

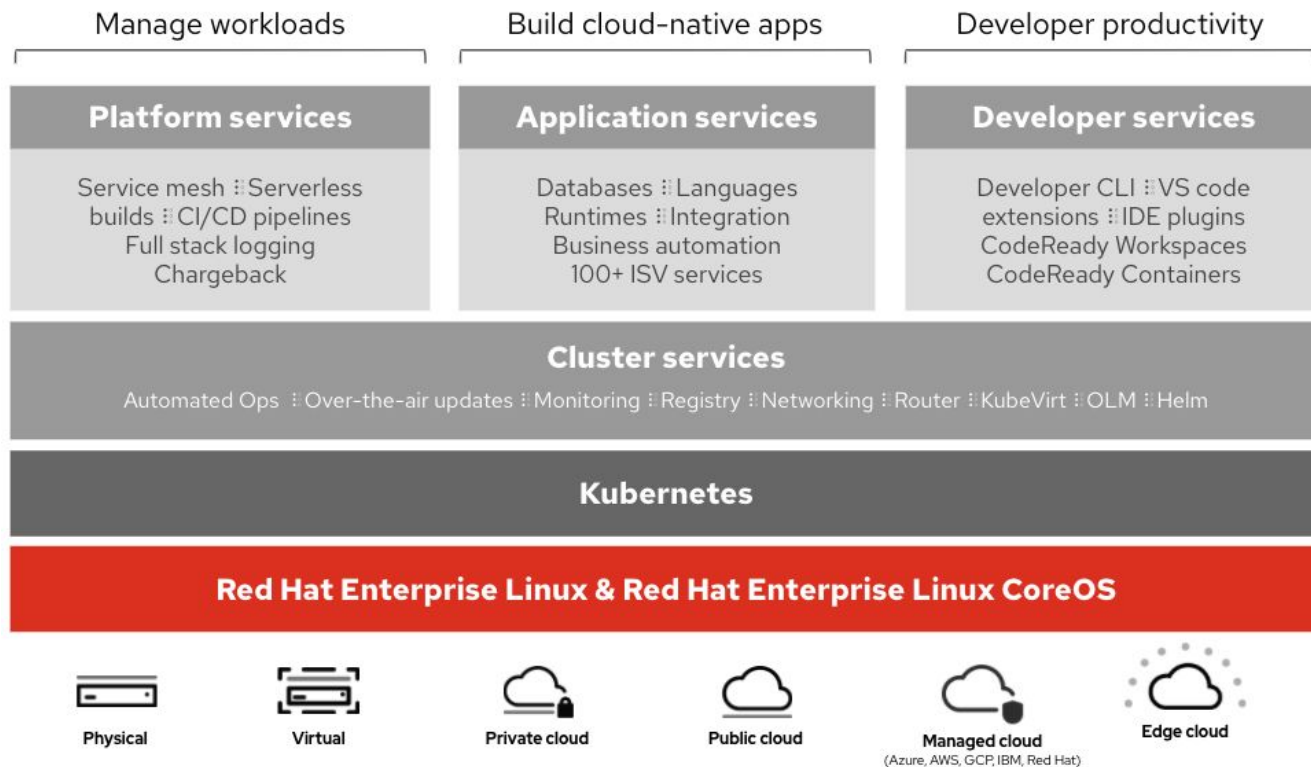


# Faster Dev and Easier Ops

with OpenShift 4

# OpenShift 4

Designed to significantly improve the way applications are developed and clusters are deployed and managed



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

**Seamless Kubernetes deployment** to any cloud or on-premises environment

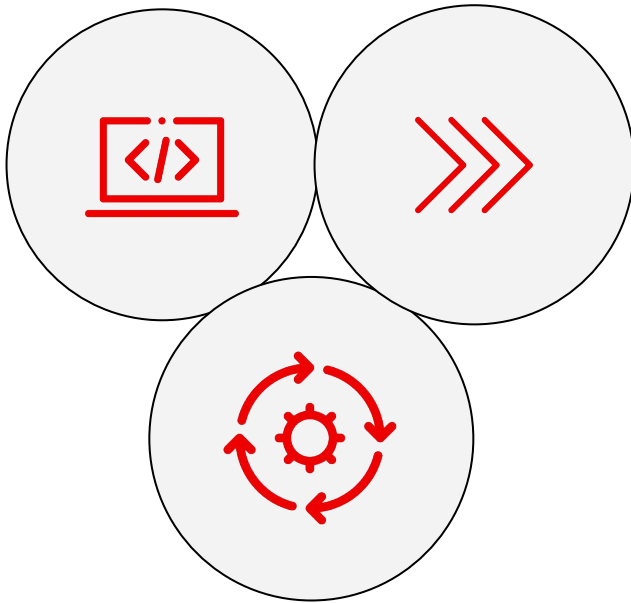
**Autoscaling** of cloud resources

**One-click updates** for platform, services, and applications

**Developer tools and services** to support your preferred workflows

# Why OpenShift 4?

## Open Hybrid Cloud Requires New Capabilities



- Simplified Installations
- Cloud-specific Integrations
- Operator-centric Architecture / Automated Operations
- Enhanced Platform Upgrades
- Integrated Linux OS (Patching)
- Enhanced Platform Security
- Operations-centric Console
- Integrated Platform Scaling
- Integrated Monitoring
- Developer-Centric Console
- Integrated Service Mesh
- Integrated Serverless
- CodeReady Portfolio for Developers
- OperatorHub Ecosystem
- OpenDataHub Ecosystem
- ISV Software On-demand

# Develop at the Speed of Light

Get code running faster, more efficiently, and more securely - only on OpenShift 4



## Developer Onboarding in Minutes, Not Weeks

Use browser based **Code Ready Workspaces** to make developers productive faster and ensure code is secure.

## See Your Changes Faster

**OpenShift Pipelines** leverage Kubernetes primitives resulting in faster builds and less overhead when pushing code.

## Run on demand with Serverless

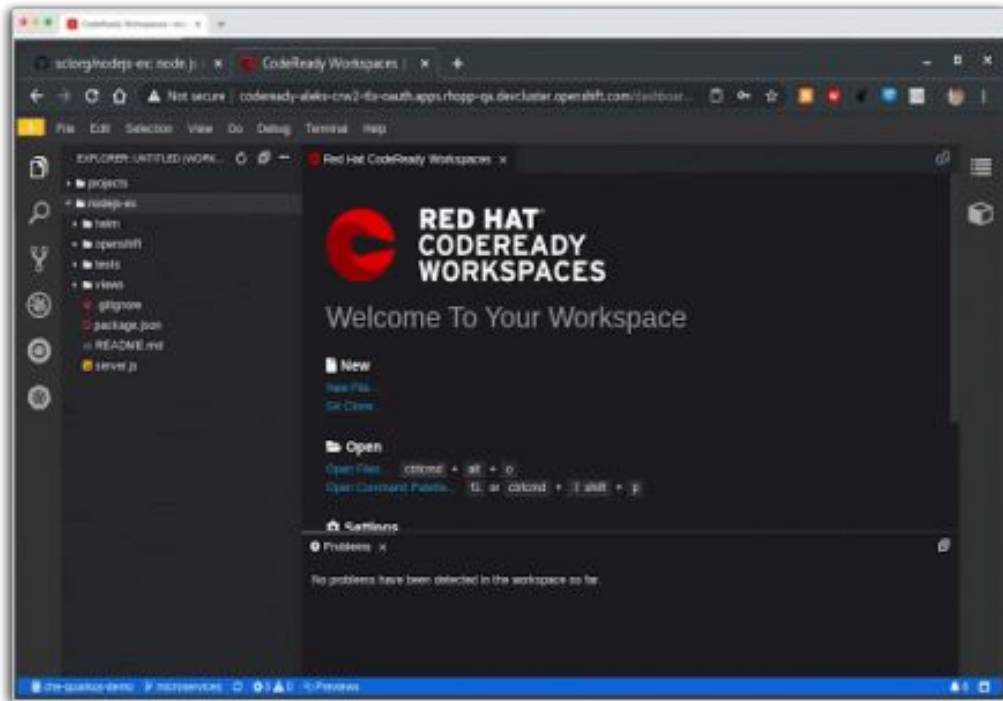
Scale from zero to meet demand based on common events with **OpenShift Serverless**.

## Debug Microservices Quickly

Manage traffic, trace, and visualize communication between microservices components with **OpenShift Service Mesh**.

# Code Ready Workspaces

Cloud-Native IDE for secure and fast code development



[Click for Demo](#)



Based on the open Eclipse Che project (>10M pulls)

Devfiles provide developer environments as code

Extensible with VS Code extension compatibility



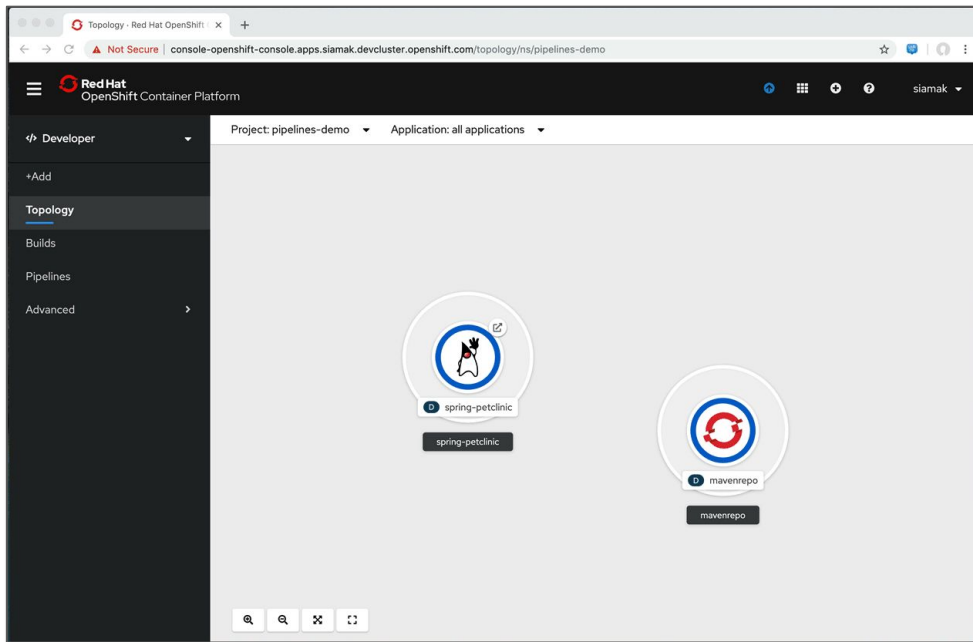
Onboard developers faster

Easily monitor and operate with Prometheus and Grafana dashboards

Reduce risk of security vulnerabilities in applications

# OpenShift Pipelines

Kubernetes Native Continuous Integration and Continuous Deployment



[Click for Demo](#)



Kubernetes-native declarative Pipelines with Tekton

Serverless CI/CD with no single server to share or maintain

Standard and portable to any Kubernetes platform

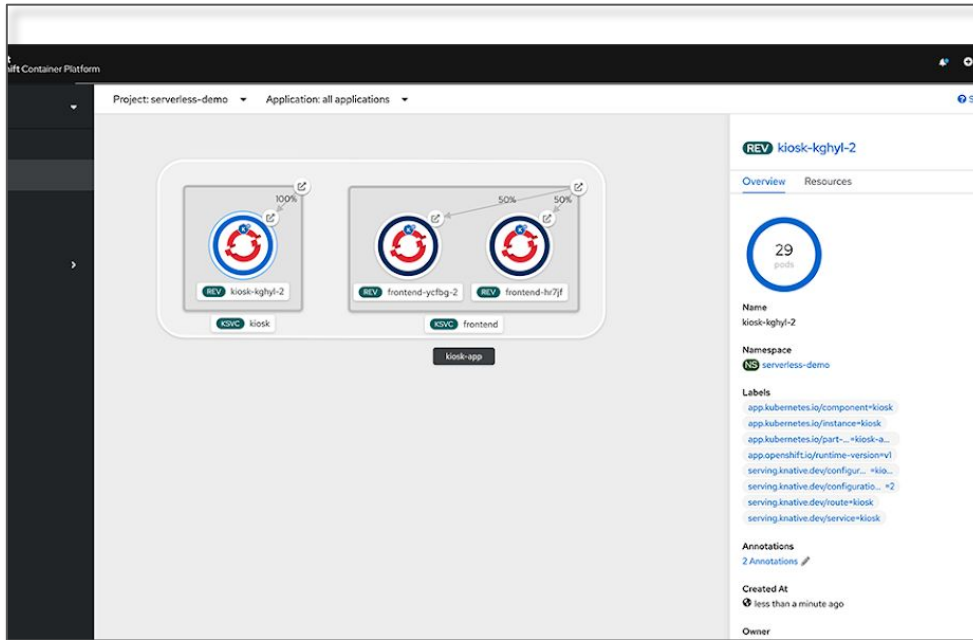
Deploy code to production faster

Reduce complexity with integrated CI/CD

Web, CLI, and VS Code and IDE plugins

# OpenShift Serverless

## Serverless Building Blocks for Any Container Workload



[Click for Demo](#)



Powered by the Knative open source project

Built-in versioning, traffic splitting, and more

Trigger serverless containers from a variety of event sources



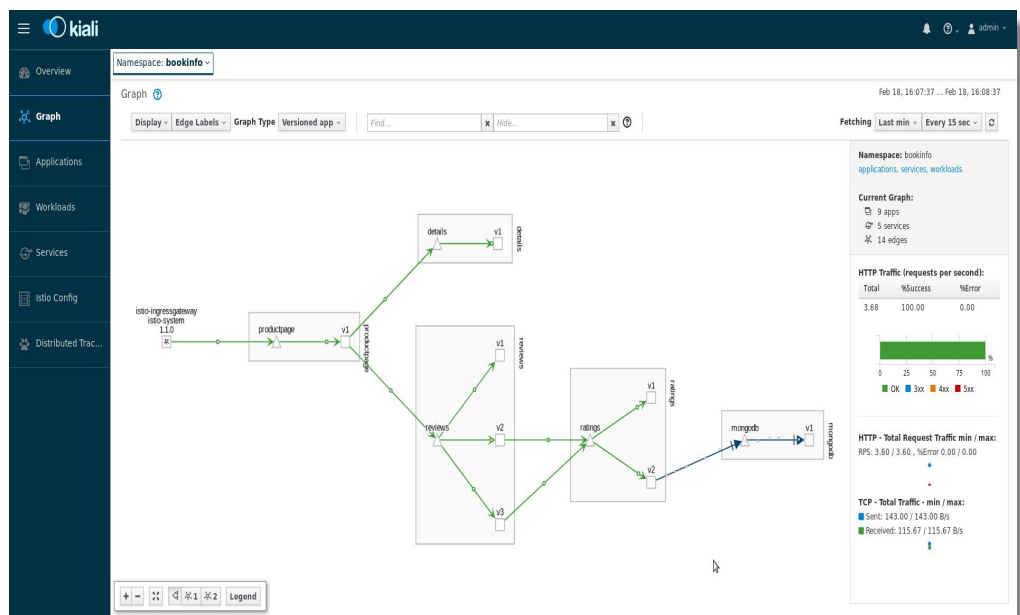
Go from container to URL in seconds

Scale up or to zero on demand

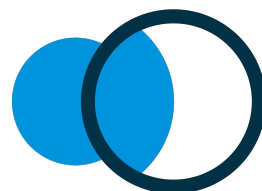
Make use of over 100+ event sources

# OpenShift Service Mesh

Connect, manage, and observe microservices-based applications



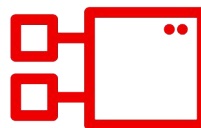
[Click for Demo](#)



Istio: Integrate and manage traffic flows across services

Jaeger: Track requests with in depth tracing between services

Kiali: Visualize and monitor traces



Integrate communication policies without changing application code

Reduce complexity of application code and cost to maintain

Gain behavioral insight into your services





**MARKET NOTE**  
Red Hat OpenShift 4.2 Delivers Bevy of Developer Tools That Enhance Cloud-Native Development  
Arnal Dayaratna  
EXECUTIVE SNAPSHOT

**FIGURE 1**  
Executive Snapshot: An Overview of Red Hat OpenShift 4.2

On October 26, 2019, Red Hat announced the release of Red Hat OpenShift 4.2, its Kubernetes-based platform as a service that specializes in modern application development. OpenShift 4.2 features a slew of developer-focused enhancements such as a dedicated developer console, a command line interface that simplifies deployment to Kubernetes (odo), connectors to a multitude of IDEs, and a deployment extension for Microsoft Azure DevOps.

**Key Takeaways**

- The topology view illustrates Red Hat's recognition of the importance of visually guided development tools to contemporary development. IDC believes this visually guided view into application architecture enriches the development experience by delivering valuable guidance regarding application architecture.
- Odo's simplification of deployment to Kubernetes-based infrastructures is notable because it takes ownership of the deployment of applications to Kubernetes, thereby absolving developers of the need to understand the minutia of Kubernetes.
- By reducing the friction associated with developing on OpenShift, OpenShift Connectors provide a means for developers to use familiar IDEs. This ability to use IDEs in which developers are well-versed means that OpenShift Connectors enable developers to transition existing projects and code to OpenShift deployments.
- Azure DevOps provides developers with access to a well-defined operational pathway for integrating DevOps practices into OpenShift deployments. All this means that developers can swiftly operationalize practices such as rapid provisioning, automated releases, application performance management, and the implementation of security by using a turnkey, enterprise-grade DevOps platform.

Source: IDC, 2019

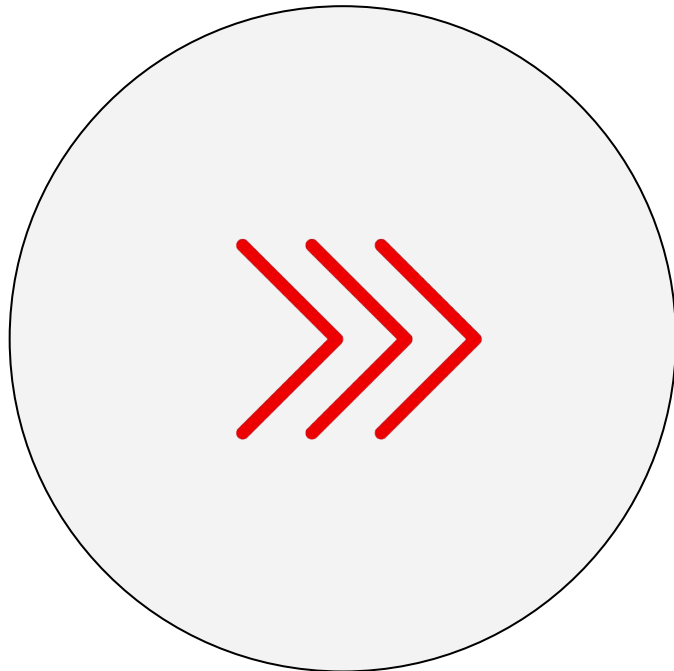
December 2019, IDC #US45668219

"Taken together with Red Hat's announcement of service mesh, serverless, and CI/CD functionality, Red Hat OpenShift 4.2 represents a **breakthrough in the space of cloud-native development tools.**"

Arnal Dayaratna  
Analyst, IDC

# Modernize Your World

Self-managed clusters with automated operations to increase stability and scalability



## Bring your VMs into the Future

Integrate existing virtual machines with your microservices based applications seamlessly with **OpenShift Virtualization**

## Migration Toolkits

**Accelerate modernization and migration** of apps, containers, and virtual machines to OpenShift with tools and web services

## Independent Software Vendors (ISVs)

100+ Red Hat OpenShift certified operators in a single place **with an "App-Store" experience**

# OpenShift Virtualization

Virtual machines, containers, and serverless together, the right way.

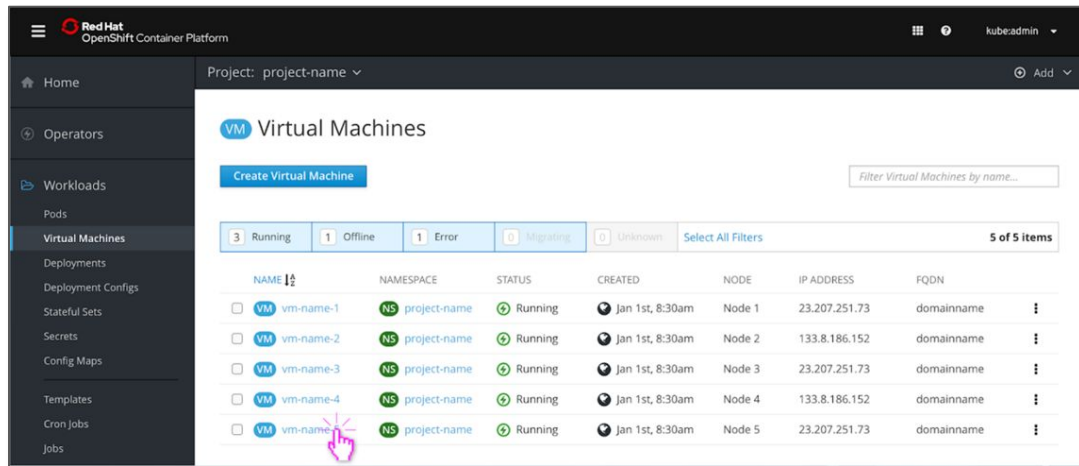
Accelerate application delivery with a single platform that manages mixed applications

Avoid unnecessary refactoring of applications

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

Run virtual machines within a container and orchestrate them with Kubernetes and KubeVirt

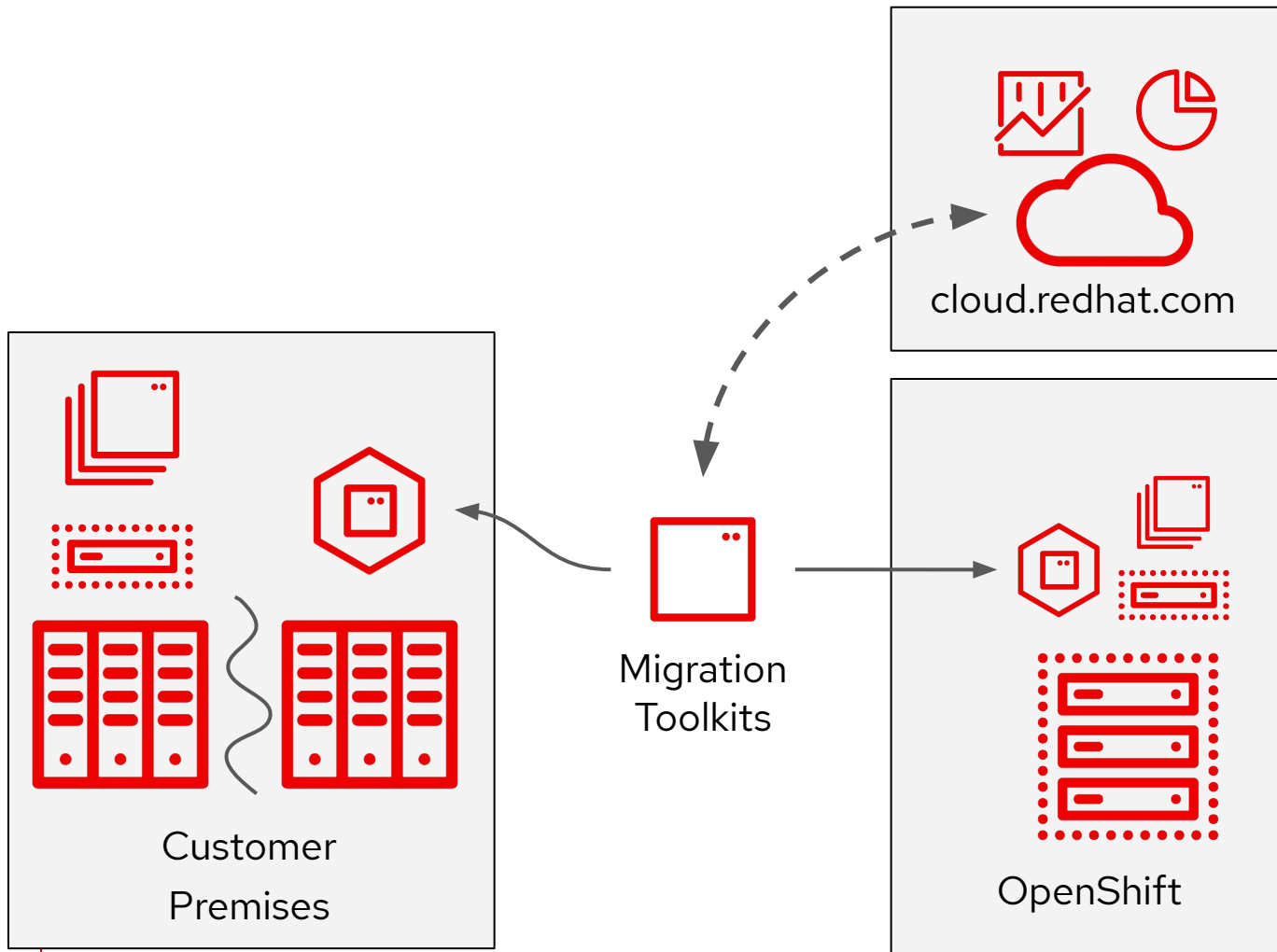
Create and manage Linux and Windows VMs



Click for Demo

# Red Hat Migration Toolkits

Assess, Analyze, and Migrate Apps, Containers, and VMs to OpenShift



## Migration Toolkit for Applications

Tools and services that help customers migrate and modernize applications to run on OpenShift



## Migration Toolkit for Containers

Tools and services that help users migrate containers between OpenShift clusters



## Migration Toolkit for Virtualization

Tools and services that help customers migrate to OpenShift Virtualization

[Demonstrations](#)

# Red Hat Marketplace

100+ Red Hat OpenShift certified operators in a single place with an "App-Store" experience

AI / ML

Customer Code

```
{ | }
```

DevOps Tools

Monitoring & Logging



**Red Hat Marketplace**  
Operated by IBM

**TRY -> BUY -> DEPLOY**  
in a Single Place  
in Mere Minutes

Application Runtimes

Security

Databases & Big Data

Networking

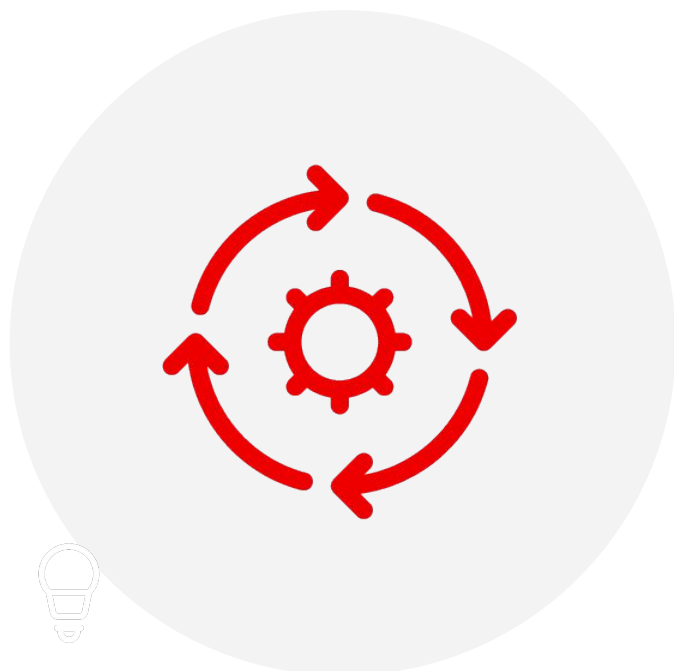
Any infrastructure

Physical      Virtual      Private      Public

Storage

# Be a Smooth Operator

Self-managed clusters with automated operations to increase stability and scalability



## Platform Integration

OpenShift 4 manages the underlying infrastructure (e.g. AWS, VMw, Metal) for scaling & lifecycle management, plus **Installer Provisioned Infrastructure** allows the platform & dependencies to be automatically deployed with `openshift-install`

## "Do Less" with Operators

**OpenShift Operators** let administrators maintain control with streamlined automation of services & frameworks, whilst giving developers and users self-service and on-demand access to value-add components.

## Simplified Operations

Automated OpenShift updates that are as simple as updating your phone with **Over The Air Updates**, and CoreOS ensuring configuration enforcement, immutable infrastructure, and simplified patching/roll-back.

## Deployment Flexibility

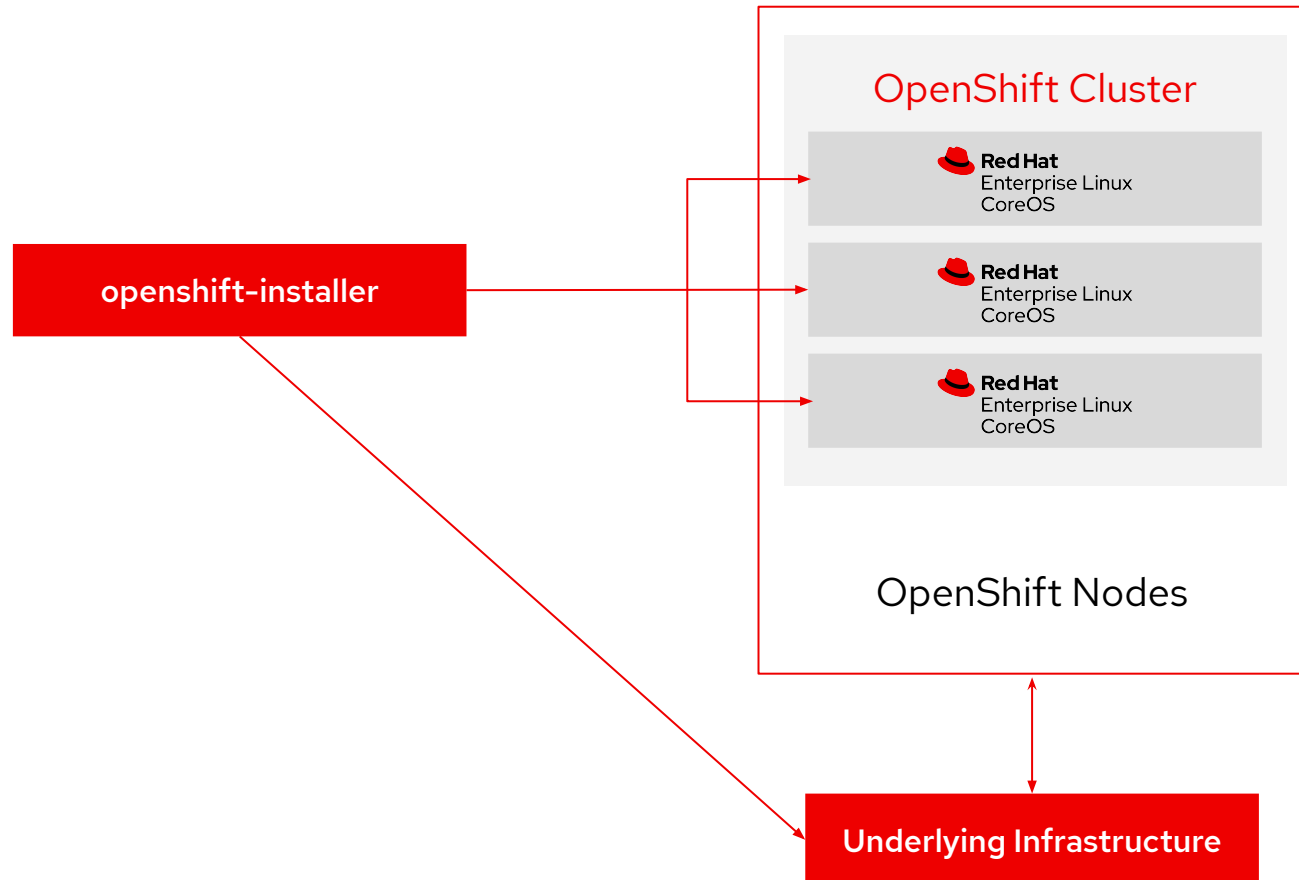
Manage OpenShift clusters in the cloud or on-premises from one place. True hybrid cloud with **Advanced Cluster Manager**.

# Full stack automation installation

## Deploying Red Hat OpenShift with installer-provisioned infrastructure (IPI)

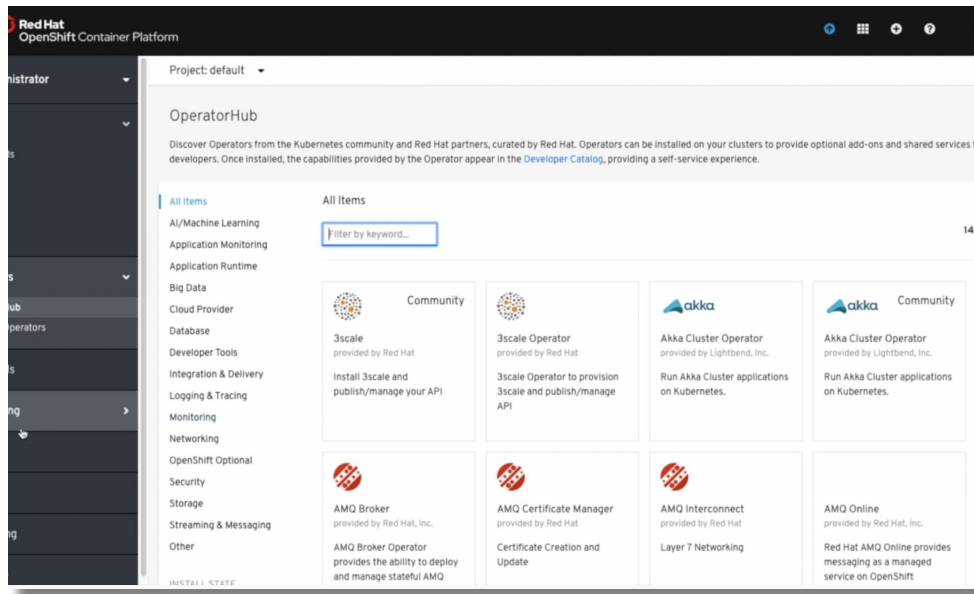
### ► Installer provisions

- Networks
- Internal load balancers \*
- Internal DNS \*
- Red Hat CoreOS installation
- CoreOS ignition configs
- OpenShift nodes
- OpenShift cluster resources



# OpenShift Kubernetes Operator Framework

Codify knowledge and workflows to automate and simplify Kubernetes



Operator SDK: No Kubernetes API knowledge required

Operator Lifecycle Manager: Automate install, configure, updates

Operator Hub: Certified operators from Red Hat and partners

Faster development and test cycles with developer self-service

Simplified Day 2 ops with full administrator control

Save time by automating build, deploy and ops



# OpenShift Over the Air Updates

Automated updates that make updates as simple as updating your phone

Intelligent OpenShift cluster updates

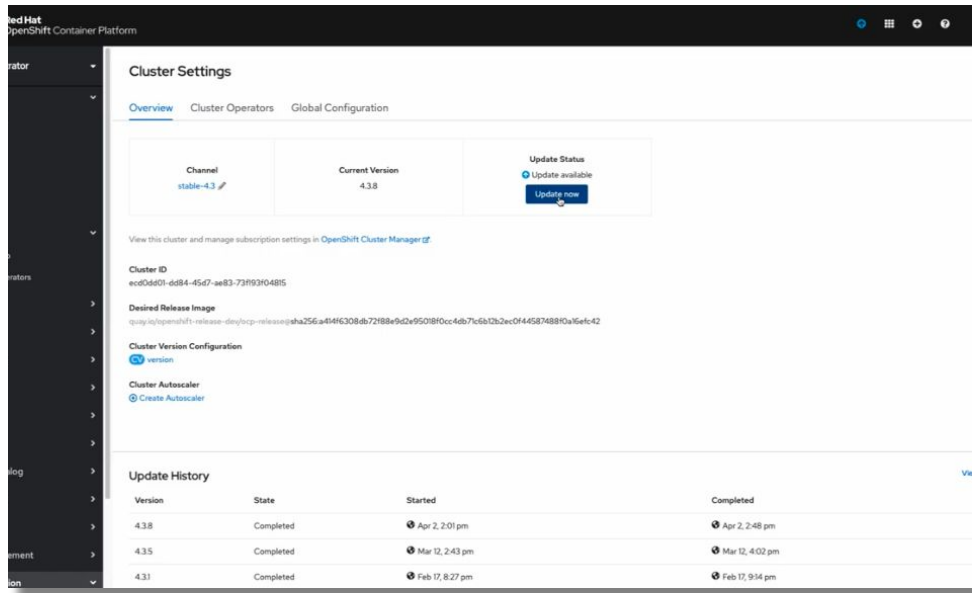
Single update mechanism for the OS and container platform

Patches/updates available weekly

Keep systems updated with the latest patches and features

No waiting - Access to updates when you need them

Saves administrators significant time on cluster updates



# OpenShift Advanced Cluster Manager

Unified cluster management across on-premises and cloud environments

Cloud-based multi-cluster management

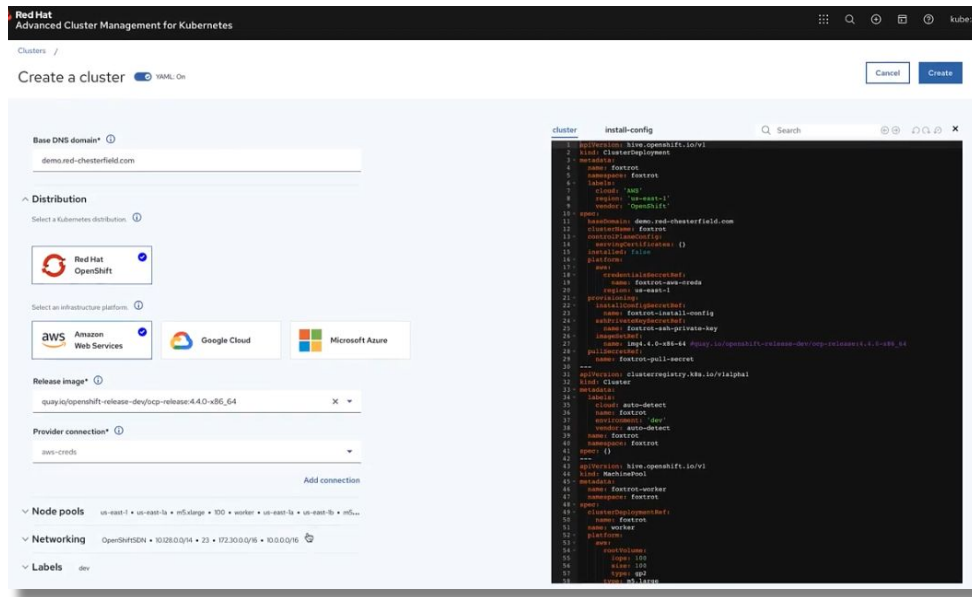
Supports clusters on AWS, Azure, Google, OpenStack, vSphere

Centralized management of cluster installs and updates

Assure consistent cluster configurations

Save time provisioning and managing multiple clusters

Manage OpenShift clusters anywhere, on any cloud





"The cluster is **much easier to maintain** and to grow because a big bunch of the **operations are now completely automated through the operators** and everything is nearly done through a comprehensive UI".

"Adding a node on the cluster before used to take half a day. Now it's **just a matter of clicking on a button**, so it's about 4 minutes."

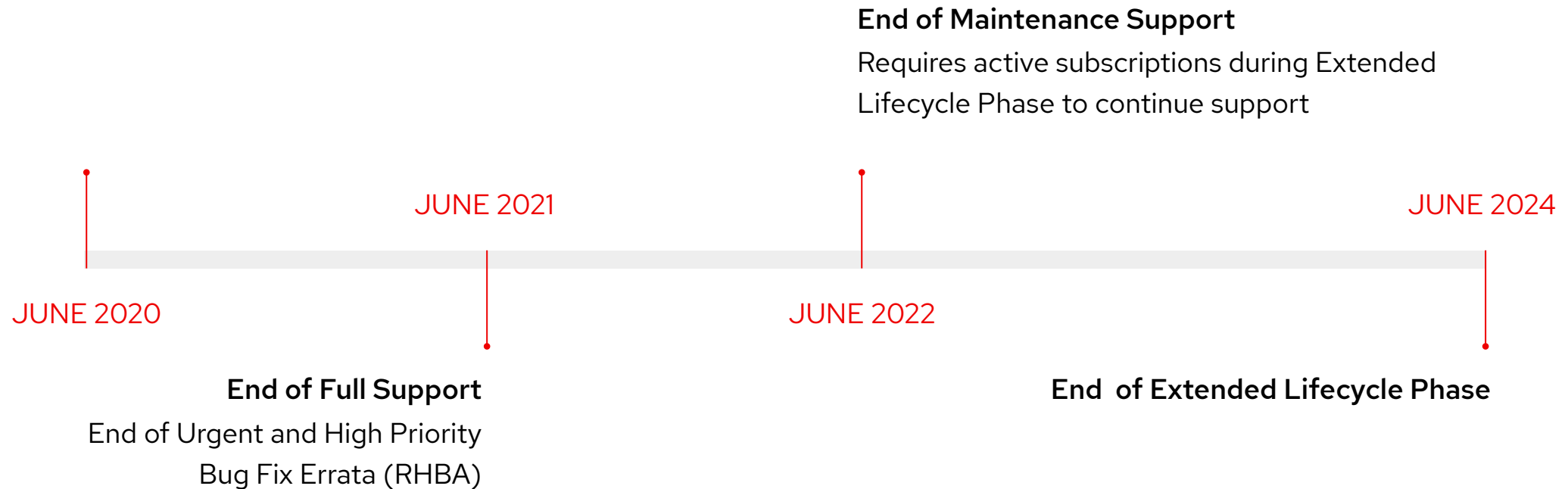
"upgrading to new versions was something every cluster admin feared, but now **it's really secure and safe.**"

**Michael Courcy**  
DevOps Architect, Sopra Steria



# OpenShift 3 Lifecycle

End of Full Support and Maintenance Support for  
OpenShift 3 takes places over the next 2 Years



# Next Steps

## Get Started



Take OpenShift 4 for a [test drive](#)

Try out the new [application development capabilities](#)



See if you [qualify for discounted training and certification](#) on OpenShift 4



Perform an OpenShift 4 Readiness Assessment  
(Coming November 2)



Review the [best practices guide](#) for migrating to OpenShift 4



[Speak with an expert](#) about migration

# 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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