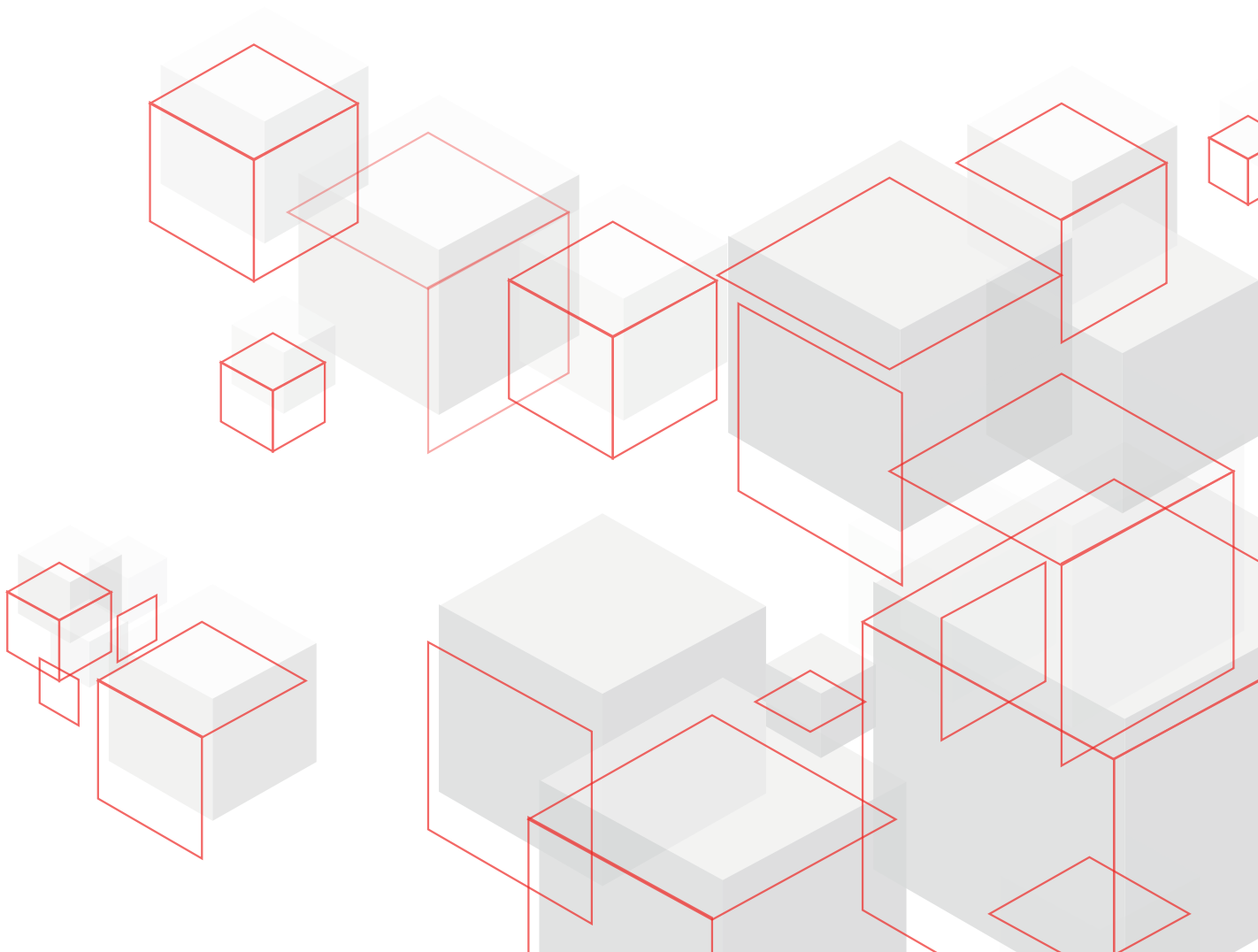**Red Hat**

Red Hat OpenShift and Kubernetes… what's the difference?

Red Hat OpenShift is 100% Kubernetes compliant.[1]

Red Hat® OpenShift® is a certified Kubernetes platform and distribution.[2] In fact, Red Hat OpenShift was one of the first vendor offerings to pass the Cloud Native Computing Foundation (CNCF) [Kubernetes conformance assessment](#).[3]

Red Hat OpenShift was also one of the first Kubernetes solutions to come to market in June 2015, when Red Hat OpenShift 3 was launched.[4] And Red Hat continues to be one of the top contributors to the Kubernetes community.[5]

What is the CNCF?

The [Cloud Native Computing Foundation (CNCF)](#) is a Linux® Foundation project. It was founded in 2015 to help advance container technology and coordinate its evolution. In 2018, it took over operational control of Kubernetes.

For more information, visit www.cncf.io.

1 *Cloud Native Computing Foundation. "[Software conformance (Certified Kubernetes),](#)" Accessed September 8, 2020.*

2 *Cloud Native Computing Foundation. "[CNCF cloud native interactive landscape: Red Hat OpenShift,](#)" Accessed September 8, 2020.*

3 *Cloud Native Computing Foundation. "[Cloud Native Computing Foundation launches certified Kubernetes program with 32 conformant distributions and platforms,](#)" November 13, 2017.*

4 *Red Hat press release. "[Red Hat Delivers OpenShift Enterprise 3 to power a new web-scale distributed application platform,](#)" June 24, 2015.*

5 *Stackalytics. "[Kubernetes commits by company,](#)" Accessed September 8, 2020.*

"Is Red Hat OpenShift really Kubernetes?"

This question, or something like it, is one that Red Hatters have been asked countless times. Maybe you've even wondered the same.

[Warning: spoilers ahead]

This document answers this question in detail, but if you can't wait, I'll cut to the chase: Red Hat OpenShift is 100% certified Kubernetes.[6]

But it's not just Kubernetes. It's also all the components you need to run Kubernetes in production: that's the underlying Linux platform, integrated networking, storage, monitoring, logging, installation, upgrades, and so much more. That's why Red Hat OpenShift is the leading enterprise Kubernetes platform,[7] trusted by thousands of businesses to run their most important applications.

Over the coming pages, I'll explain how much more you get with Red Hat OpenShift, how it can make the transition to containers and Kubernetes easier, and how it helps organizations like yours to realize the full potential of a hybrid cloud strategy to transform your business.

What's in the box?

Joe

Joe Fernandes

VP, Cloud Platforms Business Unit, Red Hat

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6 *Cloud Native Computing Foundation. "Software conformance (Certified Kubernetes)," Accessed September 8, 2020.*

7 *Hall, Christine. "Who's winning in the container software market," ITPro Today. June 29, 2021.*

TL;DR

Don't have time to read the whole report? The answer you're looking for could be in this list of frequently asked questions.

Does Red Hat OpenShift support *kubectl*?

Yes. Red Hat OpenShift has always supported the use of kubectl for users who prefer to use the native Kubernetes command-line interface (CLI). Red Hat OpenShift also supports other command line tools, like oc and odo, which provide additional administrative functions and higher-level CLI functions for developers who aren't Kubernetes experts.

Read more about how Red Hat OpenShift can help you work the way you want on .

Does Red Hat OpenShift support a wide range of third-party tools?

Yes. Red Hat OpenShift users can access an ecosystem of commercial and open source tools to extend the platform, including solutions for monitoring, log management, networking, storage, container builds, continuous integration / continuous delivery (CI/CD), and more.

Red Hat OpenShift users can also deploy their choice of approved application services, including various programming language runtimes, databases, messaging, application programming interface (API) management, analytics, artificial intelligence/machine learning (AI/ML), and more. This list includes fully certified solutions from Red Hat's independent software vendors (ISVs), partners, and from the community.

Find out more about Red Hat OpenShift's support for cloud-native CI/CD on .

Does Red Hat OpenShift support Kubernetes Operators?

Yes. Red Hat OpenShift 4 platform is built with Operators, which manages the installation and upgrade of all Red Hat OpenShift platform components. It also enables you to run Kubernetes Operators on Red Hat OpenShift from Red Hat and third-party ISV partners.

Find out more about Red Hat OpenShift's extensive support for Operators on .

Does Red Hat OpenShift support Kubernetes Deployments?

Yes. Red Hat OpenShift supports Kubernetes Deployments for application deployment. We led the introduction of automated, rolling application deployments with DeploymentConfigs—these are still supported for backwards compatibility.

Does Red Hat OpenShift support Helm Charts?

Yes. Red Hat OpenShift has always enabled the use of Helm Charts for application deployments. Red Hat OpenShift 4 ships and supports the Helm 3 binaries as part of the installer for added convenience.

Does Red Hat OpenShift support Pod Security Policies (PSPs)?

Yes. PSPs are still considered beta in Red Hat OpenShift and upstream Kubernetes, but Red Hat OpenShift fully supports similar fine-grained authorization of pod creation and updates via Security Context Constraints (SCC). Red Hat OpenShift pioneered the concept of more secure application deployment policies with SCCs, which later became the basis for PSPs.[8]

Find out more about Red Hat OpenShift's additional security features on page 11.

Does Red Hat OpenShift support Kubernetes Ingress?

Yes. Red Hat OpenShift supports the use of standard Kubernetes Ingress for load balancing. We pioneered the concept of a fully integrated Kubernetes Ingress load balancer with Red Hat OpenShift Routes, which is also available as an option and provides additional capabilities.

Does Red Hat OpenShift support Prometheus?

Yes. Red Hat OpenShift ships and supports Prometheus for monitoring and Prometheus Alertmanager for alerts management.
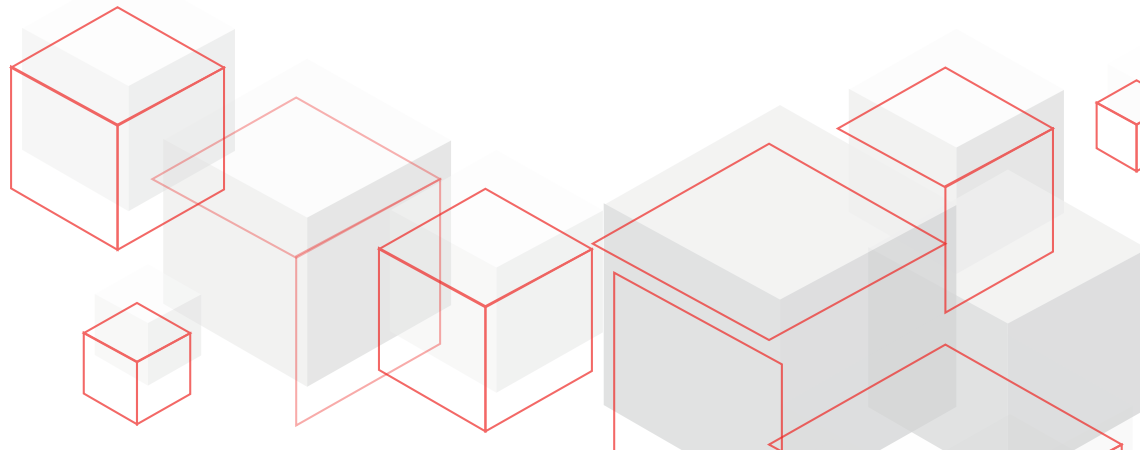
Does Red Hat OpenShift support Istio?

Yes. Red Hat OpenShift Service Mesh, based on Istio, is fully supported. This support enables you to reduce the burden on your DevOps team and successfully run a distributed microservice architecture. It provides a consistent way to connect, monitor, manage, and provide security for microservices. It includes components like Kiali for visualization, Jaeger for transaction tracing, and Prometheus for monitoring.

Find out more about Red Hat OpenShift's support for running microservices on page 9.

Does Red Hat OpenShift support Knative?

Yes. Red Hat OpenShift Serverless, based on Knative, is fully supported. This support enables serverless capabilities across hybrid, multicloud environments—unlike some cloud provider serverless offerings that tie you to their specific cloud.

Find out more about Red Hat OpenShift's support for the serverless model on page 9.

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8 *Block, Andrew and Raffaele Spazzoli. "Increasing security of Istio deployments by removing the need for privileged containers," Red Hat OpenShift blog, September 17, 2018.*

Does Red Hat OpenShift support Kubernetes Container Network Interface (CNI)?

Yes. Red Hat OpenShift supports Kubernetes CNI and allows you to integrate third-party networking plugins. It also includes a fully supported default Red Hat OpenShift software-defined network (SDN), based on Open vSwitch, providing networking multitenancy via network policies.

Red Hat was one of the earliest contributors to CNI[9] and is now working with SDN vendors to build certified Operators to manage the deployment, updates, and management of their SDN plugins.

Does Red Hat OpenShift support Kubernetes Container Storage Interface (CSI)?

Yes. Red Hat OpenShift supports the Kubernetes Container Storage Interface (CSI) for integrating different storage providers. It also supports in-tree Kubernetes storage drivers for various storage solutions. Red Hat was one of the early contributors to Kubernetes storage plugins and to the development of CSI, which is moving these plugins out of tree.[10]

Red Hat OpenShift Container Storage—based on Ceph®, Rook, and NooBaa—is for customers who are looking for container-native storage. We're also working with third-party storage providers to build certified Operators to manage the deployment, updating, and management of their plugins.

Kubernetes and Red Hat: A vital partnership.

Red Hat has a long track record with Kubernetes. We were one of the companies that launched the project, together with Google, in 2014.[11] From the start, Red Hat has promoted the ability of Kubernetes to work across hybrid and multicloud environments.

We've focused on enabling enterprise customers to deploy and manage their most critical applications. Being an active contributor to the open source community across a wide range of projects has been core to this objective.

In fact, Red Hat has consistently been in the top two contributors to Kubernetes.[12] Today, we employ some of the most prolific individual contributors—including two out of the top five.[13]

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9 GitHub. "*Container Network Interface,*" *Accessed September 8, 2020.*

10 *Red Hat Storage team. "Red Hat's latest contribution to the storage agenda in the container-driven datacenter of the future," Red Hat blog, November 9, 2015.*

11 *Red Hat blog. "Red Hat and Google collaborate on Kubernetes to manage Docker containers at scale," July 10, 2014.*

12 *Stackalytics. "Kubernetes commits by company," Accessed September 8, 2020.*

13 *Stackalytics. "Kubernetes commits by company," Accessed September 8, 2020. [See Clayton Coleman and David Eads.]*

Kubernetes, with more of what you need to be successful

Competitors sometimes say Red Hat OpenShift isn't Kubernetes. The truth is, Red Hat OpenShift is Kubernetes—but it's also so much more.

Kubernetes, and so much more

We call Red Hat OpenShift the Kubernetes platform for big ideas. That's because it helps you unlock the potential of Kubernetes so you can use it to transform your business.

Red Hat OpenShift has a more secure foundation, comprehensive features, and functionality that's developer-friendly. Whether you want to make existing application deployments more automated, or create something entirely new, you'll be able to do it quickly, efficiently, and with less risk.

Kubernetes is at the core of the Red Hat OpenShift platform, but to fully operationalize a Kubernetes environment, you will need additional capabilities—and significant expertise. A parallel is the Linux kernel. It's central to Linux servers, but you need more than just the Linux kernel to run Linux applications—you need a Linux platform distribution.

While Kubernetes is the core kernel, to run containerized applications across a distributed system environment, you need more than just Kubernetes. Ask anyone who has tried to deploy it on their own.

As a minimum, you'll need:

- A Linux platform distribution on which to run Kubernetes.
- Networking to connect all of your application services.
- An ingress load balancer to bring traffic into the Kubernetes cluster.
- Persistent storage to back any stateful application services.
- Monitoring and logging to ensure that the platform and your applications are running properly.
- Authentication and authorization to enable user access to the platform and more.

And these requirements are before you get to the actual applications you want to run and their runtimes and service dependencies—and how you will build, test, and deploy them.

Red Hat OpenShift's out-of-the-box solution to Kubernetes is a key reason why some of the biggest companies in the world choose Red Hat.[14]

Red Hat OpenShift provides a complete out-of-the-box solution that includes a stable Kubernetes engine with robust security and all of the integrated platform capabilities. This solution is what you'll need to run enterprise applications—from Red Hat and our certified partners, along with end-to-end support from a team of Kubernetes experts.

14 *Red Hat client data and Fortune Global 500 list for 2019.*

Red Hat OpenShift also offers...

...out-of-the-box installation.

Getting Kubernetes, and its required dependencies, up and running isn't a trivial task. Red Hat OpenShift makes things easier by providing a fully automated, operator-driven installer. This installer can provision and configure the required underlying compute infrastructure across various environments: cloud, virtual machines, and bare-metal.

It also includes operators for all core platform components, including Kubernetes itself, networking, storage, ingress, monitoring and logging, and more.

You don't have to use these operators, but they're ready for you if you need them. If you prefer, you can also use third-party solutions, such as plugging in a third-party logging service, storage, or SDN.

...the right tools for the job.

You might find that the more containers you have, the more you want. With so many to manage, you'll likely want ways to simplify building and securing your container images.

Red Hat OpenShift provides:

- A default registry to store your images.
- Image streams to automate and manage container updates.
- Integrated builds and CI/CD services that you can run on the platform or integrate with your own toolchains.
- Up-to-date base images built with security in mind on Red Hat Enterprise Linux to serve as building blocks for your applications.

"Red Hat OpenShift's source-to-image capabilities let us produce standardized, reusable images, improving both consistency and development speed." [15]

MSCHOLASTIC

YURIY DENYSOV
DEVOPS ENGINEER
SCHOLASTIC CORPORATION

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15 *Red Hat case study. "Scholastic develops applications faster with Red Hat OpenShift and AWS," 2019.*

...multicloud portability.

Wherever you want to deploy applications—your datacenter, public cloud, multicloud, or the edge—Red Hat OpenShift has you covered.

"The vast majority of enterprises (84%) are pursuing a multicloud strategy. In many cases, organizations have become hybrid cloud by default, simply because different groups adopt different cloud providers."[16]

Red Hat OpenShift provides a consistent platform that runs across multiple clouds, enables hybrid storage capabilities (with Red Hat OpenShift Container Storage), and lets you manage multiple clusters across multiple clouds (with Red Hat Advanced Cluster Management).

With Red Hat OpenShift's management tools, you can make data stored in different places appear as a single persistent repository. This capability can make it easier to provision additional storage on demand, enabling you to scale at speed.

...multitenancy, multicluster management support.

With most Kubernetes services, you're both the user and admin.[17] But what if you want to share that cluster with other users while controlling what they can do?

Red Hat OpenShift automates these tasks, reducing the time taken and the likelihood of errors.

Built-in support for multitenancy includes:

- Role-based access control (RBAC) and integration with your authentication and authorization systems like Active Directory.
- Management of user quotas on the cluster.
- Isolation of applications on a shared cluster with network policies.
- Management of multiple clusters from a single location.
- Enforcement of security policies and deployment of applications across clusters (with Red Hat Advanced Cluster Management for Kubernetes).

"What we've set out to do with Fabric and Red Hat OpenShift Container Platform is to democratize IT. We've given access to powerful technologies to every developer at the bank." [18]

Deutsche Bank

GLOBAL HEAD OF CLOUD, APPLICATION, AND INTEGRATION PLATFORMS DEUTSCHE BANK

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16 *Flexera. "RightScale 2019 State of the Cloud Report from Flexera," 2019.*

17 *Services like Amazon Elastic Kubernetes Service (EKS), Google Kubernetes Engine (GKE), and Azure Kubernetes Service (AKS) are targeted toward individual users who are both the administrators and users of the clusters they create.*

18 *Red Hat customer success story. "Deutsche Bank streamlines development platform, democratizes IT," Accessed September 8, 2020.*

…more freedom to work the way you choose.

Red Hat OpenShift is focused on meeting developers where they are. For some, that means helping them work with Kubernetes directly via the kubectl CLI and APIs. As the current co-leader of the Kubernetes CLI Special Interest Group (SIG),[19] Red Hat is not just enabling kubectl in Red Hat OpenShift, but actually powering its evolution upstream.

For others, it means providing higher-level abstractions through more developer-friendly CLIs, like odo, via:

- The Red Hat OpenShift developer console, in the browser.
- Integrated developer environments (IDEs) like Red Hat CodeReady Workspaces, powered by Eclipse Che.
- Other popular IDEs, like VSCode and Intellij, through plugins.

These optional interfaces enable developers to focus on their code and integrate with supporting services for builds, CI/CD, Red Hat OpenShift Service Mesh, Red Hat OpenShift Serverless, and more.

…an operating system (OS) you can trust.

Kubernetes depends on Linux. And Red Hat OpenShift includes the most deployed commercial Linux operating system in the public cloud, Red Hat Enterprise Linux.[20]

We fully support, maintain, and update CoreOS as part of the Red Hat OpenShift platform, freeing you from the work and risk associated with managing your OS and platform separately. Few competitors can make this claim, and Red Hat's advantage is that we can say it across bare-metal, virtual machines, and public cloud environments.

In addition, our trusted images provide a strong foundation for your applications. They align the user space with the underlying host kernel running on your Red Hat OpenShift Kubernetes worker nodes, provide security, and keep them up to date.

"We are shifting to work in agile, dedicated teams with a lot of autonomy. …We want to let other teams make their own choices within a framework. Red Hat OpenShift helps us do so." [21]

**GARBIS VAN OKURCHT
I.T. MANAGER
AMSTERDAM AIRPORT SCHIPHOL**

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19 *GitHub. "CLI Special Interest Group," Accessed September 8, 2020.*

20 *Red Hat press release. "More than 1,000 enterprises across the globe adopt Red Hat OpenShift Container Platform to power business applications," May 8, 2019.*

21 *Red Hat success story. "Amsterdam Airport Schiphol flies to the cloud with Red Hat," Accessed September 8, 2020.*

...built-in support for serverless applications.

Developers should be focused on creating applications, not provisioning and maintaining servers and other infrastructure. But you want to take advantage of the latest cloud-native development paradigms.

Red Hat OpenShift makes it easier to use the serverless model and automatically scale apps up or down, based on demand.

Red Hat OpenShift makes it easier for developers to deploy event-driven apps that can scale up or down based on demand—including down to zero when not in use. Red Hat OpenShift Serverless, based on Knative, is fully integrated and supported.

And Red Hat OpenShift makes it much easier to get started with serverless applications—either through the CLI or web console. Just tell Red Hat OpenShift to run the container serverless and it will do the hard work for you.

...improved microservices capabilities.

Managing communications and security between microservices can be difficult. With upstream Kubernetes, developers need to find and test their own solution. Red Hat OpenShift Service Mesh uses open source projects, like Istio and Kiali, to provide a consistent way to connect, monitor, manage, and provide security for microservices.

...upgrades without interruption.

Are you able to keep up with upgrades in upstream Kubernetes or manage the varying release and upgrade schedules of different Kubernetes services providers?

Red Hat OpenShift ensures that you have an up-to-date and consistent platform for your applications across all of your environments: datacenter, cloud, and edge.

Our automated, over-the-air updates use Kubernetes Operators and custom resource definitions (CRDs) to programmatically upgrade clusters without disturbing the running applications. Red Hat OpenShift also makes it possible to have disconnected cluster environments that can install updates locally without accessing the internet.

"Today, being able to deploy my solution to my customers, with the only limitation being how quickly I can code, is really life-changing for me as a data scientist." [22]

ExxonMobil

**AUDREY RESNIK
DATA SCIENTIST
EXXONMOBIL**

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22 *Red Hat Summit 2019, "ExxonMobil presentation," May 8, 2019.*

...longer lifecycles.

Red Hat OpenShift provides updates and bug fixes to Kubernetes and other components long after the upstream has moved on to the next release.[23] By backporting changes, including fixes for Common Vulnerabilities and Exposures (CVEs), Red Hat OpenShift helps ensure that your Kubernetes clusters are up to date so you can be confident that the applications running on them have the necessary security. It also helps to make upgrades seamless from one supported release to the next.

Because there is no rebasing, the list of open bugs, and their resolutions, is well documented. And every additional change to the source tree is tracked and understood before being applied, adding to stability.

...enhanced support for Operators.

Operators are a powerful tool to help build, maintain, and manage the life cycle of cloud-native applications on Kubernetes. CoreOS, now part of Red Hat, pioneered the concept of Kubernetes Operators.[24]

Red Hat launched both the Operator Framework and the vendor-independent OperatorHub.io, which enables the Kubernetes user community to find Operators and contribute.

Red Hat OpenShift 4 is built around Operators. They power the installation and upgrade all of Red Hat OpenShift's platform components. The embedded OperatorHub provides access to a library of certified Operators from Red Hat and our ISV partners to build your applications. Certified Operators from Red Hat partners may also be available in the Red Hat Marketplace.

Red Hat OpenShift also includes the Operator SDK to build new Operators, and Operator Lifecycle Manager to install updates and provide day-2 management of Operator-backed services.

"Even developers who had no previous experience with Red Hat OpenShift or other container platforms noticed how easy it was to build code. ...We can see the change in the team's agility and efficiency." [25]

**ANDERSON AGAPITO
FORMER I.T. MANAGER
ELO SERVIÇOS**

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23 Red Hat OpenShift supported versions vs. community supported versions.

24 Phillips, Brandon. "Introducing Operators: Putting operational knowledge into software," CoreOS blog, November 3, 2016.

25 Red Hat case study. "Elo provides on-demand infrastructure with Red Hat," 2018.

Kubernetes, with additional security

Sometimes you'll hear competitors give examples of Red Hat OpenShift blocking a container "from the wild" that another Kubernetes distribution would run.

That's Red Hat. We provide security by default.

Red Hat understands the importance of providing security for your containers. We also understand that getting security right is hard, even for the most experienced developers. Many of our contributions to the Kubernetes project have been to add enterprise-grade security features. With Red Hat OpenShift, these are turned on by default. Red Hat OpenShift also comes with a host of additional security features.

Red Hat OpenShift comes with...

...timely updates.

If there's a problem with upstream Kubernetes, you could be waiting a while for a fix. It could mean waiting for someone else to fix it in the upstream and then for it to be backported to all previous versions.

We push fixes to upstream Kubernetes so the whole community has access to them. But as we're able to support those fixes in more releases and more places than upstream Kubernetes, Red Hat OpenShift customers don't have to wait.

Red Hat employs many leading Kubernetes contributors. These contributors have both the knowledge and ecosystem credentials to create bug reports upstream and backport fixes.

...context constraints, as standard.

Just because another Kubernetes solution lets you execute a container as root, it doesn't mean you should. Red Hat OpenShift ships with Secure Context Constraints (SCC) built in. This functionality enables default execution policies, like blocking the execution of containers with root privileges on the cluster.

SCC has been a feature of Red Hat OpenShift since version 3, and it's the basis for Pod Security Policies (PSPs). At the time of this writing, PSPs are still considered beta in upstream Kubernetes.[26] And even vendors that allow you to use PSPs often have remarkably permissive default policies.

You can switch off any of Red Hat OpenShift's additional built-in security functions, but Red Hat thinks that security should come configured as a default—don't you?

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26 *Kubernetes. "[Pod Security Policies]()," Accessed September 8, 2020.*

...improved access control, by default.

Red Hat OpenShift makes permissions management more efficient. With it, admins can easily delegate the appropriate level of access and authorization to different types of users.

For example, admins can be given full privileges to manage the whole cluster, while developers can be restricted to their own namespaces and applications. Red Hat helped develop RBAC in upstream Kubernetes, and it's been a default feature since the first Kubernetes Red Hat OpenShift release.

With upstream Kubernetes, RBAC is an optional feature. With Red Hat OpenShift, it's the default. It's also key to achieving and maintaining compliance with standards like GDPR, PCI DSS, and HIPAA.[27]

Red Hat OpenShift also makes integrating with other systems and third-party apps easier. Integration with Lightweight Directory Access Protocol (LDAP) and Active Directory (AD) is built in and straightforward to set up. And Red Hat OpenShift's built-in OAuth server can be integrated with a variety of identity providers.

As a result, users can authenticate against a cluster and their authorization can be determined based on their role. Roles can be defined for different types of users and integrated with your LDAP groups. Authorization can be delegated to other users without sharing passwords, and to service accounts, components can directly access the API with added security—without a regular user account.

In addition, you can monitor which tokens are making requests, giving insight into how services are being used. Of course, access tokens can be revoked if it's suspected that they've been compromised.

You could try to do this with other Kubernetes solutions, but with Red Hat OpenShift's built-in access control features, it's easier.

"We wanted to be able to quickly take an idea to production while meeting the security and regulatory standards of the industry. To achieve this, we needed not only innovative technology but a strategic partner that could execute globally and understand our business needs." [28]

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27 *General Data Production Regulation (GDPR), Payment Card Industry Data Security Standard (PCI DSS), Health Insurance Portability and Accountability Act (HIPAA).*

28 *Red Hat press release. "Deutsche Bank activates digital transformation with Red Hat." May 6, 2019.*

…supported and trusted images.
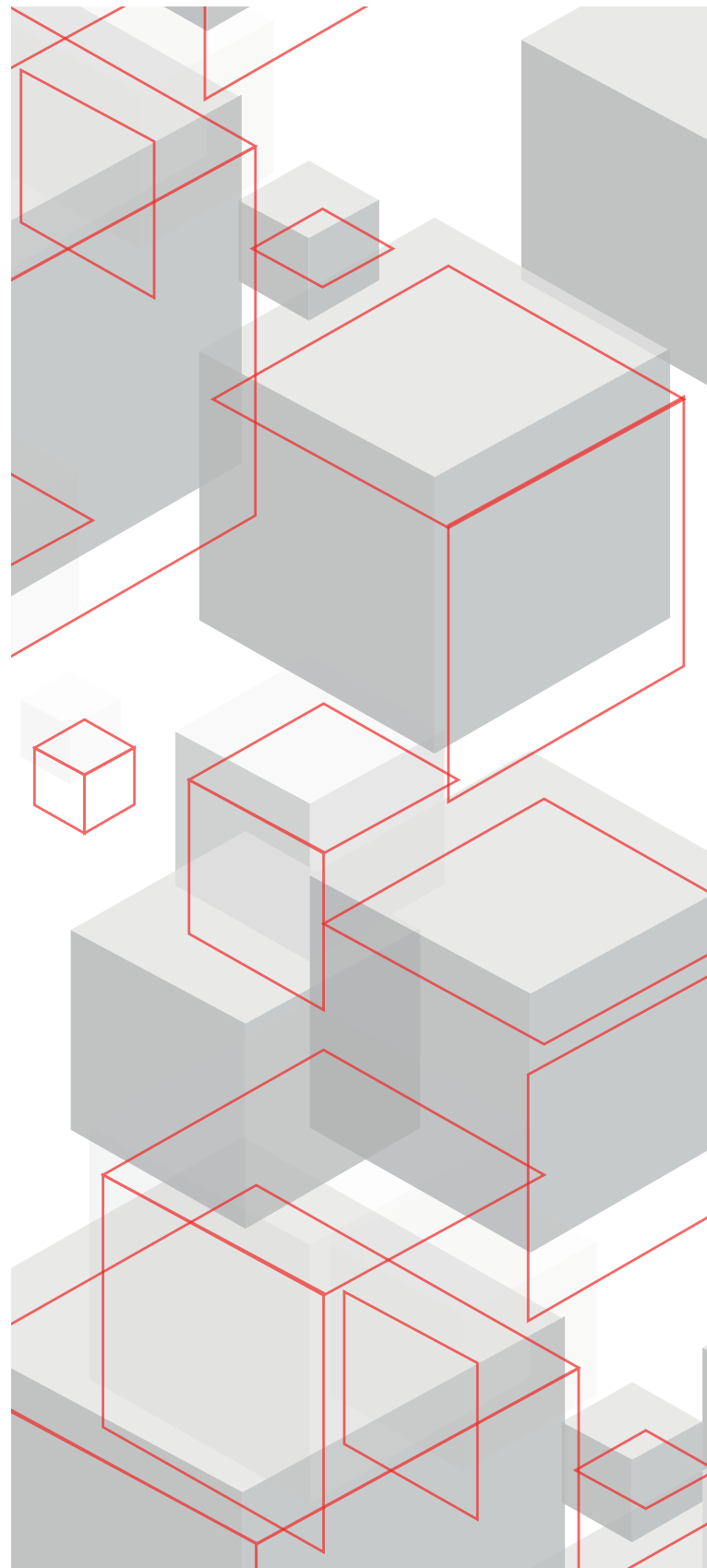
Red Hat Container Catalog offers tested and certified container images from Red Hat and our ISV partners. We also provide support for Red Hat Universal Base Images (UBIs) or Red Hat Enterprise Linux UBIs on which ISVs build.

In addition, we regularly monitor Red Hat container images for new vulnerabilities, and we publish a continually updated health index. When we identify problems, these are prioritized, with fixes developed as quickly as possible. We then push security updates and container rebuilds to the public Red Hat Container Catalog registry.

"With Red Hat, we built a development and production environment that can handle even the most critical application, with higher availability and lower operational costs." [29]

**NILCEU ROMERO SILVA
CHIEF INFORMATION OFFICER
COPEL TELECOM**

29 *Red Hat press release. "Red Hat enhances cloud-native security, application consistency with latest version of Red Hat OpenShift Container Platform." August 9, 2017.*

Kubernetes, with an eye to the future

Red Hat OpenShift has a long track record with Kubernetes. But history only gets you so far. We're working hard to make sure that Red Hat OpenShift delivers what you need today—and continues to be ready for the future.

Red Hat OpenShift is continuing to help build the future of Kubernetes...

...by investing in people and technology.

Red Hat is a top contributor of many of Kubernetes' key features, components, and related container technologies.[30] And we are continuously investing in Red Hat OpenShift to add the features that developers and sysadmins request.

Many talented people working on Red Hat OpenShift have joined through an acquisition—see right for some of the companies that now call Red Hat home.

...by playing an active role.

As well as contributing code ourselves, we're actively collaborating with the rest of the community to improve Kubernetes and support emerging projects.

Red Hat has six years of experience running Kubernetes in the cloud and supporting organizations using containers in production. Today, we're working with the cloud-native community to push the boundaries of what containers and Kubernetes can do, from serverless computing to machine learning.

2010: Development starts
Red Hat started development on container-based Red Hat OpenShift Platform-as-a-Service (PaaS)

2012: V1, a first
Red Hat OpenShift Enterprise 1.0: Red Hat launched first fully open enterprise private/hybrid PaaS

2014: Kubernetes is born
Red Hat joined with Google to power Docker and launch the Kubernetes project

2015: V3, another first
Red Hat OpenShift Container Platform 3: the first open, hybrid enterprise Kubernetes platform

2016: Ansible
Red Hat acquired Ansible®, bringing additional automation capabilities to Red Hat OpenShift

2018: CoreOS
Red Hat acquired CoreOS, bringing new capabilities to Red Hat OpenShift

2019: V4 and IBM
Red Hat OpenShift Container Platform 4: the first open, operator-based enterprise Kubernetes platform

Red Hat became part of IBM

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30 *Cloud Native Computing Foundation. "Kubernetes companies statistics." Accessed September 17, 2020.*

...by taking the lead.

Red Hat OpenShift continues to innovate and add the functionality our command- and code-writing users request. Red Hat OpenShift Pipelines is a great example of this innovation.

While Jenkins has been a popular choice as a CI engine, it was designed before "cloud-native" became the norm. As a result, it can be difficult to run in a containerized environment, like Kubernetes, and doesn't provide all the features today's teams need.

Red Hat OpenShift Pipelines offers cloud-native CI/CD, allowing you to automate the build, testing, and deployment of applications across on-premise and public cloud platforms.

To address this need, we've developed Red Hat OpenShift Pipelines, a new cloud-native, Kubernetes-style CI/CD pipeline based on the Tekton project. It allows teams to build delivery pipelines that they can own. As a result, teams can have complete life-cycle control of their microservices, without having to rely on central teams to maintain and manage a CI server, plugins, and configurations.

"Red Hat was among the first enterprise providers to support containers and Kubernetes, and this has fueled continued adoption of Red Hat OpenShift. Just as it did with Linux, Red Hat is providing the integration, certification, and assurance that enterprise customers require when they use open source software such as containers or Kubernetes management and orchestration."

451 Research®

**JAY LYMAN
PRINCIPAL ANALYST, CLOUD
NATIVE AND DEVOPS
451 RESEARCH**

Red Hat

Kubernetes, with a solid team at your back

Still wondering why you should pick Red Hat OpenShift
over upstream Kubernetes or another platform?
Red Hat provides additional functionality—and support.

Red Hat...

...can support more of your needs.

We have a wide-ranging portfolio to support
your needs. Whether you want to expand your
storage offering, introduce more automation,
simplify your management, or even reconsider
virtualization, we have the products and
services to help.

You can choose between self-hosted
(Red Hat OpenShift Container Platform),
managed (Amazon Red Hat OpenShift,
Red Hat OpenShift Dedicated, Microsoft
Azure Red Hat OpenShift, or Red Hat
OpenShift on IBM Cloud), or mix and match
to suit your organization's needs. And because
all of these products are backed by our team
of experts, you can rest assured that your
business is in safe hands.

...plays an active role in the community.

The Red Hat commitment to the Kubernetes
community is substantial. We actively
participate in working groups and engage with
numerous related CNCF community projects.
Our own OpenShift Commons, which has over
500 member organizations, is where Red Hat
OpenShift users, partners, and contributors
from related communities go to collaborate
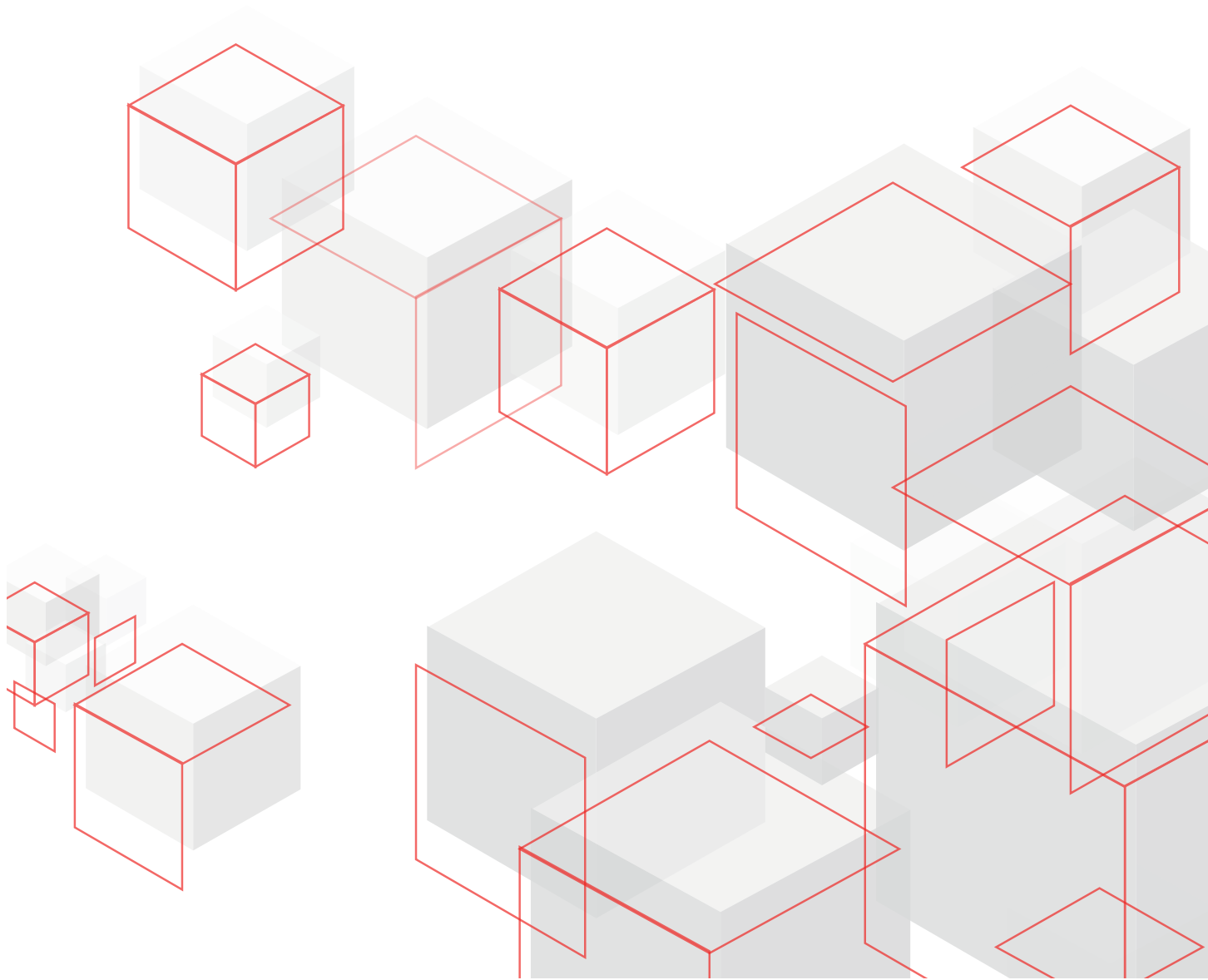and work together.

Through OpenShift Commons, we provide
extensive training resources and hold frequent
events to bring members together. It's open to
all community participants: users, operators,
enterprises, startups, non-profits, educational
institutions, partners, and service providers.

...is here to stay.

Red Hat is now part of IBM, one of the
industry's most established names. Red Hat's
open hybrid cloud technologies are now paired
with the scale and depth of IBM's innovation
and industry expertise, and sales leadership in
more than 175 countries. IBM and Red Hat are
better together.

Red Hat remains committed to investing in
maintaining and strengthening its portfolio,
including Red Hat OpenShift.

We are confident that Red Hat OpenShift will
be around in years to come—gaining features
and functionality each year.

Get started now

Find out more about Red Hat OpenShift: openshift.com

Try Red Hat OpenShift at no cost: openshift.com/try

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About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. A trusted adviser to the Fortune 500, Red Hat provides award-winning support, training and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners and communities, helping organizations grow, transform and prepare for the digital future.