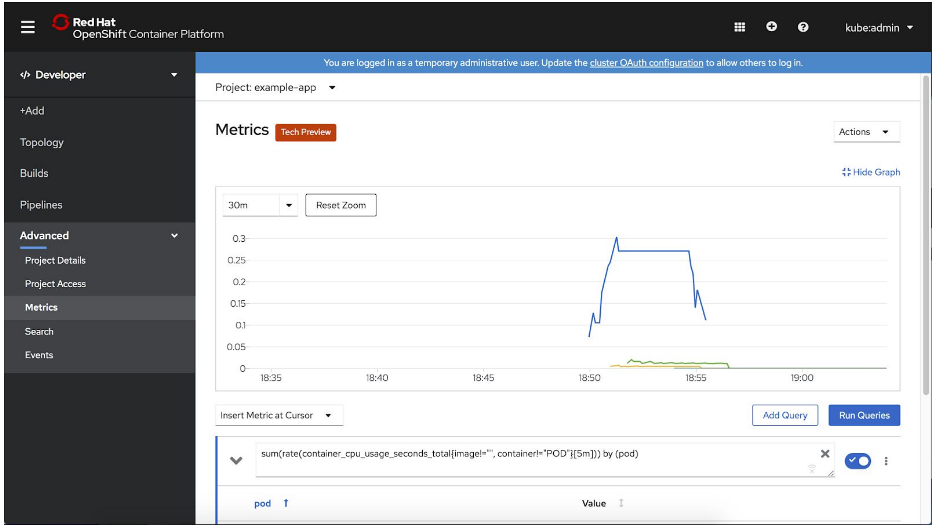
Click Save to save changes or Reload to ca

Tech Preview

Metrics

Quick access to key application metrics

- Use of Prometheus Query Language
- Easily build up queries and plot to visualize application and component trends



You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

Project: example-app

```
sum(rate(container_cpu_usage_seconds_total{image!="", container!="POD"}[5m])) by (pod)
```

Product Manager: Steve Speicher

Roadmap

OPENSHIFT ROADMAP

	Q3 CY2019 OpenShift 4.2	Q1 CY2020 OpenShift 4.3	CY2020 OpenShift 4.4+
DEV	• Developer Console GA • OpenShift Serverless (Knative) - TP • OpenShift Pipelines (Tekton) DP3 • CodeReady Containers GA • Developer CLI (odo) GA	• OpenShift Pipelines (Tekton) TP • Helm 3 TP	• OpenShift Serverless (Knative) GA • Guided application creation • OpenShift Pipelines (Tekton) GA • Helm 3 GA
APP	• OperatorHub Enhancements • Operator Deployment Field Forms • Application Migration Console	• Metering for Services • Windows Containers (Planned) • GPU Metering • Application Operator Binding - DP	• Monitor application workloads • Simplify OLM interactions • Improving native developer console for monitoring and troubleshooting
PLATFORM	• Kubernetes 1.14 w/ CRI-O runtime • Disconnected Install and Update • Automated Installer for Azure, GCP, & OSP • Pre-existing Infra Installer for GCP • Cluster-wide Egress Proxy • OVN Tech Preview • OpenShift Container Storage 4.2 (1 month after)	• Kubernetes 1.16 w/ CRI-O runtime • Private/Internal Clusters support from the installer • Deploy to pre-existing VPC & Subnets • FIPS • Pre-existing Infra Installer for Azure (4.3.z) • OpenShift Container Storage 4.3	• OVN GA w/ Windows Networking Integration (Planned) • Windows Containers GA • Multi-cluster summary dashboards • Centralized cluster updates • Compliance operator • Node problem detector • IPv6 (single/dual on control plane) • HTTP/2 Support • CSI certification suite

OPENSHIFT ROADMAP

Q3 CY2019
OpenShift 4.2

DEV

- Developer Console GA
- OpenShift Serverless (Knative) - TP
- OpenShift Pipelines (Tekton) DP3
- CodeReady Containers GA
- Developer CLI (odo) GA

APP

- OperatorHub Enhancements
- Operator Deployment Field Forms
- Application Migration Console

PLATFORM

- Kubernetes 1.14 w/ CRI-O runtime
- Disconnected Install and Update
- Automated Installer for Azure, GCP, & OSP
- Pre-existing Infra Installer for GCP
- Cluster-wide Egress Proxy
- OVN Tech Preview
- OpenShift Container Storage 4.2 (1 month after)

HOSTED

- Insights Operator
- Azure Red Hat OpenShift new features (monitoring, logging)

Q1 CY2020
OpenShift 4.3

DEV

- OpenShift Pipelines (Tekton) TP
- Helm 3 TP

APP

- Metering for Services
- Windows Containers (Planned)
- GPU Metering
- Application Operator Binding - DP

PLATFORM

- Kubernetes 1.16 w/ CRI-O runtime
- Private/Internal Clusters support from the installer
- Deploy to pre-existing VPC & Subnets
- FIPS
- Pre-existing Infra Installer for Azure (4.3.z)
- OpenShift Container Storage 4.3

HOSTED

- Subscription Mgmt Improvements (cloud.redhat.com)
- Azure Red Hat OpenShift new features (private clusters)
- Azure Red Hat OpenShift preview of 4.x
- OSD on Google Cloud preview on 4.x

CY2020
OpenShift 4.4+

DEV

- OpenShift Serverless (Knative) GA
- Guided application creation
- OpenShift Pipelines (Tekton) GA
- Helm 3 GA

APP

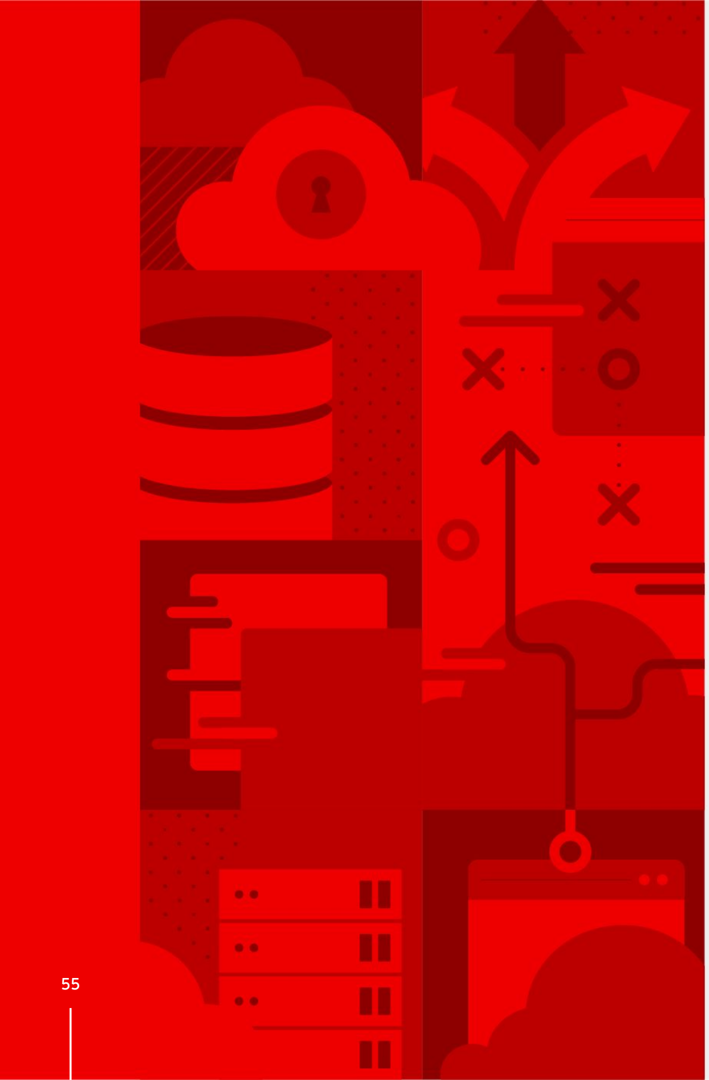
- Monitor application workloads
- Simplify OLM interactions
- Improving native developer console for monitoring and troubleshooting

PLATFORM

- OVN GA w/ Windows Networking Integration (Planned)
- Windows Containers GA
- Multi-cluster summary dashboards
- Centralized cluster updates
- Compliance operator
- Node problem detector
- IPv6 (single/dual on control plane)
- HTTP/2 Support
- CSI certification suite

HOSTED

- Enhanced consumption building
- Regulatory compliance
- Machine autoscaling
- Google cloud platform



Questions?

try.openshift.com

linkedin.com/company/red-hat

facebook.com/redhatinc

youtube.com/user/RedHatVideos

twitter.com/RedHat

Red Hat