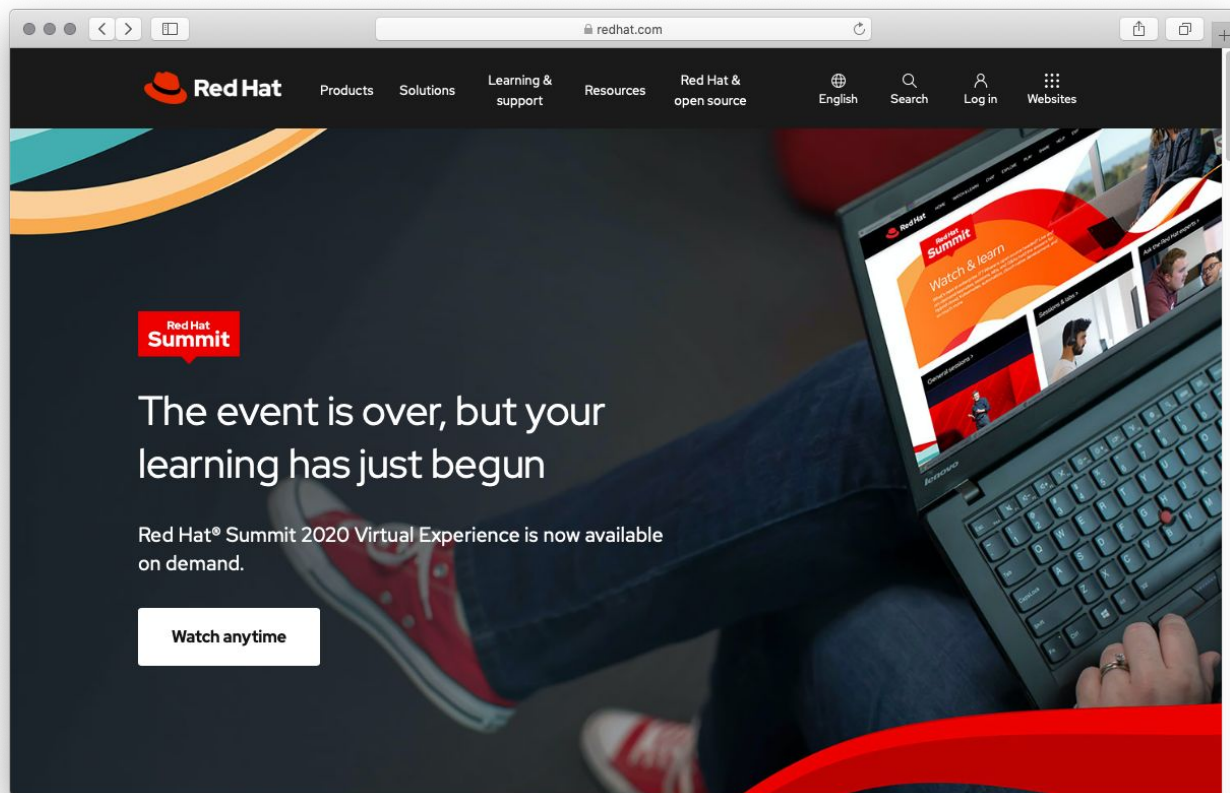




OpenShift What's New & Highlights vom RH Summit



OpenShift Security Guide

Free download

<https://access.redhat.com/articles/5059881>



The Red Hat Marketplace difference



Any cloud. On-prem. Anywhere OpenShift runs.

Build once, deploy to any environment with software that allows for workload portability across clouds.



Certified enterprise software

All software is certified for Red Hat OpenShift and uses Kubernetes operators for built-in management logic.



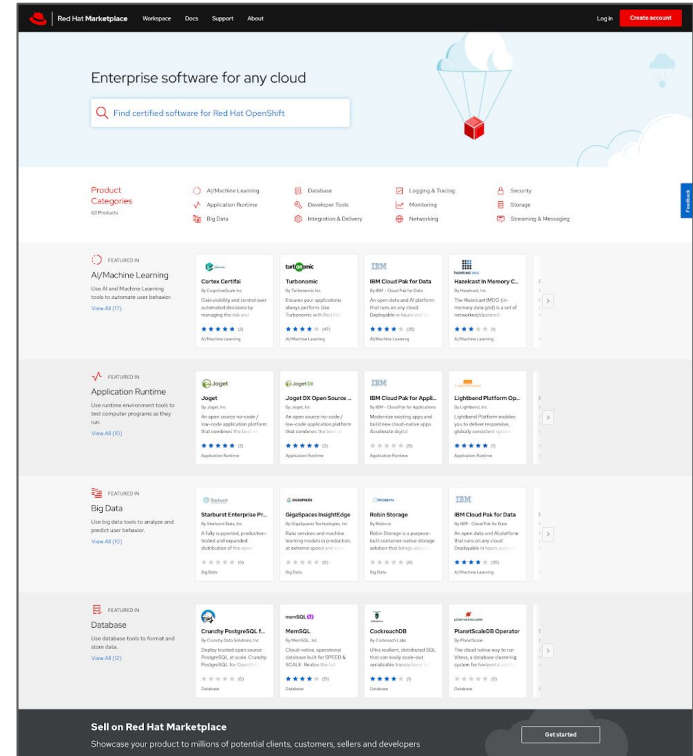
Continuous support

Central support portal offers a single point of entry for any software purchased in the marketplace.



Consolidated usage tracking & spend optimization

Pool spending across clouds. Monitor license usage, expiration, and renewals on a single dashboard.



Discover enterprise software

Red Hat Marketplace | Workspace | Docs | Support | About | Log in | Create account

Enterprise software for any cloud

Find certified software for Red Hat OpenShift

Product Categories
128 Products

- AI/Machine Learning
- Application Runtime
- Big Data
- Database
- Developer Tools
- Integration & Delivery
- Logging & Tracing
- Monitoring
- Networking
- Security
- Storage
- Streaming & Messaging

FEATURED IN

AI/Machine Learning

Use AI and Machine Learning tools to automate user behavior.

[View All \(23\)](#)

- Airflow** by Apache
Airflow Operator aims to make specifying and running Airflow applications as easy as running...
★★★★☆ (3)
AI / Machine Learning
- DataStax Enterprise** by DataStax
DataStax Enterprise (DSE) is the always-on, active everywhere, distributed hybrid...
★★★★★ (38)
AI / Machine Learning
- Elasticsearch** by Elasticsearch
Operator for Elasticsearch is a Kubernetes controller for managing Elasticsearch...
★★★★★ (4)
AI / Machine Learning
- PeerNova** by Peernova
PeerNova enables financial institutions around the world to securely and verifiably manage...
★★★★★ (42)
AI / Machine Learning

Application Runtime

Use runtime environment tools to test computer programs as they run.

[View All \(23\)](#)

- Aerospike** by Aerospike
Aerospike is an enterprise-grade, internet scale database for real-time, mission critical...
★★★★★ (11)
- Crunchy PostgreSQL** by Crunchy
PostgreSQL (pronounced "post-gress-Q-L") is an open source, ACID compliant...
★★★★★ (17)
- Sysdig Agent** by Sysdig
Sysdig Platform is the most powerful way to understand the data at the heart of your...
★★★★★ (24)
- Redis Enterprise** by Redis
Redis is an open source (BSD licensed), in-memory data structure store, used as a...
★★★★★ (72)



Learn about the software

Red Hat Marketplace

Workspace Docs Support About

Log in Create account

Crunchy PostgreSQL for Kubernetes

By [Crunchy Data Solutions, Inc](#)

Deploy trusted open source PostgreSQL at scale. Crunchy PostgreSQL for OpenShift Container Platform (OCP) includes Crunchy PostgreSQL Operator and Crunchy PostgreSQL Container Suite supporting hybrid cloud, open source PostgreSQL-as-a-Service.

Software Version: 4.2

Type: Operator

Rating: ★ ★ ★ ★ ★ No Reviews

Purchase

Free Trial

*Requires OpenShift to Install

Certified Enterprise Ready
[About Certification](#)

Certification Standards

- Runs on OpenShift
- Certified Operators
- Fully Containerized
- T1-T3 Support
- Vulnerability Scans

Capabilities Level

- Basic Install
- Seamless Upgrades
- Full Lifecycle
- Deep Insights
- Auto Pilot

Overview Documentation Pricing Help

Enables hybrid-cloud enterprise PostgreSQL-as-a-Service on OpenShift Container Platform (OCP). Crunchy PostgreSQL for OCP provides the essential features required to manage an enterprise PostgreSQL environment, including: - Provisioning - High-availability - Monitoring - Advanced Authentication and Authorization control

data is always

QL backup and

teria Evaluation

High-Availability PostgreSQL On Kubernetes

Jonathan S. Katz - Director of Cloud Engineering & Growth - March 2020

Feedback

Review description and pricing, read technical documentation, and view ratings.

Try or buy

The screenshot shows the Red Hat Marketplace interface for purchasing Cortex Certifai. The top navigation bar includes the Red Hat logo and links for Marketplace, Workspace, Docs, Support, and About. Below the navigation bar, the breadcrumb trail reads 'Marketplace / Cortex Certifai / Purchase'.

The main section is titled 'Select your edition' and displays four product cards:

- Cortex Certifai Enterprise Trial**: Starting at **Free** for 30 days. Description: Cortex Certifai empowers enterprises to identify and mitigate risk and vulnerabilities within AI and deploy trusted AI systems into production.
- Cortex Certifai Silver Edition**: Starting at **\$8,800** per instance per month. Description: Cortex Certifai empowers enterprises to identify and mitigate risk and vulnerabilities within AI and deploy trusted AI systems into production.
- Cortex Certifai Gold Edition**: Starting at **\$22,000** per instance per month. Description: Cortex Certifai empowers enterprises to identify and mitigate risk and vulnerabilities within AI and deploy trusted AI systems into production.
- Cortex Certifai Platinum Edition**: Starting at **\$52,000** per instance per month. Description: Cortex Certifai empowers enterprises to identify and mitigate risk and vulnerabilities within AI and deploy trusted AI systems into production.

Below the product cards is the 'Configure your edition' section for the 'Cortex Certifai Silver Edition'. It includes a field to 'Enter the number of instances*' with a value of 1, a note 'Please select from 1 - 1', and a 'Unit price: \$8,800.00 USD per instance'. A 'Subscription term*' dropdown is set to '1 Month', with a note 'Subscription is automatically renewed'.

On the right side, the 'Purchase summary' section shows the details for the 'Cortex Certifai Silver Edition':

- 1 Cortex Certifai Silver Edition
- Cost: **\$8,800.00 USD**
- Billing: Monthly
- Subscription term: 1 Month
- Payment method: ****7538 **VISA**

The 'Charges (Monthly)' section shows:

- Subtotal: **\$8,800.00 USD**
- Estimated tax: --
- Total: \$8,800.00 USD**


Below the charges, a note states: 'By submitting your order, you agree to the [Terms and Conditions](#) for this product.' A blue 'Purchase' button is present, followed by the text 'Operated by **IBM**'.


A vertical 'Feedback' button is located on the right edge of the purchase summary panel.

Browse products editions
to understand which
version is right for your
application.



Purchase options

MarketplaceWorkspaceSupportAbout

 **Sysdig Agent**

Marketplace / Sysdig Agent

Select Your Edition

Free Trial
Starting at
\$0
30 Days

Free 30-day trial. Works with any of your cloud technology or infrastructure. Trial support is included through the Stack Overflow forum.

Standard
Starting at
\$42
Monthly per VPC

The starting point; ideal for dealing with slow transactions, capacity issues and outages. Edition 01 includes upgrade support features.

Enterprise
Starting at
\$10K
1x charge

A complete solution for DevOps full visibility and control over your applications and infrastructure. Includes white-glove support features.

Configure Your Edition

Sysdig Agent Standard Edition

Number of virtual processor cores*
4
Please select from 1-100
Unit price: \$249.00 USD per average managed virtual server

Number of servers*
2
Please select from 1-100

Billing frequency*
Monthly

Purchase term*
6 Months

Registration Information
brian@email.com

Email Verification

Payment Method
Please enter your credit card or invoicing information. You will not be charged during a trial period.

Credit CardPurchase Order

Customer Number*
76290

Purchase Order Number*
1257

Next

Billing Information

IBM will not use my contact information unless I decide to change my preferences in my user profile.
I acknowledge that I have read and understand the [IBM Policy Statement](#).
☒ I accept the [IBM Terms & Conditions](#).

Buy software using a credit card or purchase order.

8

Integrated into Red Hat OpenShift

RED HAT+IBM CONFIDENTIAL. For internal use only.

Project: default

OperatorHub

Discover Operators from the Kubernetes community and Red Hat partners, curated by Red Hat. You can purchase commercial software through [Red Hat Marketplace](#). You can install Operators on your clusters to provide optional add-ons and shared services to your developers. After installation, the Operator capabilities will appear in the [Developer Catalog](#) providing a self-service experience.

All Items 33 items

Filter by keyword...

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 Type

- ☐ Red Hat (30)
- ☐ Certified (90)
- ☐ Community (90)
- ☒ Marketplace (33)

Provider

- ☐ Red Hat (58)

Marketplace

akka

Akka Cluster Operator
provided by Lightbend, Inc.

Run Akka Cluster applications on Kubernetes.

Marketplace

Apprinx APS Operator
provided by Apprinx, Inc.

The Apprinx operator enables you to back up and restore your OpenShift cluster resources and...

Marketplace

Aqua Security Operator
provided by Aqua Security, Inc.

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

Marketplace

citrix

Citrix ADC CPX with Ingress Controller
provided by Citrix

Citrix ADC CPX is a container-based application delivery controller that can be provisione...

Marketplace

crunchy

Crunchy PostgreSQL for OpenShift
provided by Crunchy Data

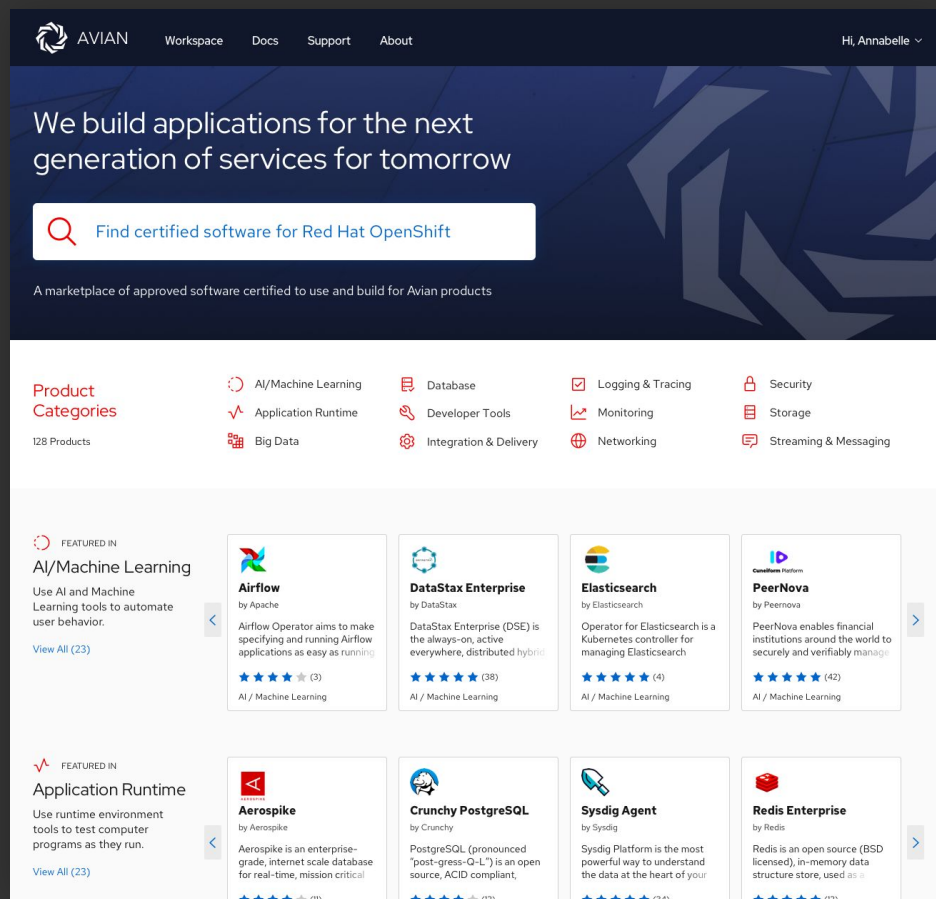
Enterprise open source PostgreSQL-as-a-Service

Marketplace

Enterprise open source PostgreSQL-as-a-Service

Discover the marketplace
inventory in OpenShift
Embedded OperatorHub

Coming soon: A private marketplace experience



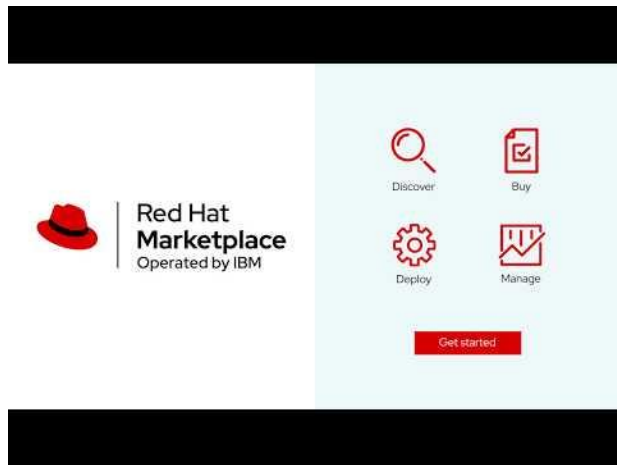
Innovate faster with a
preapproved,
personalized
marketplace.

Reduce administrative
burden with delegated
authority and
preapproved spend or
license usage for projects
and teams.



Introducing Red Hat Marketplace, Operated by IBM

A simpler way to buy and manage enterprise software, with automated deployment to any cloud.



<https://www.youtube.com/watch?v=Qt6pcYi3ABQ>

Introducing!

Red Hat Advanced Cluster Management for Kubernetes

Robust, Proven, Award Winning



**Multicluster Lifecycle
Management**



**Policy Driven
Governance Risk and
Compliance**



**Advanced Application
Lifecycle Management**

Multi-Cluster Lifecycle Management

Creating & Importing Clusters



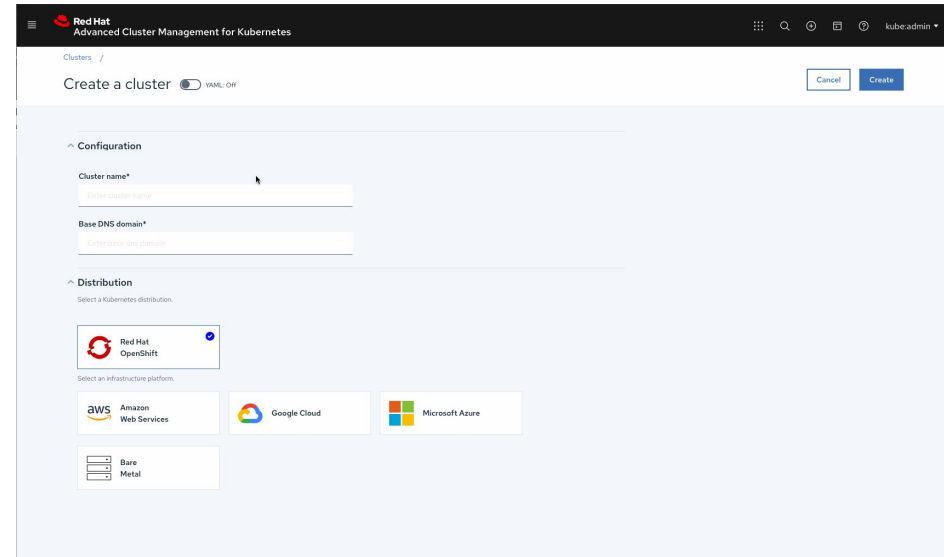
Enterprise Architect



SRE/DevOps



- **Create, Upgrade** and **Destroy** OCP clusters..
- Leverage [Hive IPI for OCP cluster deployment](#)
- Wizard or YAML based create cluster flow
- Launch to an OCP Console from ACM
- Access cluster login credentials and download kubeadmin configuration



Policy based Governance, Risk and Compliance

Don't wait for your security team to tap you on the shoulder



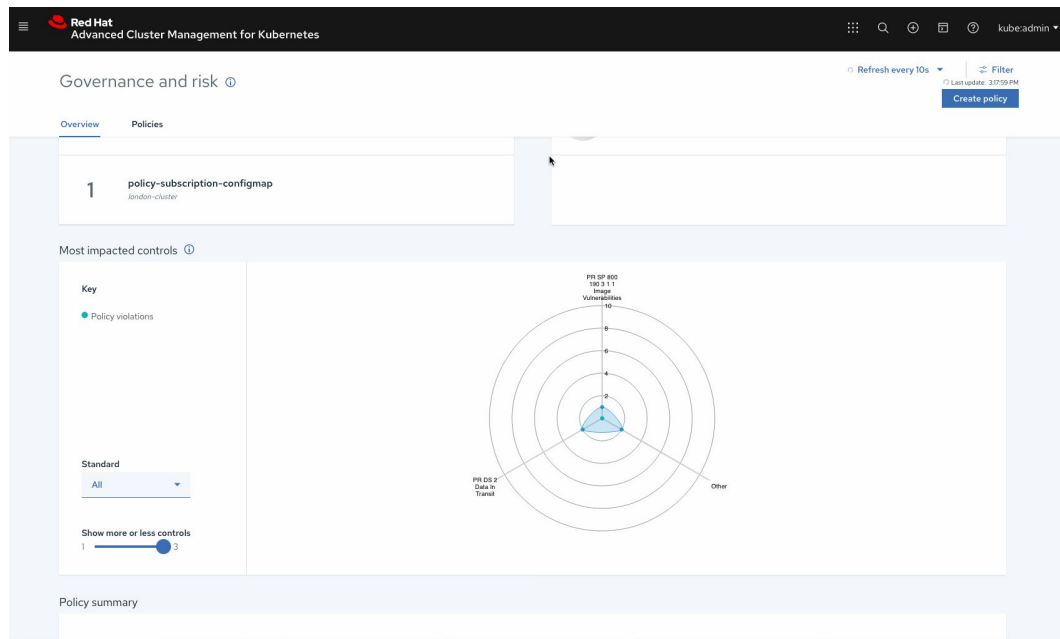
SecOps



CTO/CIO



- Set and enforce policies for security, applications, & infrastructure
- Deep visibility for auditing configuration of apps and clusters
- Unique policy capabilities around CIS compliance
- Categorize violations based on your standards for immediate visibility into your compliance posture



Advanced Application Lifecycle Management

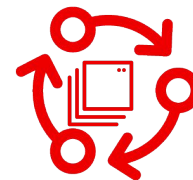
Simplify your Application Lifecycle



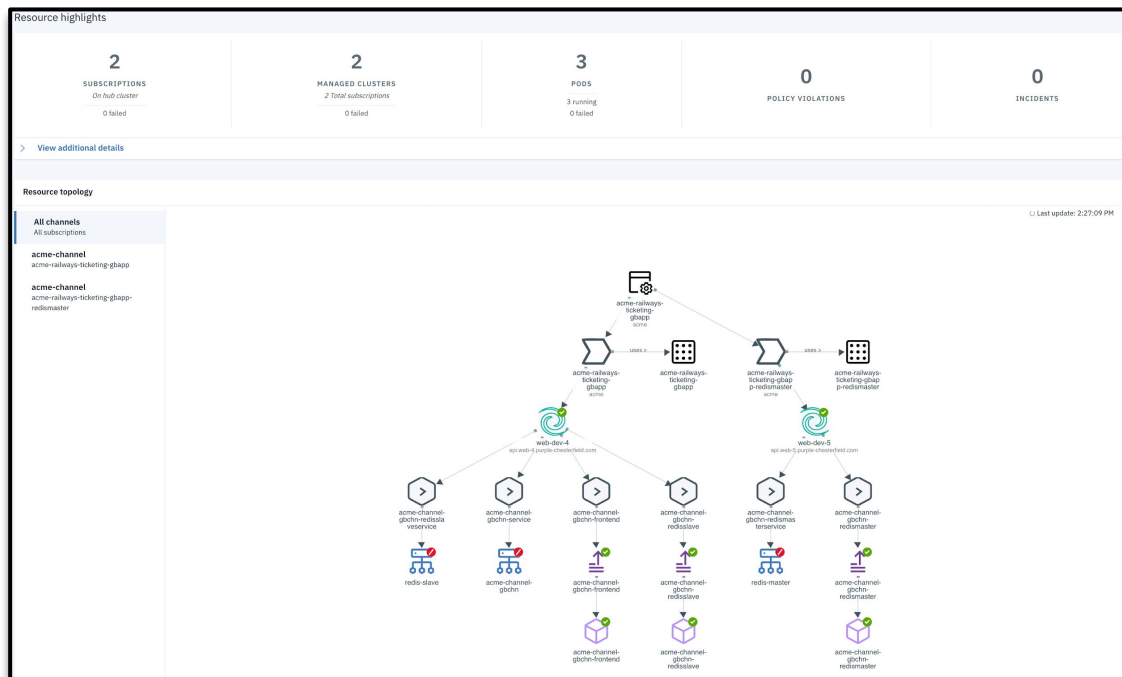
SRE/DevOps



Enterprise Architect



- Deploy Applications at Scale
- Deploy Applications from Multiple Sources and Clusters
- Quickly Visualize Application Relationships
- Using the subscription & channel model, the latest application revisions are delivered to appropriate clusters, automatically.



OpenShift Container Platform

**Advanced
Cluster
Management**

Multi-cluster Management

Discovery : Policy : Compliance : Configuration : Workloads

**OpenShift
Container
Platform**

Manage Workloads

Platform Services

Service Mesh : Serverless
Builds : CI/CD Pipelines
Full Stack Logging
Chargeback

Build Cloud-Native Apps

Application Services

Databases : Languages
Runtimes : Integration
Business Automation
100+ ISV Services

Developer Productivity

Developer Services

Developer CLI : VS Code
extensions : IDE Plugins
Code Ready Workspaces
CodeReady Containers

Cluster Services

Automated Ops : Over-The-Air Updates : Monitoring : Registry : Networking : Router : KubeVirt : OLM : Helm

Kubernetes

Red Hat Enterprise Linux & RHEL CoreOS



Edge



Physical



Virtual



Private cloud



Public cloud



Managed cloud
(Azure, AWS, IBM, Red Hat)



Red Hat

OpenShift Container Platform

**Advanced
Cluster
Management**

Multi-cluster Management

Discovery : Policy : Compliance : Configuration : Workloads

**OpenShift
Container
Platform**

Manage Workloads

Platform Services

Service Mesh : Serverless
Builds : CI/CD Pipelines
Full Stack Logging
Chargeback

Build Cloud-Native Apps

Application Services

Databases : Languages
Runtimes : Integration
Business Automation
100+ ISV Services

Developer Productivity

Developer Services

Developer CLI : VS Code
extensions : IDE Plugins
Code Ready Workspaces
CodeReady Containers

Cluster Services

Automated Ops : Over-The-Air Updates : Monitoring : Registry : Networking : Router : KubeVirt : OLM : Helm

Kubernetes

Red Hat Enterprise Linux & RHEL CoreOS



Edge



Physical



Virtual



Private cloud



Public cloud



Managed cloud
(Azure, AWS, IBM, Red Hat)



Edge Tiers

SCALE
↑



Device or
Sensor

↓
FOOTPRINT

Red Hat's focus

"last mile"

Device
Edge



Edge
Server/Gateway

End-User
Premises
Edge



Infrastructure
Edge



Provider
Far
Edge



Provider
Access
Edge



Provider
Aggregation
Edge



Regional
Data Center



Core
Data Center

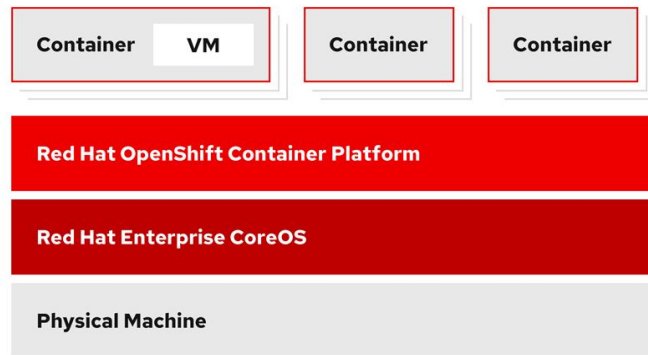
Provider/Enterprise Core

* Edge computing == Fog computing (there is no real difference other than marketing)

OpenShift virtualization

What's new in OpenShift virtualization (CNV) 2.3

- Windows Server Virtualization Validation Program (SVVP)
 - Windows Server 2019, 2016, 2012 R2
- Improved VM administration
 - More streamlined installation experience
 - Configure VM disk boot order
 - Improved validation of VM creation from templates
 - Easier to configure dedicated VM resources
 - Protect user VMs and data upon operator deletion
- Networking
 - Support for OVN-Kubernetes
 - Management of host VLAN interfaces
 - Improved serviceability of kubernetes-nmstate
- Storage
 - Managed local storage solution

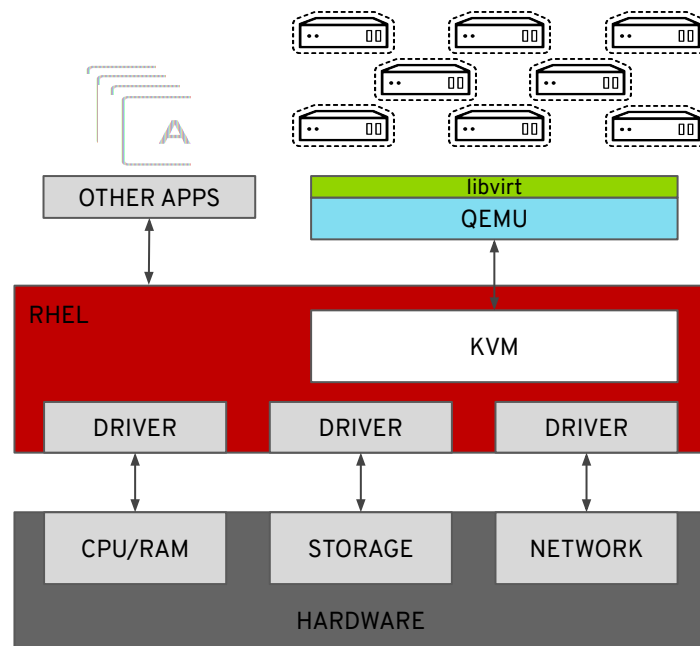


Tech Preview

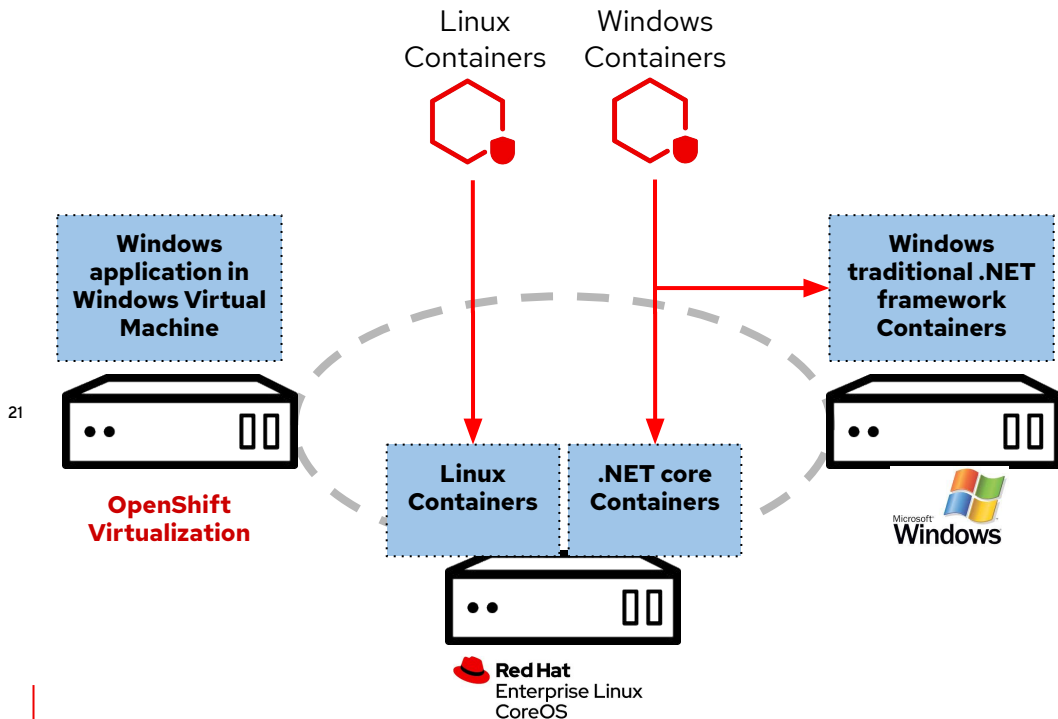


KVM-based (containerized) VMs

- KVM is a part of the Red Hat Enterprise Linux kernel
- QEMU uses KVM to execute virtual machines
- `libvirt` provides a management abstraction layer
- Red Hat Virtualization, Red Hat OpenStack Platform, and OpenShift virtualization all leverage KVM, QEMU, and `libvirt`



Mixed Windows and Linux Workloads



- Run Linux containers on RHEL
- Run .NET core containers on RHEL
- Run traditional **.NET framework containers on Windows**
- Run **Windows VMs with CNV** (Container Native Virtualization)
- All scheduled and managed by OpenShift

The screenshot shows the Red Hat OpenShift Container Platform web console. The left sidebar contains navigation links: Developer, Add, Topology (selected), Monitoring, Builds, and More. The main content area is titled 'Topology' and displays a message: 'No workspace found. To add content to your project, create an application, component or service using one of these options.' Below this message are six cards representing different deployment methods: 'From Git' (Import code from your git repository to be built and deployed), 'Container Image' (Deploy an existing image from an image registry or image stream tag), 'From Catalog' (Browse the catalog to discover, deploy and connect to services), 'From Dockerfile' (Import your Dockerfile from your git repo to be built & deployed), 'YAML' (Import a YAML file from your git repo to be built & deployed), and 'Database' (Deploy a database from an image stream tag).

OpenShift 4.4

NEW INSTALLER PLATFORMS



RHV IPI

Azure & OpenStack UPI

DNS forwarding

Kubernetes 1.17

CLOUD-NATIVE DEV TOOLS



OpenShift Serverless is GA

Helm 3 support is GA

OpenShift Pipelines is TP

Developer Console gains
monitoring & Helm features

STORAGE AUTOMATION



CSI topology support

CSI Volume snapshot,
restore, clone (Tech Preview)
iSCSI PVs for internal registry
Auto image pruning in registry

What's new in Middleware for OpenShift



Red Hat Runtimes

Red Hat build of Quarkus -

production support for Quarkus on OpenShift for Kube-native Java

Red Hat build of Jaeger - production support for Jaeger on OpenShift for improved Application Observability

Operators for JBoss EAP, Red Hat Data Grid, Red Hat SSO for better management of Runtimes capabilities



Red Hat Integration

Change Data Capture based on Debezium - stream database change events to Kafka-based applications.

OpenShift Serverless support for Camel-K and Strimzi with Knative Eventing (TP).

Red Hat Managed Integration limited availability release support extended to OpenShift Dedicated 4.



Red Hat Process Automation

Kogito moves to developer preview for next-gen business automation based on Quarkus.

OpenShift 4.x updates on Automation tooling developer preview of VSCode extension for developers.

OptaPlanner support for Spring Boot broadens reach to Spring developers running on OpenShift.

Service Mesh



OpenShift Service Mesh

Istio Enhancements in Detail

- Streamlined mutual TLS setup
- Improved troubleshooting with **istioctl analyze**
- Mirroring a percentage of traffic
- Automatic rotation of expired root certificates managed by Citadel
- Authorization Policy graduating to **beta**
- Adoption of OpenAPI v3 schemas for Istio CRDs
- More efficient Regular Expression handling for header checks



OpenShift Service Mesh


Introduction of supported disconnected installations

- Offline installation of Service Mesh is now possible without unsupported workarounds
- Using the layered product functionality & OLM we will be releasing this in Service Mesh v1.1.1 (weeks away!)
- Users achieve this via standardized tooling: (`"oc adm catalog build"/"oc adm catalog mirror"`)

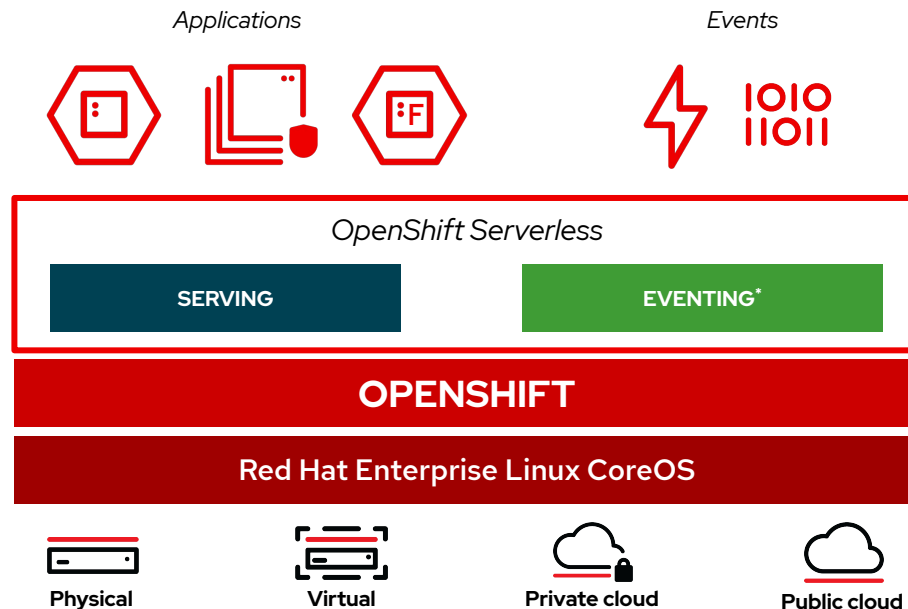


OpenShift Serverless

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

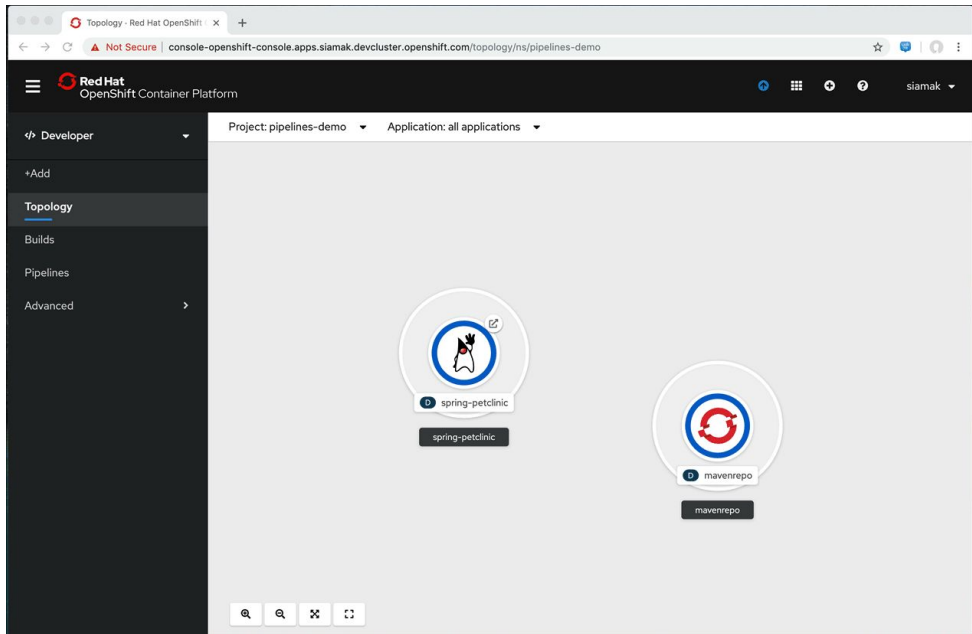
[Product briefing deck](#)





OpenShift Pipelines

- OpenShift Pipelines 1.0 Tech Preview
- Authoring pipelines with Pipeline builder
- Share data between tasks in pipeline
 - Workspaces for sharing artifacts
 - Results for small data e.g. commit sha
- Webhooks
 - Default GitHub TriggerBinding
 - Filtering on payload (event, files, etc)
 - Add to payload with CEL expressions
 - Custom processing with interceptors
- Proxy support for git repositories



Builds

OpenShift Builds

Build lean images from application source code and binary using
Kubernetes tools on OpenShift



Use Kubernetes build tools (e.g. buildah, S2I, CNB¹, Kaniko, etc)



Build slim runtime images without the build dependencies



Extensible and customizable with your own build tools



Portable builds to any Kubernetes platform

OpenShift Builds

- Enabled via an Operator
- Build strategies
 - S2I
 - CNB (Buildpacks v3)
 - Buildah
 - Kaniko
- Extensible with custom strategies
- Based on Tekton

Cloud-Native Buildpacks

```
kind: Build
metadata:
  name: myapp-cnb-build
spec:
  source:
    url: https://github.com
  strategy:
    name: buildpacks-v3
  builder:
    image: heroku/buildpacks
  output:
    image: quay.io/myorg
```

Source-to-Image (S2I)

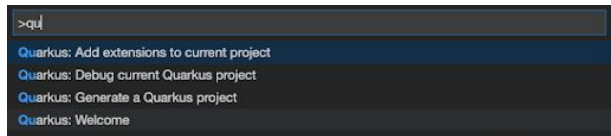
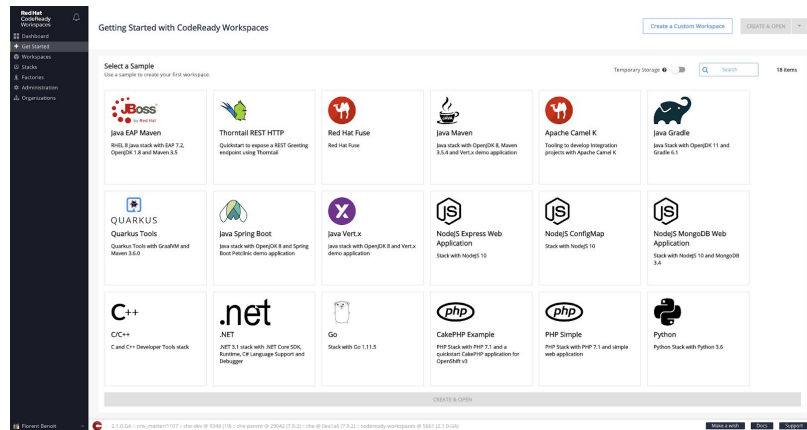
```
kind: Build
metadata:
  name: myapp-s2i-build
spec:
  source:
    url: https://github.com/myorg/myapp
  strategy:
    name: source-to-image
  builder:
    image: registry.redhat.io/openjdk/openjdk-11-rhel8
  output:
    base: docker.io/openjdk:11-jre-slim
    image: quay.io/myorg/myapp:v1
```

<https://github.com/redhat-developer/build>

CodeReady Workspaces 2.1

Available Now!

- **New onboarding experience** – updated catalog and simple workspace creation options
- **Quarkus support** – includes stack and plugin
- **Updated languages** – .NET Core 3.1, Camel K, Java 11 & Gradle
- **Air Gap improvements**
- **Many editor enhancements**



odo - OpenShift's Dev-Focused CLI

- Ability to provision operator-backed services / CRs (Tech Preview)
- Support for Che devfiles (Tech Preview)
- `odo debug info` - tell if the debug mode is enabled and if can port-forward

```
$ odo catalog list services
```

Operators available through Operator Hub

NAME	CRDs
etcdoperator.v0.9.4	EtcdCluster, EtcdBackup, EtcdRestore

```
$ odo service create etcdoperator.v0.9.4 --crd EtcdCluster
```

Deploying service etcdoperator.v0.9.4 of type:

etcdoperator.v0.9.4

example

- ✓ Deploying service [6ms]
- ✓ Service 'etcdoperator.v0.9.4' was created

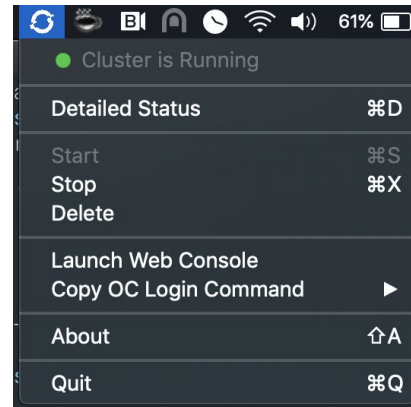
Progress of the provisioning will not be reported and might take a long time

You can see the current status by executing '`odo service list`'

Optionally, link etcdoperator.v0.9.4 to your component by running: '`odo link <component-name>`'

CodeReady Containers: OpenShift on your Laptop

- Available with OCP 4.4 ~May 4th
- Regular releases to pick up 4.3 z-streams and fresh certs
- System tray - access key actions and status from familiar toolbar (Tech Preview)
- `podman - docker build|run` replacement (Tech Preview)

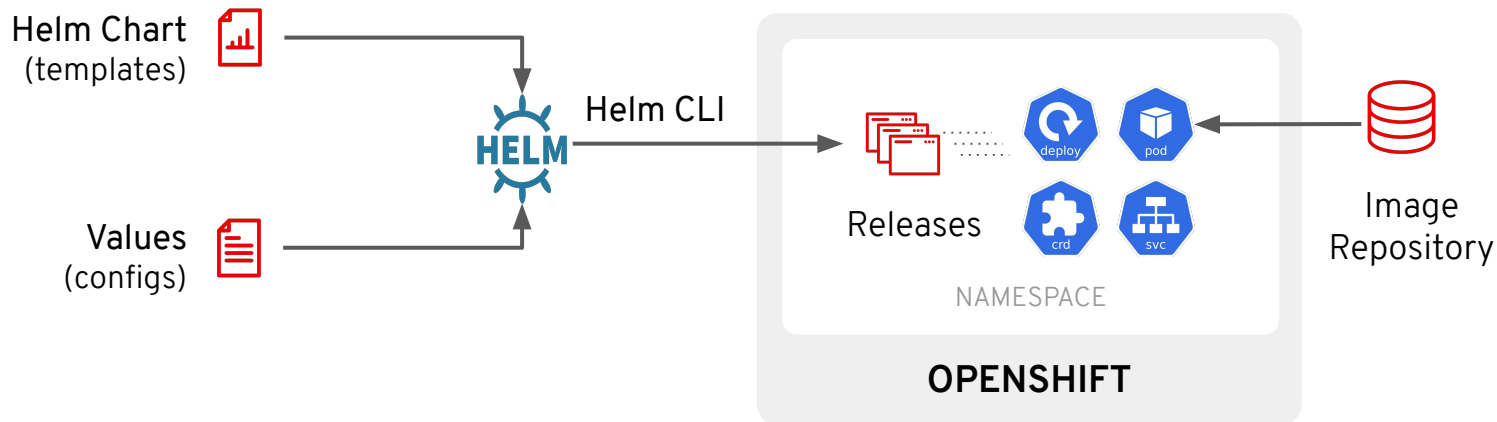


```
$ eval $(crc podman-env)
Setup environment to run podman

$ podman run hello-openshift
Trying to pull quay.io/library/hello-openshift...
Pulling hello-openshift...
Hello OpenShift World!
```

Helm 3 on OpenShift

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



Helm & Operators Capabilities

	Helm Chart	Operator
Packaging	✓	✓
App Installation	✓	✓
App Update (kubernetes manifests)	✓	✓
App Upgrade (data migration, adaption, etc)	-	✓
Backup & Recovery	-	✓
Workload & Log Analysis	-	✓
Intelligent Scaling	-	✓
Auto tuning	-	✓

OpenShift Console

The future is now.

**Extending the
Console**

**Improve
Observability**

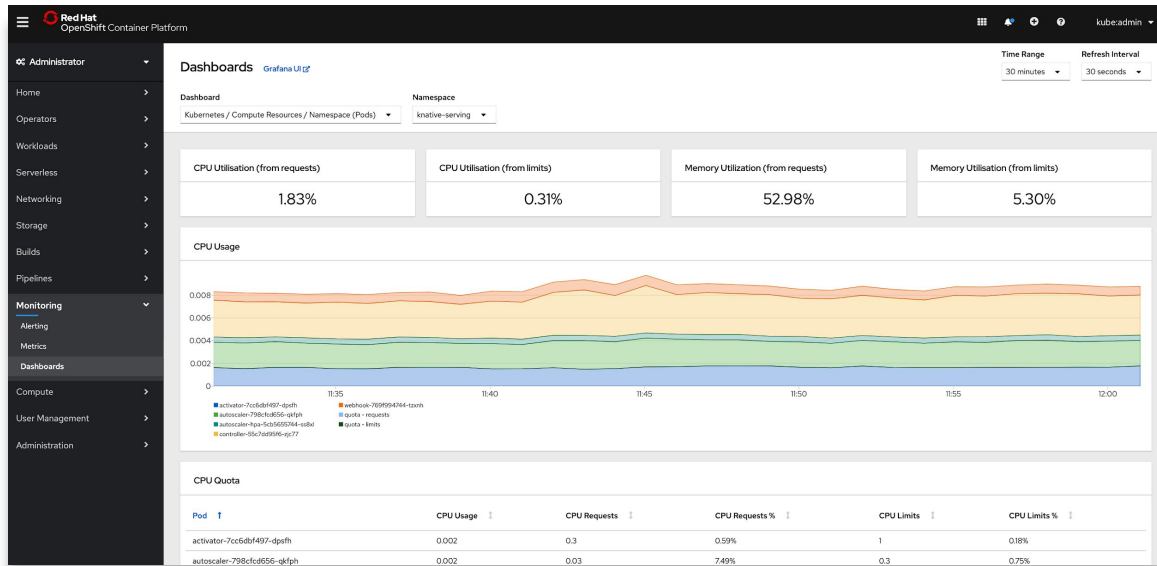
**Administration
made easy**

**Developer
Focused**

The Native Experience: Metrics Dashboards

At-a-glance views for your mission critical OpenShift components right from the OpenShift Console.

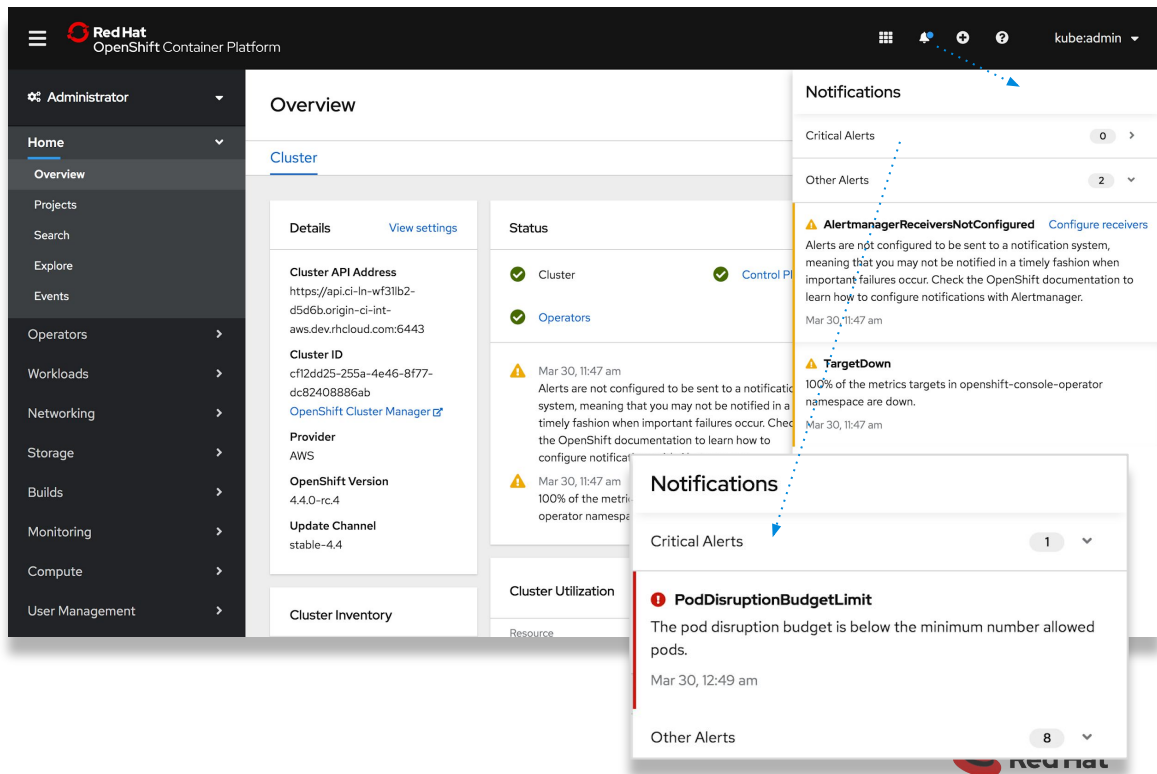
- Offers a **single, centralized place for all OpenShift components** (and more in the future) to provide **insights into critical KPIs** back to you.
- Switch between dashboards, representing different parts of your cluster.
- **Filter by different criterias** defined by a dashboards and **different time ranges**.
- In 4.4, you will **see all dashboards** that are **currently available in the read-only Grafana** instance.



Why Alerts Matter: Notification Drawer

Surfacing alerts and guiding users to troubleshoot issues on OpenShift 4.

- Easily view **Critical Alerts**, **Cluster updates** and other important alerts like **configuring Alert Receivers**.
- When alerts are firing, a **special signifier icon in the masthead** for easy access to the notification drawer.
- Users could **choose to omit one or more** notification types.
- Clicking on an alert takes the user to the **details page for the alert**.



Why Alerts Matter: Alert Receivers

Alerts are only useful if you know about them! Have your Alerts come to you.

- **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**

The screenshot displays the OpenShift Container Platform console interface. The left sidebar shows the navigation menu with 'Administration' expanded. The main content area shows the 'Overview' page for the cluster, with a 'Receivers' section at the bottom. A 'Create Receiver' modal is open, showing the configuration for a new PagerDuty receiver. The modal includes fields for Receiver Name, Receiver Type (set to PagerDuty), Integration Type (set to Events API v2), Routing Key, PagerDuty URL, and Routing Labels. A notification banner at the top right indicates that the AlertmanagerReceivers are not configured, with a link to 'Configure receivers'.

Supercharged Search: Multi-Resource Search

One stop shop to see all resources that matter to you. New Advance filtering.

- Offers a **single view** for **searching multiple k8s and OpenShift resources**.
- You can **filter by name** and **query by label** at the same.
- **Customize the resource types** to search as you like it.

The screenshot displays the OpenShift Container Platform search interface. The top navigation bar shows the Red Hat logo and the text 'OpenShift Container Platform'. The left sidebar contains a menu with options like Administrator, Home, Overview, Projects, Search, Explore, Events, Operators, Workloads, Serverless, Networking, Storage, Builds, Pipelines, Monitoring, Compute, User Management, and Administration. The main content area is titled 'Search' and shows a search bar with the text 'app=frontend'. Below the search bar, there are filters for Resource (CM ConfigMap, Deployment, PVC PersistentVol...) and Label (app=my-app). The search results are displayed in two sections: 'Config Maps' and 'Deployments'. The 'Config Maps' section shows a table with columns for Name, Namespace, Size, and Created. The 'Deployments' section shows a table with columns for Name, Namespace, Status, Labels, and Pod Selector. A bottom panel shows a search bar with the text 'snap' and filters for Resource (CM ConfigMap, Deployment, PVC PersistentVol...) and Label (app=my-app, Name snap). A blue dotted line connects the 'Search' section of the sidebar to the bottom panel.

Project: default

Search

Resources 3 Label app=frontend

Resource CM ConfigMap Deployment PVC PersistentVol... Label app=my-app Clear all filters

Config Maps core/v1

Create Config Map

Name	Namespace	Size	Created
nodejs-ex-git-1-global-ca	NS default	1	40 minutes ago
snapscheduler-lock	NS default	0	3 hours ago

Deployments apps/v1

Create Deployment

Name	Namespace	Status	Labels	Pod Selector
snapscheduler	NS default	2 of 2 pods	app=my-app	name=snapscheduler

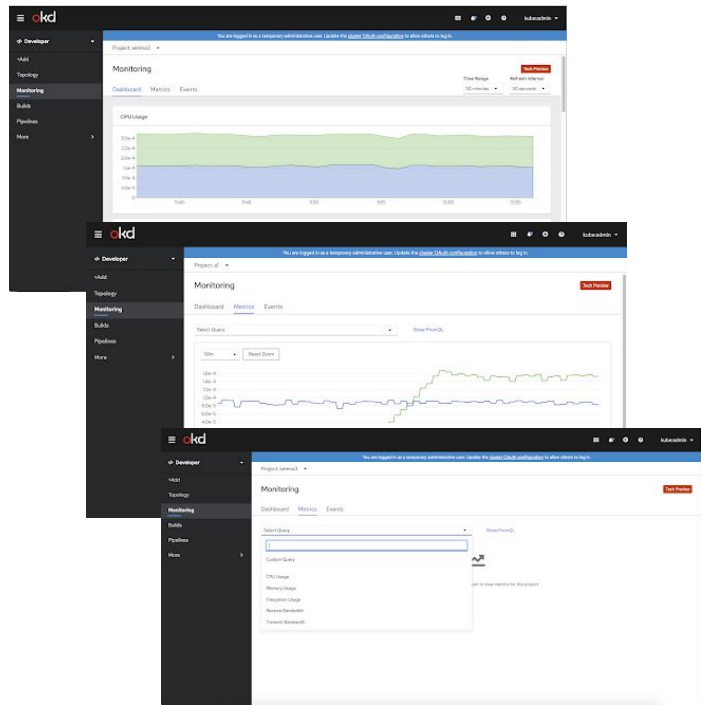
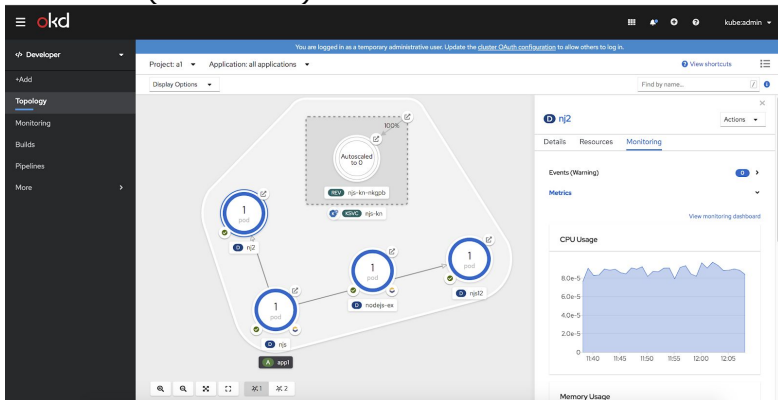
Persistent Volume Claims core/v1

Resources 3 Name snap

Resource CM ConfigMap Deployment PVC PersistentVol... Label app=my-app Name snap Clear all filters

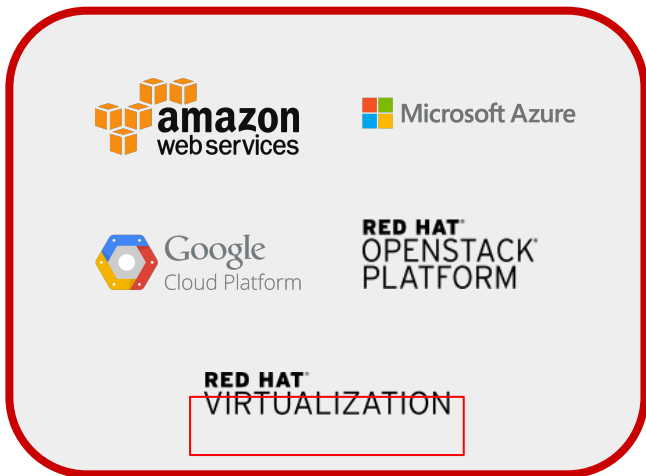
Monitoring Your Apps

- Focused Monitoring nav item – subitems with Dashboard, Metrics (PromQL) and Events
- Out of the box monitoring for CPU & Memory Usage, Bandwidth, Packets Rate & Loss
- Focused Monitoring section of selected workload details (see below)



4.4 Supported Providers

Full Stack Automation (IPI)



Pre-existing Infrastructure (UPI)



* Note: Planned for an upcoming 4.3.z release on April 30th

 Denotes new addition in OCP 4.4

Generally Available



New cluster etcd operator



- Improved and simplified disaster recovery
 - Automated master node restore scale up and TLS cert generation.
 - Remove a failed master node with single command in etcdctl container. *etcdctl member remove \$id*.
 - When the node comes up the cluster etcd operator generates the proper certs, scales up the cluster and starts etcd.
 - Restore the cluster from previous state with a single script. To restore the cluster to a previous state, you must have previously backed up etcd data by creating a snapshot. Use this snapshot to restore the cluster state.
 - Improved etcd debugging. New etcdctl container in the etcd static pod for quick debugging. Require cluster-admin rights to exec into etcd containers.
 - Verbose events describing important etcd cluster status
 - *oc get events -n openshift-etcd-operator*

LAST SEEN	TYPE	REASON	OBJECT	MESSAGE
13m	Normal	MemberAdd	deployment/etcd-operator	adding new peer https://10.0.131.166:2380
126m	Warning	UnhealthyEtcdMember	deployment/etcd-operator	unhealthy members: ip-10-0-131-166.us-west-1.compute.internal

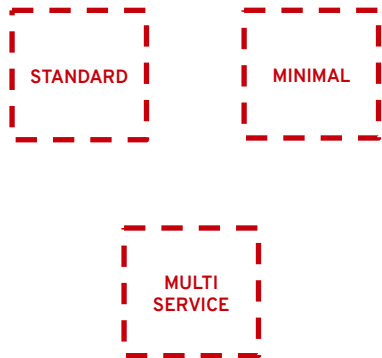
- Faster cluster installation times - 15-20% improvement in cluster install time in OCP 4.4 over 4.3



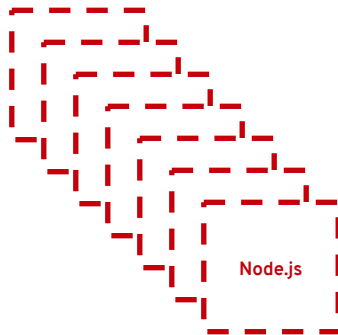
BROAD ECOSYSTEM OF WORKLOADS

Red Hat Universal Base Image

Enable an ecosystem of freely distributable operators for Kubernetes/OpenShift



Base
Images



New Java and
Golang Images



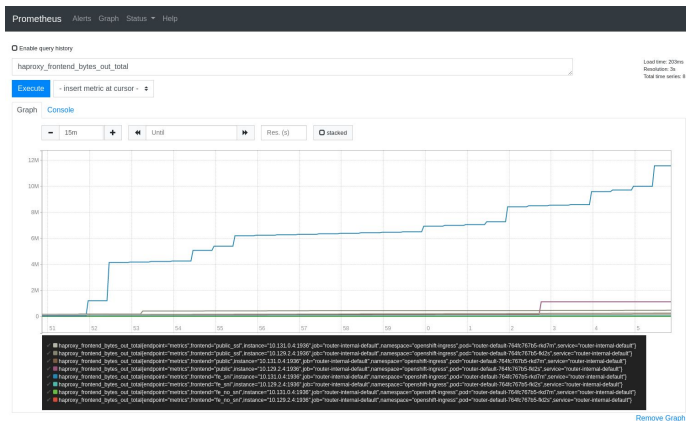
Package
Subset

Generally Available

HAProxy 2.0



- We've upgraded our version of HAProxy used for Ingress from version 1.8.17 to 2.0.13
- This is a “transparent” upgrade to HAProxy 2.0 and introduces no new API or supported user-facing capabilities to the platform
- Represents significant performance improvements and many bug fixes
- Adds native Prometheus metrics
- Full IPv6 support when the rest of the product is ready
- Provides the foundation for high-value ingress controller features, which we'll add full support for in future releases, including:
 - HTTP/2 and gRPC (targeting 4.5)
 - [Layer 7 retries](#)
 - ...and [many others](#)



DNS Forwarding

- DNS forwarding can override the forwarding configuration identified in `/etc/resolv.conf` on a per-zone basis by specifying which name server should be used for a given zone
- The specified DNS server might be located in my datacenter across a VPN connection
- The DNS Operator can create and update the ConfigMap named `dns-default` with additional server configuration blocks
- Any DNS query not matched by the forwarding zones falls back to using the DNS servers specified by `/etc/resolv.conf`
- For additional information, see the [CoreDNS Documentation](#)



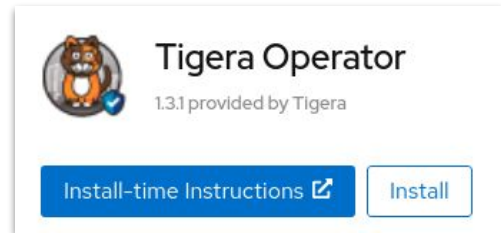
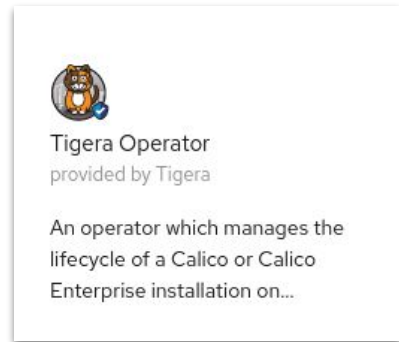
```
$ oc edit dns.operator/default

apiVersion: operator.openshift.io/v1
kind: DNS
metadata:
  name: default
spec:
  servers:
  - name: dns-1
    zones:
    - foo.com
    - bar.com
    forwardPlugin:
      upstreams:
      - 1.1.1.1
      - 2.2.2.2:5353
  - name: dns-2
    zones:
    - example.com
    forwardPlugin:
      upstreams:
      - 3.3.3.3
      - 4.4.4.4:5454

$ oc get configmap/dns-default -n openshift-dns -o
yaml
```

Calico Kubernetes CNI Plug-In Certification

- The open source Calico networking solution is now a certified Kubernetes CNI plug-in that can be used to replace OpenShift's default out-of-the-box networking during installation (only)
- The integration is fully supported through the Partner Connect relationship between Red Hat and Tigera
- Calico 3.12.0 on OpenShift 4.2+
- Installation Instructions:
<https://docs.projectcalico.org/getting-started/openshift/installation>



Automated Image Pruning

Automatically prune Images that are no longer required by the system due to age, status, or exceeding limits.

- Enabled by default on new clusters
- Existing clusters can opt-in
- Runs daily by default
- Admin can disable
- Manages a CronJob for pruning

```
apiVersion: imageregistry.operator.openshift.io/v1
kind: ImagePruner
metadata:
  name: cluster
spec:
  schedule: "*/0 * * * *"
  suspend: false
  keepTagRevisions: 3
  keepYoungerThan: 60m
  resources: {}
  affinity: {}
  nodeSelector: {}
  tolerations: {}
  startingDeadlineSeconds: 60
  successfulJobsHistoryLimit: 3
  failedJobsHistoryLimit: 3
```

Storage Devices

Continued improvements

- CSI API work
 - Resize to GA
 - Snapshot/Restore to Tech Preview
 - Clone to Tech Preview
 - Sidecar rebase
- Partner enablement
 - CSI Test Suite now included in 4.4

OCP Supported (Intree Drivers)

AWS EBS	Fibre Channel
Azure File & Disk	HostPath
GCE PD	Local Volume
VMware vSphere Disk	Raw Block
NFS	iSCSI

Supported via OCS


File , Block, Raw Block, Object


Supported via OSP

Cinder

Thank you



 [linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)

 [youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)

Red Hat is here to help

Responding to COVID-19 requires collaboration, transparency, and the free exchange of expertise.

[Ways to contact us](#)



OpenShift Roadmap

Q2 2020 OpenShift 4.4	
DEV	<ul style="list-style-type: none"> • OpenShift Serverless (Knative) GA • Guided application creation • OpenShift Pipelines (Tekton) TP • OpenShift Builds (v2) DP • Jenkins Operator DP • Helm 3 GA
APP	<ul style="list-style-type: none"> • Improved Dev Console for monitoring • Helm Charts in Developer Catalog
PLATFORM	<ul style="list-style-type: none"> • Multi-cluster summary dashboards • Centralized cluster updates • OpenShift for IBM Power • RHV (IPI), RHOSP (UPI), Azure (UPI) • Native Metric Dashboards in the Console • Descheduler (TP) • HA Proxy 2.0 • SCTP support • CSI snapshot/restore (TP) • DNS Forwarding • Cluster etcd managed by Operator • Automated image pruning
HOSTED	<ul style="list-style-type: none"> • OSD SOC2 Type 1 Certification • OSD on GCP • OSD private clusters • Cost management GA

H2 2020 OpenShift 4.5/4.6	
DEV	<ul style="list-style-type: none"> • OpenShift Serverless Eventing GA • OpenShift Pipelines (Tekton) GA • OpenShift Builds (v2) TP • Jenkins Operator TP
APP	<ul style="list-style-type: none"> • Simplify Operator Lifecycle interactions • Build Operator catalogs in container images • Helm workflows in Console • Monitor application workloads
PLATFORM	<ul style="list-style-type: none"> • VMware vSphere (IPI), RHV (UPI) • AWS & Azure custom regions & endpoints • Node Terminal Access in the Console • Log forwarding GA • OVN GA, OVN Egress Firewall/Router/IP • Edge: 3-node clusters, remote workers • Compliance Operator • IPv6 (single/dual stack on control plane) • HTTP/2 and gRPC Support for Router • RHCOS installer, static networking UX • Graceful shutdown and recovery procedure • Logging: Elasticsearch v6 • AWS Spot instance support & IAM Identity • Windows Containers
HOSTED	<ul style="list-style-type: none"> • OSD SOC & ISO Certifications • OSD RWX storage • OSD log forwarding

2021 OpenShift 4.7+	
DEV	<ul style="list-style-type: none"> • OpenShift Builds (v2) GA • Jenkins Operator GA
APP	<ul style="list-style-type: none"> • Improvements to GitOps experience • Improvements to Operator management • Hybrid Operators with Operator-SDK
PLATFORM	<ul style="list-style-type: none"> • Microsoft Hyper-V (UPI) • Single node cluster • Enable user namespaces • Utilize cgroups v2 • Keycloak/External IdP integration • Priority and Fairness for APIserver • Azure Hub and HCI plus other public clouds • Network Enhancements derived from OVN
HOSTED	<ul style="list-style-type: none"> • OSD enhanced consumption billing