Red Hat
OpenShift
Virtualization Engine

Red Hat OpenShift Virtualization Engine

Cost-efficient, flexible virtualization for modern organizations

Learn more about how you can migrate, deploy, and manage VMs exclusively with Red Hat OpenShift Virtualization Engine.

Have additional questions about Red Hat OpenShift Virtualization Engine?

Read the FAQ.

Red Hat® OpenShift® Virtualization Engine is a virtualization offering focused solely on simplifying the deployment and management of virtual machines (VMs). OpenShift Virtualization Engine reduces unnecessary overhead and complexity to deliver the scalability and reliability enterprises may require for standalone virtualization, virtualization migration, or high-density workloads.

Virtualization, simplified

OpenShift Virtualization Engine includes the same core virtualization functionality (Red Hat OpenShift Virtualization) as all Red Hat OpenShift editions including Red Hat OpenShift Container Platform and Red Hat OpenShift Platform Plus. OpenShift Virtualization Engine is deployed and managed using the same processes and tools as bare-metal deployments of OpenShift, including supported bare-metal services like Amazon Web Services (AWS) bare-metal instances, but focuses exclusively on VMs. As your organization's needs evolve, you can explore other Red Hat OpenShift editions with containerization and modernization capabilities.

Backed by decades of leadership in open source innovation and trusted support from Red Hat, OpenShift Virtualization Engine can be further enhanced by a global partner ecosystem of complementary technologies, including backup, storage, and networking. Whether you are managing critical VM-based workloads or scaling your infrastructure, Red Hat delivers the proven performance and flexibility to help you build your virtualized environment, your way.

OpenShift Virtualization Engine is optimized for bare-metal servers, so you can make the most out of your infrastructure in a limited space. Support for per-node licensing allows organizations to take advantage of modern high-core servers, increasing node density by requiring less physical space, and improving cost efficiency by reducing the number of required subscriptions. This straightforward licensing model for bare-metal deployments retains the flexibility to add virtual clusters using core-based subscriptions. This approach ensures that organizations only pay for what they need, empowering them to scale their virtualized environments cost-effectively.

Consistency across virtualized environments

OpenShift Virtualization Engine is an edition of Red Hat OpenShift tailored for hosting and running VMs. It uses the assisted installer, agent-based installer, installer-provisioned infrastructure, and user-provisioned infrastructure methods for deploying bare-metal clusters, as well as the familiar set of OpenShift operators for adding cluster functionality. OpenShift Virtualization Engine is designed for virtualization use cases so you can get all the features you need, without paying for those that you do not.

Additional features and capabilities of Red Hat OpenShift Virtualization Engine are detailed in Table 1.

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Table 1. Included features

Feature	Benefit
Console-based virtualization management	A tailored virtualization console focuses on the components that are most important to virtualization administrators and users.
High availability for VMs	Includes native Red Hat OpenShift functionality for node fencing and workload recovery.
Resource distribution	Use the descheduler and eviction policies to adjust cluster resources and avoid contention by rescheduling pods to more suitable nodes.
Storage consumption analysis and management	The Container Storage Interface (CSI) paradigm gives administrators per-disk granularity for storage features and functions, such as snapshots and clones.
Host network configurability	Host network configurability using the Kubernetes NMState operator to apply network configuration using labels and selectors to identify which nodes need what configuration automatically.
VM connectivity	Use Open vSwitch (OVS) to connect a virtual local area network (VLAN) and other external networks and the Red Hat OpenShift software-defined network, Open Virtual Networking (OVN)-Kubernetes, for intra-cluster communication.
Global connectivity rules management	Network policy, at both the per-VM and project level, allows administrators to enforce global connectivity rules at the platform level, while also allowing VM administrators to define and manage their own rules.
Monitoring and logging	Red Hat OpenShift's workload monitoring and cluster logging features allow administrator teams to view, assess, and address issues using native dashboards and integrated tools.

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Explore next steps

- **Read and learn:** Learn more about how OpenShift Virtualization Engine simplifies virtualization for your enterprise. Download the "15 reasons to adopt Red Hat OpenShift Virtualization" e-book.
- **Show and tell:** Come and join us and get hands-on time with OpenShift virtualization solutions at one of our Red Hat OpenShift Virtualization Roadshows.
- **Try and interact:** Click through a high-level demonstration on migrating VMs to OpenShift Virtualization.

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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.

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