RED HAT® OPENSHIFT Container Platform

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FASTER INNOVATION WITH DEVOPS AND RED HAT OPENSHIFT

DATASHEET

BENEFITS OF DEVOPS

- Faster application development life cycles
- Increased developer productivity
- Reduced IT time per application developed
- Lower costs through greater efficiencies
- Improved service quality and reliability
- Reduced risk of deployments
- Faster adaptation to market changes
- Competitive advantage through speed to market
- Improved customer satisfaction
- Higher return on investment (ROI) with more applications in less time

DEVOPS—ADDRESSING TODAY'S DIGITAL BUSINESS

Immediate access to information across multiple channels has resulted in an era of fast-paced, user-driven demand and the need for greater speed in delivering products and services. In tandem with this is the ability of software applications to respond in shorter, more frequent, and faster development and delivery cycles. Together, these things have led to the emergence of DevOps practices as a key way to accelerate digital business innovation.

DevOps is an approach to culture, automation, and a platform designed to increase the speed and flexibility with which new features and services are delivered. Modern application platforms based on container technology and microservices are critical to DevOps practices, helping deliver secure and innovative software services at the speed of digital business.

IMPLEMENTING DEVOPS WITH RED HAT OPENSHIFT

Red Hat® OpenShift is an application container platform that helps development and IT operations teams modernize existing enterprise applications and deliver new applications by accelerating development and delivery processes. It is built on proven open source technologies including Linux® containers and Kubernetes. Linux containers allow the packaging and isolation of applications with their entire runtime environment. Because they help reduce conflicts between the development and operations teams by separating areas of responsibility, containers are an essential part of DevOps. Kubernetes, an open source project and part of Cloud-Native Computing Foundation (CNCF), is the industry standard for orchestrating Linux containers.

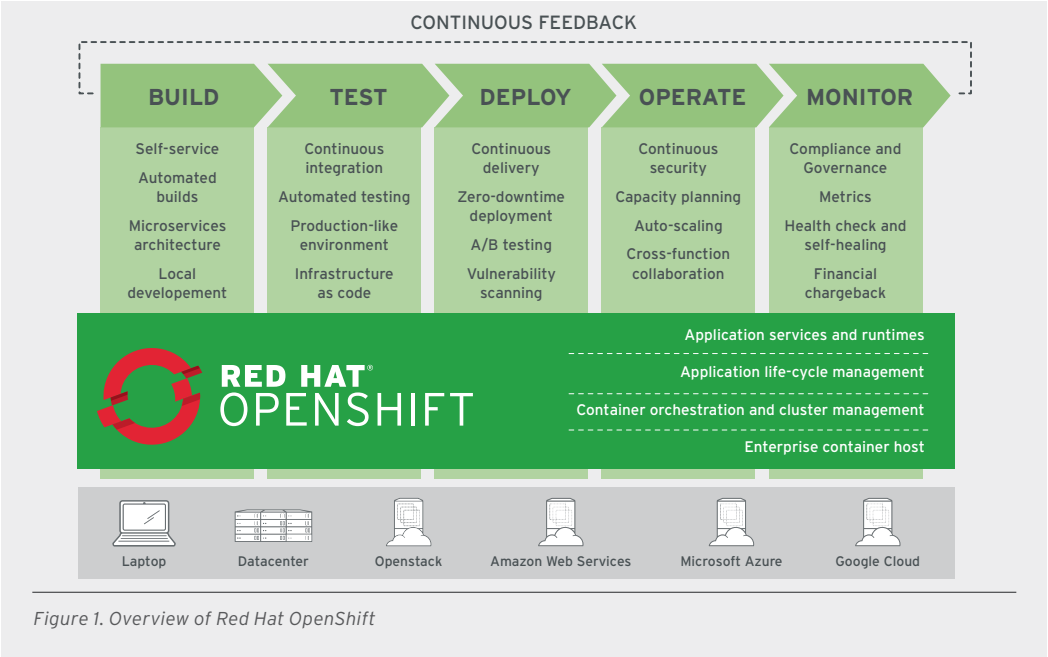

Figure 1. Overview of Red Hat OpenShift

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Red Hat OpenShift offers development and operations teams a common platform and set of tools as a foundation for building, deploying, and managing containerized applications on any infrastructure—on-premise or in public, private, or hybrid clouds.

STAGES	RED HAT OPENSHIFT FEATURES
BUILD	**Self-service:** Developers can quickly and easily create applications on demand using their preferred tools without having to wait for IT operations to set up the deployment environment. At the same time, operations still maintains full control over the entire environment. **Automated builds:** Streamlined and automated application builds allow developers to build containers automatically from application source code and binaries in a secure and repeatable manner. **Microservices:** Red Hat OpenShift Application Runtimes offers a set of certified and supported microservices runtimes, including Spring Boot, WildFly Swarm, Vert.x, and Node.js on OpenShift for building cloud-native applications in addition to built-in support for service discovery, load balancing, single sign-on, and more. **Local development:** Develop and deploy applications locally using the same tools that are used in test and production.
TEST	**Continuous integration (CI):** Built-in support for Jenkins CI server lets developers write, test, and integrate code automatically for every change. **Automated testing:** On-demand deployments allow complex, automated testing scenarios by provisioning and testing applications with all their dependencies whenever needed. **Production-like environment:** Red Hat OpenShift provides an identical technology stack from local development environment to production, which ensures applications are tested and verified on the exact same version of middleware, language runtime, and operating system . **Infrastructure as code:** Every aspect of the application and environment is described in a declarative manner that can be versioned and controlled as code in a version control system.
OPERATE	**Continuous delivery:** Built-in support for pipelines with integration points to existing tools lets teams automate every step of application delivery while taking advantage of their existing process. **Zero-downtime deployment:** Zero-downtime deployments using rolling updates, blue-green deployments, canary releases, and more allow teams to both remove downtime from deployments and deploy frequently in production during normal working hours. **A/B testing:** Full control over application traffic allows teams to serve users multiple versions of their services simultaneously. **Vulnerability scanning:** Red Hat OpenShift Container Platform includes Red Hat CloudForms, which provides continuous vulnerability scanning for container images and prevents containers with malicious security issues from running on your infrastructure.

STAGES	RED HAT OPENSHIFT FEATURES
DEPLOY	**Continuous security:** Proactive security patches are provided for Red Hat-certified containers, which can automatically trigger rebuilding and deploying relevant application containers. **Capacity planning:** Red Hat CloudForms tracks resource utilization trends to inform capacity and what-if scenario planning. **Auto-scaling:** Scaling applications running on Red Hat OpenShift is automated through auto-scaling containers based on application load. **Cross-function collaboration:** Granular access control capabilities allow collaboration between development, quality assurance, security, and operations teams by bringing visibility to production environments while operations teams keep control of the actions performed.
MONITOR	**Compliance and governance:** Automatically enforces policy across all containers and environments with support from comprehensive insights and detailed logging. **Metrics:** Container metrics provide full visibility into how applications resource usage changes over time. **Health checks and self-healing:** Health probes allow automatic identification of application issues, allowing quick repair action. **Financial chargeback:** Red Hat CloudForms collects container capacity and utilization data and generates financial reports to provide visibility into container usage across teams.

All of these features allow faster innovation by supporting many different aspects and practices pertaining to DevOps. Additionally, automated build and deployments, continuous integration/continuous delivery (CI/CD), and build and container metrics in Red Hat OpenShift provide a rapid flow of information and continuous feedback from the build and deployment process back to the development teams. This lets developers detect and rectify anomalies immediately, which is far more effective than fixing them later in production where fixes impact cost and service delivery more critically.

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RED HAT CONSULTING—A FASTER PATH TO DEVOPS

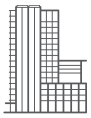
Introducing DevOps processes can be challenging. Red Hat Consulting helps organizations become more efficient with solutions that incorporate DevOps and continuous delivery.

Our consultants have hands-on experience with global clients that have implemented DevOps practices and have used OpenShift technologies to support their innovation and modernization strategies. With a complete DevOps strategy, your organization can begin the culture, process, and platform changes needed to meet the demands of digital transformation. The result is an IT organization that can deliver business innovation faster.

Red Hat Consulting offers:

Discovery Sessions: In a Discovery Session, Red Hat experts come to you for a complimentary half-day session. You'll describe the business drivers behind your IT automation, your software development life cycles, your operational procedures, your management approaches and tooling, and Red Hat will provide recommendations, a solution architecture, and our vision for container platforms to help you transform your IT.

Open Innovation Labs: Open Innovation Labs is an intensive, highly focused residency for three to six developers to learn how to build applications the Red Hat way. In an environment designed to accelerate innovation, we'll help your team make use of innovative open source technologies to rapidly build prototypes, experience DevOps, and adopt agile workflows. For more information, visit red.ht/labs.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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