

Red Hat OpenShift for IBM zSystems and IBM LinuxONE

Red Hat OpenShift

A hybrid cloud platform open to any app, team, or infrastructure.

Key benefits

- ▶ Integrated platform includes container host, Kubernetes, and application life cycle management using your choice of infrastructure
- ▶ Security-focused, validated container content and services from a wide partner ecosystem
- ▶ Application portability with lower operational cost across hybrid cloud, multicloud, and edge footprints

IBM zSystems and LinuxONE

Key benefits

- ▶ Helps IT organizations optimize for sustainability
- ▶ Hardware cryptographic support and key protection
- ▶ Increased efficiency from colocation with core data
- ▶ IBM zSystems and LinuxONE are designed for high availability with maximum uptime

Overview

Organizations face the challenge of delivering extraordinary customer experiences by developing new applications, while modernizing existing applications to speed up their cloud-native journey. For developers and IT operations teams, this requires flexibility and agility in order to develop and deploy applications across multiple infrastructures, from on-premise to a public cloud. Red Hat® OpenShift® on IBM zSystems and LinuxONE empowers organizations to accelerate transformation with greater flexibility and agility through integrated tooling and a security-focused and resilient foundation for cloud-native development.

Red Hat OpenShift is a trusted Kubernetes enterprise platform that supports modern, hybrid-cloud application development and provides a consistent foundation for applications anywhere, across physical, virtual, private and public cloud environments. Red Hat OpenShift and IBM Cloud Paks helps teams to develop, deploy and orchestrate cloud-native applications consistently, while taking advantage of the security, reliability, scalability, and reduced carbon footprint of IBM zSystems and LinuxONE infrastructure.

Application development and modernization

The Red Hat OpenShift Container Platform subscription includes several capabilities that are enabled for IBM zSystems and LinuxONE:

- ▶ **Red Hat OpenShift Service Mesh**, built on Istio, provides a uniform way to connect, manage, and observe microservices-based applications as managing and security between services become more difficult.
- ▶ **Red Hat OpenShift Pipelines**, a cloud-native, continuous integration and continuous delivery (CI/CD) solution based on Kubernetes resources.
- ▶ **Red Hat OpenShift Serverless**, a serverless cloud computing model providing developers with a modern, cloud-native app dev stack for hybrid clouds. Serverless lets developers focus on their code without worrying about the infrastructure.
- ▶ **Red Hat CodeReady Workspaces** is a collaborative Kubernetes-native solution for rapid application development that delivers a consistent, protected, and zero-configuration development environment on Red Hat OpenShift.
- ▶ **Red Hat OpenShift Do (odo)** is a command-line interface tool for writing and deploying applications on OpenShift and Kubernetes, allowing developers to focus on what's most important to them—code.

Security-rich and resilient foundation

Red Hat OpenShift on IBM zSystems and LinuxONE allows businesses to integrate and modernize their applications with a firm foundation built for security, resiliency, and availability. IBM zSystems and LinuxONE prevent security threats and protect data across a hybrid cloud environment with certified multitenant workload isolation and a transparent, pervasive encryption with optimized performance. IBM zSystems and LinuxONE also protects the integrity and confidentiality of data

with Crypto Express adapters (HSM) designed to meet strong security requirements of FIPS 140-2 Level 4, have quantum-safe cryptography embedded, and support compliance to regulatory guidelines efficiently and productively. The unique combination of OpenShift container security plus the IBM zSystems and LinuxONE cryptographic hardware creates a highly differentiated, security-rich solution.

Flexibility and scalability

As organizations modernize existing applications to cloud-native architectures, it is essential to have the flexibility to manage and deploy the entire application portfolio across different infrastructures to scale. Red Hat OpenShift is a complete platform that includes a full complement of features to build and deploy containerized software on any infrastructure. Together with IBM zSystems and LinuxONE, organizations can scale on a single system with the ability to add capacity on demand and grow processing with minimal impact on energy usage, floor space, and staffing. Teams can take advantage of the high flexibility through dynamic resource sharing and reconfiguration and continue to deliver excellent customer experiences with ultra low latency and large volume data serving and transaction processing.

Efficiency for colocated workloads

Red Hat OpenShift on IBM zSystems and LinuxONE also optimizes latency, deployment, and cost through co-located containerized applications with existing data and applications. Cloud-native applications can be located close to existing workloads to improve throughput and reduce latency, empowering organizations to integrate and modernize without disrupting current services along their cloud-native journey. Teams can centrally manage workloads using a single platform that provides consistency across environments.

Infrastructure and installation

Kernel-based Virtual Machine (KVM) is a fully supported virtualization option on IBM zSystems and LinuxONE for OpenShift users, alongside the traditional IBM z/VM hypervisor. This is especially beneficial for users who can reuse their KVM skills, either when migrating onto IBM zSystems or LinuxONE from an x86 based infrastructure, integrating new containerized applications, or when modernizing colocated applications.

Running [user provisioned infrastructure \(UPI\)](#) installs of Red Hat OpenShift using KVM via libvirt on IBM zSystems and LinuxONE are supported. For environments provisioned using IBM Cloud Infrastructure Center, which provides the Infrastructure-as-a-Service (IaaS) layer on IBM zSystems and LinuxONE, the [platform-agnostic installer](#) should be used.

To learn more about Red Hat OpenShift visit: <https://www.openshift.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 develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.