

How containers can benefit your business

A fundamental change to the application landscape



Introduction

Applications are the lifeblood of any modern business. As such, having the right applications and infrastructure in place at the right time—secured and ready to scale—can make or break critical strategic initiatives. As enterprises look for agile ways to meet these needs and embrace new business opportunities in a cloud-centric world, containers and container organization are emerging as highly desirable technologies.

Built for the hybrid cloud, containers represent a fundamental opportunity to move beyond traditional, slow, and cost-intensive ways of developing and deploying applications toward truly programmable infrastructure without arbitrary limitations. Modern hyperscale public clouds redefine possibilities for applications and infrastructure, yielding highly available, resilient, and massively scalable services.

Meet the pace of business: How containers can accelerate digital transformation

Container technology can play a vital role by speeding digital transformation as IT departments strive to match the pace of business. Containers make it easy to package applications, and they have fast startup and teardown times because they are portable and lightweight—attributes that make them ideal for encapsulating cloud-native applications. Containers also enable a wide range of technologies and approaches, including automation, orchestration, microservices, CI/CD, and immutable infrastructure. Containers advance digital transformation efforts by:

- **Allowing application modernization on your terms.** Organizations need to be able to modernize their existing applications by “lifting and shifting” monolithic applications to the cloud. Containers provide this ability while offering the opportunity to refactor pieces of the application as microservices for additional performance or scalability.
- **Speeding up application delivery.** IT teams need to develop applications and infrastructure as quickly as possible while retaining security and software quality. As developers move toward agile methods and DevOps, containers facilitate microservices architectures for fast software pipelines and automated testing, to reduce errors in manual release processes.
- **Implementing cloud-native development.** More than just hosting apps in the cloud, cloud-native app development can employ virtually every modern method of application development and deployment. Microservices, agile development, CI/CD, DevOps, and other cloud-native technologies and techniques help organizations innovate and develop new applications quickly to remain competitive.
- **Facilitating cloud-scale automation.** Moving to cloud-scale implies scaling applications, systems, and platforms without technical limitations. Together with the cloud, container orchestration works to deploy and manage distributed cloud-native applications. Fully automated orchestration patterns for common scenarios minimize human error and allow operation at cloud scale with resilience.

The container advantage
Accelerate efforts towards
digital transformation and
application modernization.

Recognize improved developer
productivity, increased revenue,
enhanced security, and less
downtime from manual errors.
Plus, see an excellent return on
investment (ROI).

Increase innovation while
reducing time to market for
application development.

Transform existing legacy
applications from monoliths to
microservices by “lifting and
shifting” them to the cloud.

Automate deployment across
public, private, or hybrid clouds,
as business needs dictate.

Red Hat was named a leader in a field of 8 multicloud container vendors in The Forrester Wave™: Multicloud Container Development Platforms 2020 Q3 report.¹

Measurable gains: The business benefits of containerization

Because every new technology transition comes with costs, challenges, and a learning curve, no technology is worth the investment if it does not promise benefits to the business. Those who deploy containers can experience some significant and measurable gains, including:

- **Quicker time to market.** Containers can empower development teams to deliver new applications and features more frequently, and in less time, including across cloud environments.
- **Increased revenue and business.** With containers, organizations can react to business opportunities more quickly, delivering higher quality services across disparate business locations.
- **Consolidated management.** Containers reduce the amount of IT staff time required to manage, support, and secure IT environments.
- **Lowered costs.** Moving to cloud and cloud-native development can shrink infrastructure and development costs by reducing the need to purchase and maintain servers and other hardware.

Containers: A closer look

Containers allow you to package and isolate applications with their entire runtime environment, which includes all of the files necessary to run. While this might sound like a simple technical innovation, it fundamentally changes the application landscape. With containers, applications can be moved between environments (e.g., dev, test, production) while retaining full functionality. Containerized applications can be deployed equally on private, public, or hybrid cloud infrastructure. Containers also play an essential role in IT security. By building security into the container pipeline and defending your infrastructure, container-based applications are reliable, scalable, and trusted.

Why faster innovation requires better tools

While many organizations say they want to innovate with their applications and services, a great number are stuck spending most of their resources maintaining their existing legacy application infrastructure. This leaves innovation as an opportunity cost. While virtualization and virtualized applications have improved infrastructure utilization through server consolidation, containers, orchestration, and cloud infrastructure take these gains further, bringing speed, agility, and portability to app development and deployment.

A container platform for the enterprise: OpenShift as a Service

As powerful and popular as containers are, successful enterprise container deployments require more than containers and Kubernetes technology. What's needed is a complete, robust, and proven Kubernetes-based environment that meets the needs of cloud-native applications in an enterprise setting. Red Hat® OpenShift®—a Kubernetes container platform with full-stack automated operations to manage hybrid cloud and multicloud deployments in the enterprise—is designed to meet these needs.

The Red Hat OpenShift environment (depicted in Figure 2) is optimized to provide the best IT operations experience combined with the best in developer productivity—across any infrastructure. The platform includes Red Hat Enterprise Linux® CoreOS, single-step installation, and increased resilience and performance, all in a developer-friendly framework.

¹ "The Forrester Wave™: Multicloud Container Development Platforms, Q3 2020," 2020.

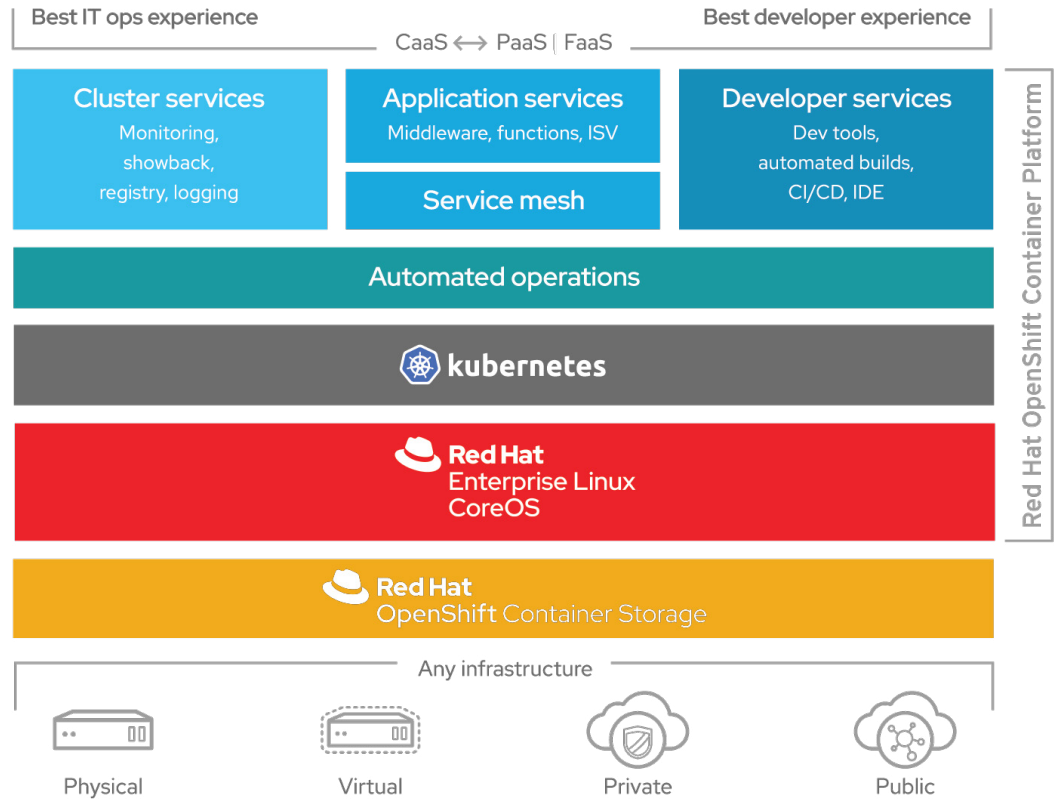


Figure 2. Red Hat OpenShift delivers a complete container platform for the enterprise.

Red Hat OpenShift provides:

- **Enterprise Kubernetes.** Aligned with its enterprise focus, Red Hat OpenShift leads with a security-focused and fully supported Kubernetes platform.
- **A consistent cloud experience, everywhere.** Red Hat OpenShift consists of an enterprise-grade Linux operating system along with container runtime, networking, monitoring, registry, and authentication and authorization solutions. Automated life-cycle management yields increased security, tailored operation solutions, easy-to-manage cluster operations, and application portability.
- **On-demand application stacks.** Red Hat OpenShift lets you develop apps with the languages and tools you want while deploying through self-service container images. Use pre-created quickstart application images (Java®, Node.js, .NET, Ruby, Python, PHP, and more), quickstart application templates of your favorite application frameworks (Apache HTTP Server, Jenkins, CakePHP, Dancer, Ruby on Rails), Red Hat Middleware as cloud-based services in containers, and classic relational and modern NoSQL databases.

Containers and Kubernetes: Here to stay

Container and Kubernetes technologies provide new ways to develop and deploy applications in cloud environments, wherever they exist. Here to stay, these technologies already accelerate digital transformation and application modernization efforts across diverse applications for a wide range of organizations. By innovating and packaging containers and Kubernetes for the enterprise, Red Hat OpenShift can automate the provisioning, management, and scaling of applications, so you can focus on writing the code for your next big idea.

About HCL Technologies

HCL Technologies is a next-generation global technology company that helps enterprises reimagine their businesses for the digital age. Our technology products and services are built on four decades of innovation, with a world-renowned management philosophy, a strong culture of invention and risk-taking, and a relentless focus on customer relationships. HCL also takes pride in its many diversity, social responsibility, sustainability, and education initiatives. Through its worldwide network of R&D facilities and co-innovation labs, global delivery capabilities, and over 208,000+ "Ideapreneurs" across 52 countries, HCL delivers holistic services across industry verticals to leading enterprises, including 250 of the Fortune 500 and 650 of the Global 2000.

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.

