Red Hat OpenShift Certification

**Key benefits of
Red Hat OpenShift
Certification**

• Certification extends
Kubernetes orchestration
to reliably streamline and
automate installation, updates,
back-ups, and management of
applications and infrastructure
services.

• Two choices to Kubernetes
enable your software:
Operators and Helm charts.

• Runs an entire platform and
applications in an autonomous
manner, scaling clusters easily,
consistently, and automatically.

• Allows users to manage appli-
cations using Kubernetes APIs,
exposing only the relevant
options for the application.

Deploying on Red Hat® OpenShift® Container Platform lets you take advantage of Kubernetes and
containers to manage and scale your software deployments. Building and certifying your Operator
or Helm chart for Red Hat OpenShift helps you to incorporate Red Hat recommended practices to
manage your cloud-native applications on Kubernetes. Certification can also help differentiate your
product and company, driving awareness through the Red Hat ecosystem catalog and the OpenShift
console, with the option of selling through the Red Hat Marketplace.

Introduction to Red Hat OpenShift Certification

Red Hat OpenShift is a Kubernetes and container orchestration platform. It uses Kubernetes-
native technologies (Operators and Helm) to deliver software that is simple to install, configure, and
upgrade. It also determines if your application is running correctly according to your instructions and
conforming to best practices. Red Hat OpenShift allows you to manage your application's advanced
life-cycle features (reconfigure, backup, and heal) utilizing core and supplementary components and
the host operating system, and then scale the cluster—easily, consistently, and automatically.

Without Operators and Helm charts, updating and maintaining containerized applications for
security and scalability is a considerable challenge and is dependent on the experience of each
operational user. For specific use cases like storage and networking, partners can also obtain Red Hat
Certification Badge designations for their software.

Why Kubernetes?

Kubernetes (also known as k8s or "kube") has become the new application server, an open source
container orchestration platform that automates many of the manual processes involved in deploying,
managing, and scaling containerized applications. In other words, you can cluster together groups of
hosts running Linux containers, and Kubernetes helps you (and your customers) easily and
efficiently manage those clusters. Kubernetes clusters can span hosts across on-premise, public,
private, or hybrid clouds, making it an ideal platform for hosting cloud-native applications.

But like in any environment, manually managing applications can be challenging as complex-
ity increases over time due to configuration drift. By encoding management best practices into
Kubernetes Operators or Helm charts, your customers can apply your application expertise now and
throughout your application's life cycle. As a result, support incidents and costs decrease and
customer satisfaction increases—and you differentiate your product and company.

Certify on Red Hat OpenShift

Red Hat OpenShift certification for Operators and Red Hat OpenShift certification for Helm charts
are self-service offerings, with an easy, step-by-step process to verify the functionality of your
software and its dependencies on Red Hat OpenShift. The certification workflows consist of
certifying the containers used by the application and verifying the content and format of the
Operator or Helm chart. This entire process is completed within the self-service framework located
in Red Hat Partner Connect portal, and complements partners' own functional tests on Red Hat
OpenShift.

Red Hat

Key benefits of Red Hat OpenShift Certification

- Red Hat OpenShift is enterprise grade like the Red Hat Enterprise Linux platform it's built on.

- Standardizes and simplifies installation and upgrades of the complete software stack, from operating system to application.

- Codifies and packages best practices and business workflows, with consistency across hybrid cloud platforms.

Red Hat OpenShift

Certified Technology
Helm chart

Red Hat OpenShift

Certified Technology
Operator

Kubernetes-enabled software offers customers a broad range of applications and infrastructure that can be managed in a consistent manner, across both private and public clouds. Red Hat OpenShift Certified Operators and Helm charts are backed by collaborative support between Red Hat and part- ners, extending trust from the container platform to the application stack.

Helm or Operators: how to choose

How you automate your applications depends on whether you only need installation and basic updates (either Helm or Operators), or more advanced day-2 capabilities such as life-cycle management, workload analysis and metrics, and full auto-scaling with Operators. Both options will Kubernetes enable your applications.

In summary, Operators offer more capabilities for full day-2 automation, while Helm charts are easier to build for installation and simple upgrades.

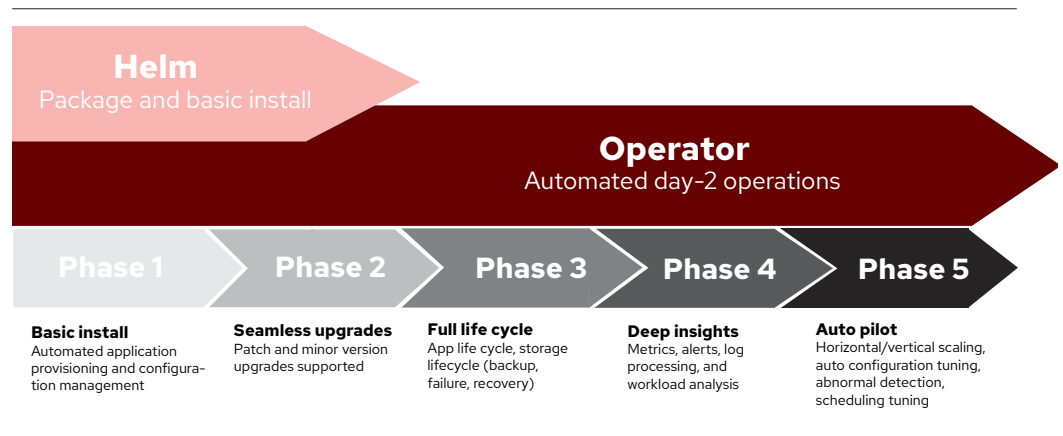**Table 1. A comparison of Operator and Helm features for day-1 and day-2 capabilities.**

	Helm	Operator
Packaging	✔	✔
App installation	✔	✔
App update (Kubernetes manifests)	✔	✔
App upgrade (data migration, adaption, etc.)		✔
Backup and recovery		
Workload and log analysis		✔
Intelligent scaling		
Auto tuning		✔
Type of service	Unmanaged	Managed

Red Hat OpenShift Certification creates a trusted Kubernetes-enabled ecosystem of enterprise applications with consistent packaging, deployment, and life-cycle management across all Red Hat OpenShift footprints.

Red Hat OpenShift Operator Certification

This maturity model (Figure 1) shows five phases of engagement/participation/involvement. Your participation can range from simplified application installation to enhanced life-cycle features or to full optimization with auto configuration and tuning. Phases 3-5 represent capabilities for day-2 automation—uniquely available through Operators. The certification process is the same regardless of which automation level you're providing.

Figure 1. Application automation maturity model.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Helm Package and basic install					
Operator Automated day-2 operations					
	Basic install Automated application provisioning and configuration management	**Seamless upgrades** Patch and minor version upgrades supported	**Full life cycle** App life cycle, storage lifecycle (backup, failure, recovery)	**Deep insights** Metrics, alerts, log processing, and workload analysis	**Auto pilot** Horizontal/vertical scaling, auto configuration tuning, abnormal detection, scheduling tuning

Specialized operators—OpenShift Certification Badges

Red Hat designates OpenShift Certification Badges to Kubernetes Operators that are built and tested for specific cloud-native use cases—like networking and storage—and also comply with industry-standard specifications or domain best practices. With a Red Hat OpenShift Certification Badge designation, you're confirming that your solution is both Kubernetes enabled and utilizes specific Kubernetes APIs for the respective use cases. Current OpenShift Certification Badges are:

- Container Storage Interface (CSI)—for providing and supporting a block/file persistent storage backend for Red Hat OpenShift.
- Container Networking Interface (CNI)—for delivery of networking services through a pluggable framework.
- Cloud-Native Network Functions (CNF)—for implementation of telco functions deployed as containers.

Red Hat OpenShift Certification for Helm charts

Helm charts are Kubernetes YAML configuration files combined into a single package that can be deployed on Kubernetes clusters. Red Hat OpenShift Certification for Helm charts provides customer assurance that an application is Kubernetes enabled with automation capabilities for installation and simple upgrades.

Promote your products

Partner products that are Red Hat certified can be promoted with jointly produced go-to-market collateral and displayed in the Red Hat Ecosystem Catalog.

Red Hat Marketplace

Helping mutual customers deploy on any cloud shouldn't mean they have to use a different purchasing channel for each component. Red Hat Marketplace lets you sell OpenShift enabled enterprise software for any cloud, public or private, with broad exposure to enterprise customers looking for cloud-native solutions. All Red Hat certified Operators are eligible for participation and Helm charts will be added in the future. See the Red Hat Marketplace website for the list of available countries and terms and conditions.

Table 2: Solution for customer pain points.

Customer pain point	How Red Hat certification differentiates your product and company
Every app has its own unique requirements and custom features, and requires specific and advanced skills for managing and operating it. Add support for hybrid cloud on top of that and adoption costs go up even more.	When your software is Kubernetes enabled and certified, customers immediately gain your expertise to manage your application because best practices are built into the Operator or Helm chart and all managed by a common Red Hat OpenShift interface.
Uncertainty about interoperability between applications and the container platform.	Red Hat collaborates with you to verify that your software is Kubernetes enabled to work on Red Hat OpenShift—out of the box.
Integrated solutions can cause gaps in support coverage for components in the stack.	Collaborative support is delivered between Red Hat and partners through the Technical Support Alliance Network (TSANet) for platform and application components.
Platform and application updates can introduce issues or incompatibilities.	Certified products are tested on new releases of Red Hat OpenShift to identify upgrade issues before customers are impacted. Operators can incorporate partner expertise on how to handle application upgrades.
Tracking and remediating security vulnerability is time consuming and costly.	Red Hat certification service continuously scans for known vulnerabilities in Red Hat components. The Red Hat Build Service can be used to automate image updates as soon as a vulnerability is identified. This means faster time-to-delivery and your developers won't spend time updating images. And the customer environment stays secure.

Red Hat OpenShift Certification partner benefits

Faster development and testing

You'll be supplied tools and resources to help you encode operational best practices for Openshift Kubernetes enablement. When building an Operator, you have resources to build the operations (OpenShift Operator Framework SDK), test application changes inside your CI/CD workflow, and automate your updates. Building your Helm charts is straightforward using YAML configuration files.

Enhanced application automation

Customers can take advantage of your Kubernetes-enabled operational expertise and use common Red Hat OpenShift tools across private and public clouds to reduce their adoption and life-cycle management costs.

Assured quality and compatibility

Red Hat certified containers used in Operators or Helm charts are continuously monitored and verified for interoperability and safety, with fast turnaround for updates.

Lower costs, better governance, and verified interoperability

Using Red Hat OpenShift Certified products improves time to value by relying on components that have been pre-tested on Red Hat OpenShift, thus expediting deployment and configuration for both customers and partners.

For software providers, certified Operators or Helm charts embed operational expertise for DevOps teams, reducing IT costs and risk when managing applications at scale. For customers, certified Operators or Helm charts reduce configuration drift and support costs by adhering to operational best practices defined by the software provider.

Red Hat global, enterprise-grade support

Red Hat OpenShift Certification is backed by collaborative support between Red Hat and technology partners, extending trust from the container platform to the application stack. Customers don't have to worry about gaps in support coverage for components in the stack, including Kubernetes and:

- Foundation component, Red Hat Enterprise Linux® with Red Hat Universal Base Image, is fully supported by Red Hat when used with Red Hat OpenShift.

- Application components are supported by Red Hat and partners through TSANet.

Greater market awareness

Red Hat OpenShift Certified products gain broader exposure to enterprise customers by their presence in the OpenShift console, where they can be easily identified and deployed by Red Hat OpenShift users.

Certification offers technology partners access to additional global go-to-market benefits and resources through the Red Hat Connect Partner program, like:

- Rights to use the Red Hat certified technology logos.

- Co-branded marketing materials.

- Joint promotional campaigns.

And, you can sell your Red Hat OpenShift Certified software on the Red Hat Marketplace to reach even more customers.

Resources

- Get started with Red Hat Operator Certification.

- Developer Sandbox for Red Hat OpenShift.

- As a Red Hat partner, get a no-cost Red Hat OpenShift development subscription.

- Install Red Hat OpenShift on your laptop with CodeReady Containers (for Red Hat OpenShift 4).

- Develop on CodeReady Workspaces.

- Get the OpenShift Operator SDK.

- Sell your Operator-based solutions on the Red Hat Marketplace.

About Red Hat
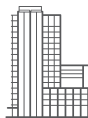
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