Red Hat OpenShift 4

Datasheet

Red Hat OpenShift Container Platform

A hybrid cloud platform open to any application, team, or infrastructure

Key benefits:

- Integrated platform includes container host, Kubernetes, and application life-cycle management using your choice of infrastructure.
- Operators provide an agile DevOps workflow.
- Secure, validated container content and services from a wide partner ecosystem.
- Faster application development cycles and more frequent software deployments.
- Simple installation and upgrades, even in air-gapped environments.
- Application portability with lower operational cost across hybrid cloud, multicloud, and edge footprints.
- Consistent development experience across the application life cycle.

Product overview

Red Hat® OpenShift® Container Platform is the industry-leading hybrid cloud platform powered by containers and Kubernetes. Using OpenShift Container Platform simplifies and accelerates the development, delivery, and lifecycle management of a hybrid mix of applications, consistently anywhere across on-premise, public clouds, and edge. Whether modernizing existing applications, developing new cloud-native applications, integrating data analytics and artificial intelligence (AI) and machine learning (ML) capabilities to achieve data driven insights, or integrating software from independent software vendors (ISVs) and cloud providers, OpenShift Container Platform is designed to deliver continuous innovation and speed at any scale, helping organizations to be ready for today and build for the future.

OpenShift Container Platform

OpenShift Container Platform is self-managed and includes Red Hat Enterprise Linux® operating system, over-the-air updates, container runtime, networking, ingress, monitoring, logging, container registry, authentication, and authorization solutions. These components are tested together for unified operations on a complete Kubernetes platform spanning every cloud.

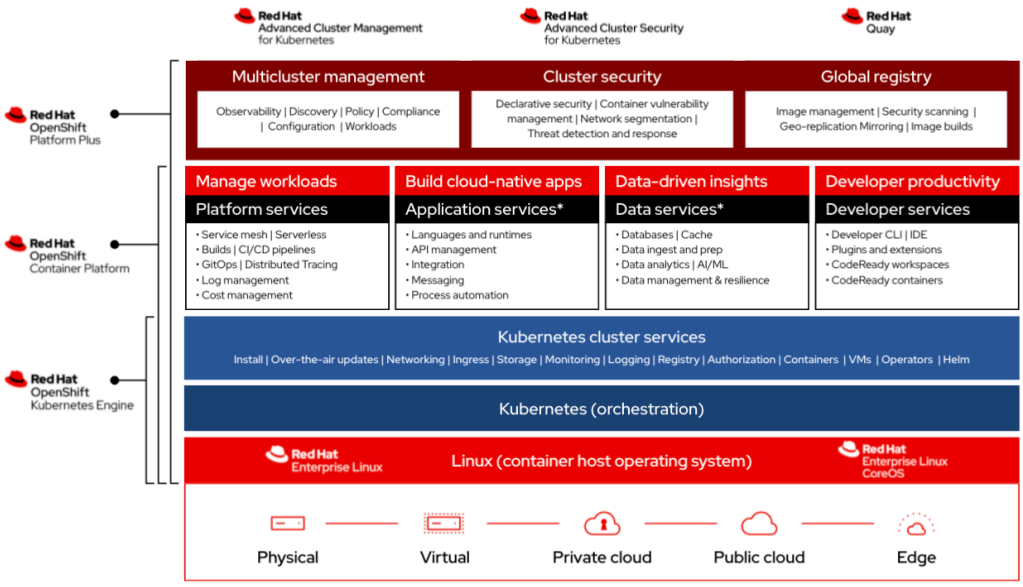

Figure 1. OpenShift Container Platform capabilities and complementary Red Hat products

** Red Hat OpenShift includes supported runtimes for popular languages, frameworks, and databases. Additional capabilities listed are from the Red Hat Application Services and Red Hat Data Services portfolios.*

To learn more about other Red Hat OpenShift offerings, visit https://www.openshift.com/products/container-platform

Advanced capabilities

OpenShift Container Platform supports multiple advanced capabilities.

- Automated Day 1 and Day 2 operations
  - **Operators** provide automated installation, upgrades, and life-cycle management for applications, ensuring applications are running correctly and making necessary changes to comply with the desired configuration.
  - **Helm** brings a Kubernetes-native package manager that developers can use to package their applications and define how to package, deploy, and configure them. It can also automate Day 1 tasks and a limited number of Day 2 operations.
- **Red Hat OpenShift Service Mesh** provides a uniform way to manage, connect, and observe applications as managing and security between services becomes more challenging.
- **Red Hat OpenShift Serverless** allows an application to use compute resources and automatically scale up or down based on use, driven on demand from some event sources.
- **Red Hat OpenShift Pipelines** brings a Kubernetes-native continuous integration and continuous delivery (CI/CD) solution on Tekton that provides a streamlined user experience through the Red Hat OpenShift console.
- **Red Hat OpenShift GitOps** is built from the open source Argo CD project and lets IT teams implement GitOps workflows for cluster configuration and application delivery for faster, more secure, and scalable software development.
- **Red Hat OpenShift Virtualization** brings virtual machines to OpenShift to modernize existing applications or run them alongside containers, and serverless, in a Kubernetes-native architecture.
- **Edge computing** includes 3-node clusters and remote worker nodes, and single nodes to provide organizations full Kubernetes capabilities in a smaller footprint.
- Red Hat OpenShift supports diverse workloads and provides consistency across applications with a common platform to accelerate the deployment of intelligent applications across a hybrid cloud environment.
  - Supported workloads include:
    - Databases.
    - Data analytics.
    - AI and ML software, programming languages, and frameworks.
    - Logging and monitoring.
    - Web and application servers.
    - Message broker services.

For more information about Red Hat OpenShift, visit openshift.com/try.

Feature	B
Scalability	Applications running on OpenShift Container Platform can scale to thousands of instances across hundreds of nodes in seconds.
Multicluster management	Consolidated views of clusters and the use of Kubernetes technologies offer a consistent management layer both on-site and in public clouds.
Persistent storage	OpenShift Container Platform supports a broad spectrum of enterprise storage solutions, including Red Hat OpenShift Data Foundation and our ecosystem (e.g., DellEMC, Portworx, NetApp) for running both stateful and stateless applications.
Open source standards	OpenShift Container Platform incorporates Open Containers Initiative (OCI)/docker-formatted containers and Cloud Native Computing Foundation (CNCF)-certified Kubernetes for container orchestration, in addition to other open source technologies.
Container portability	Container images built on the OCI industry standard ensure portability between developer workstations and production OpenShift Container Platform environments.
3-node clusters	Access all of the capabilities of a complete Kubernetes platform with a highly available, smaller footprint for edge architectures comprising both supervisor and worker nodes.
Remote worker nodes	Place single worker nodes in remote locations where centralized supervisor nodes can then manage at a larger site, such as a core or regional datacenter—especially important for remote edge locations that have space-constrained environments and limited power or cooling capabilities.
Single nodes	Combines control and worker capabilities to address edge use cases with small physical environments, low bandwidth, or disconnected sites.
Automated installation and upgrades	Automated installation and over-the-air platform upgrades are supported in cloud with Amazon Web Services, Google Cloud Platform, IBM Cloud, and Microsoft Azure, and on-premise using vSphere, Red Hat OpenStack® Platform, OpenShift Virtualization, or bare metal. Services used from the OperatorHub can be deployed fully configured and upgradable with a single operation.
Automation	Streamlined and automated container and application builds, deployments, scaling, health management, and more are standard.

Feature	Benefit
Robust ecosystem	An expanding ecosystem of partners provides a wide variety of integrations. Third parties deliver additional storage and network providers, integrated development environment (IDE), CI, and integrations, ISV solutions, and more.
Self-service provisioning	Developers can create applications on demand from the tools they use most, while operations retain full control over the entire environment.
Multilanguage support	Developers can use various languages, frameworks, and databases on the same platform.
Integrated CI/CD pipelines	Developers reduce manual deployment work to deploy higher-quality software for CI and automated tests.
User interfaces	Developers have direct access to a rich set of command-line tools, a multidevice web console, and Eclipse-based IDEs.
Source-to-image deployment	OpenShift Container Platform provides a toolkit and workflow for producing ready-to-run images by injecting source code into a container and letting the container prepare that source code for execution.

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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.

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