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 applications 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 complexity 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.
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 partners, 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. |
|-----------------------------------------------|-----------------|---------------------------|
| Packaging | Helm | Operator |
| ✔ | ✔ | ✔ |
| 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.

**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.**

<table>
<thead>
<tr>
<th>Customer pain point</th>
<th>How Red Hat certification differentiates your product and company</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>Uncertainty about interoperability between applications and the container platform.</td>
<td>Red Hat collaborates with you to verify that your software is Kubernetes enabled to work on Red Hat OpenShift—out of the box.</td>
</tr>
<tr>
<td>Integrated solutions can cause gaps in support coverage for components in the stack.</td>
<td>Collaborative support is delivered between Red Hat and partners through the Technical Support Alliance Network (TSANet) for platform and application components.</td>
</tr>
<tr>
<td>Platform and application updates can introduce issues or incompatibilities.</td>
<td>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.</td>
</tr>
<tr>
<td>Tracking and remediating security vulnerability is time consuming and costly.</td>
<td>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.</td>
</tr>
</tbody>
</table>
**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](https://www.redhat.com).
- [Developer Sandbox](https://www.redhat.com) for Red Hat OpenShift.
- As a Red Hat partner, get a no-cost [Red Hat OpenShift development subscription](https://www.redhat.com).
- Install Red Hat OpenShift on your laptop with [CodeReady Containers](https://www.redhat.com) (for Red Hat OpenShift 4).
- Develop on [CodeReady Workspaces](https://www.redhat.com).
- Get the [OpenShift Operator SDK](https://www.redhat.com).
- Sell your Operator-based solutions on the [Red Hat Marketplace](https://www.redhat.com).

---

**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 integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.