Red Hat OpenShift Virtualization Engine

Cost-efficient, flexible virtualization for modern organizations

Red Hat OpenShift Virtualization Engine:

- Offers a Virtualization Engine solution to deploy, manage, and scale virtual machines exclusively.
- Integrates with key Red Hat solutions like Red Hat Ansible Automation Platform and Red Hat Advanced Cluster Management for Virtualization for VM automation and management at scale.
- Extends its value with the Red Hat partner ecosystem.
- Provides a clear path to modernize and use containerization functionality when needed.

Increasing virtualization costs cause uncertainty

The virtualization market has faced significant changes in recent years, resulting in uncertainty. Many organizations are facing rising subscription costs, vendor lock-in, and lack of innovation opportunities with their existing virtualization provider.

Because of this, many are looking for an alternative platform to host their virtual machines (VMs) and satisfy immediate virtual machine requirements in a cost-effective way. While doing so, they may also consider modernization capabilities of what a new platform could bring later down the line so that they don't have to go through another evaluation and VM migration process once those demands arise. Many are looking for a platform that can alleviate short term VM needs, while preparing for an innovative future to satisfy business goals.

Streamlined virtualization solution that fits the bill

Virtualization, simplified

Red Hat® OpenShift® Virtualization Engine provides the proven virtualization functionality of Red Hat OpenShift to deploy, manage, and scale VMs exclusively. Unlike other OpenShift editions that integrate virtualization with containerized workloads, OpenShift Virtualization Engine is designed solely for VM management, providing a streamlined, cost-effective solution for organizations focused on traditional virtualization without requiring containerization capabilities. As VMs remain a critical tool in IT infrastructure, OpenShift Virtualization Engine offers a focused approach to VM management at a reduced price point to meet users where they are in their virtualization journey.

Red Hat OpenShift Virtualization Engine is able to run on on-premise hardware that supports Red Hat Enterprise Linux®, and on supported bare-metal cloud services including Amazon Web Services (AWS) bare-metal instances. Through a straightforward licensing model for bare-metal deployments, OpenShift Virtualization Engine offers organizations the virtualization essentials with the flexibility to expand toward containerization offerings when ready. Support for 128 cores per bare-metal socket pair allows organizations to take advantage of modern, high-core servers. This increases node density by requiring less physical space, and improves cost efficiency by reducing the number of required subscriptions.

	Red Hat OpenShift Virtualization Engine	Red Hat OpenShift Kubernetes Engine	Red Hat OpenShift Container Platform	Red Hat OpenShift Platform Plus
Virtual machine workloads Migrate, manage, and deploy virtual machines	✓	✓	✓	✓
Enterprise Kubernetes for container applications Build, deploy, and run containerized applications		✓	✓	✓
Comprehensive application platform Full set of operations and developer services and tools			✓	✓
Management and security at scale Complete platform for accelerating app development and app modernization				✓

Figure 1. Red Hat OpenShift editions capability chart

The capability chart showcases the full set of features and functionality of all the Red Hat OpenShift editions. For OpenShift Virtualization Engine specifically, users can benefit from a variety of features focused solely on the virtualization experience, including the following.

- **Ease of VM migration:** With the included migration toolkit for virtualization (MTV), users can create and execute on migration plans to effectively migrate VMs at scale to Red Hat OpenShift. MTV offers all the tools needed to migrate VMs from available source providers including Red Hat Virtualization, VMware, OpenStack®, vSphere-compatible OVA, and Red Hat OpenShift.
- **User workload monitoring by namespaces:** Designed for multitenant virtualization environments with automated failover and host remediation, user workload monitoring allows, by default, configuration of fencing agent remediation. This allows a more rapid transition to take place during a node failure scenario and lets VMs reschedule to available nodes quickly.
- **Enhanced VM platform logging:** With enhanced platform logging, VM administrators can visualize and collect logs from all of the VMs they are entitled to manage across their entire deployment. This can be further enhanced by making use of the Red Hat multicluster management tool specific for virtualization, Advanced Cluster Management for Virtualization, and Grafana to visualize the logs and telemetry from VMs deployed on managed clusters.
- **Automated provisioning of VMs with OpenShift GitOps:** Users have the ability to automate the deployment of VMs as code from the Advanced Cluster Management for Virtualization console with included GitOps functionality. Up until now, this feature was exclusive to containerization capabilities found in Red Hat OpenShift Container Platform. With OpenShift Virtualization Engine, users are now able to benefit from automated deployments of VMs to meet their immediate virtualization needs.

For an enhanced user experience, OpenShift Virtualization Engine offers a dedicated virtualization administrator view within the web-based management UI. This tailored interface provides virtualization-focused administrators with an intuitive environment to manage VMs, monitor performance, and perform routine tasks.

Optimize VM performance with the Red Hat portfolio

Automate VM migration and day-to-day tasks

To accelerate productivity, OpenShift Virtualization Engine integrates with key Red Hat tools and partners to deliver a complete automation solution. With Red Hat Ansible® Automation Platform, IT teams can automate tasks to free up time and resources.

Ansible Automation Platform uses known tools for automation, reducing the number of manual tasks required to perform large scale-operations, such as migrations and common administrative operations. When paired with the included migration toolkit for virtualization, Ansible Automation Platform uses the infrastructure as code (IaC) or configuration as code (CaC) methodologies so users can address pre- and post-processing needs, while replacing repetitive and manual tasks with automated workflows (such as inventorying all existing and replacement hardware, networks, VM introspection, and cluster deployment).

In addition to migration at scale, Ansible Automation Platform can automate Day 2 operations within OpenShift Virtualization Engine. Activities such as compliance, patching, and configuration management can be automated to support the entire VM lifecycle. Organizations can improve speed and efficiency of IT operations when using Ansible Automation Platform in combination with OpenShift Virtualization Engine.

Reduce operational overhead with centralized management

For a more unified approach of virtual machine management, Red Hat Advanced Cluster Management for Virtualization works exclusively with OpenShift Virtualization Engine to help users centralize VM lifecycles. This solution offers a cost-effective way to bring a consistent management platform for VM tasks such as VM provisioning, monitoring, and day-to-day compliance.

With this integration, clusters and applications can be centrally managed across a diverse VM landscape, with preconfigured governance policies to be applied consistently. Users can reduce complexity by managing their VMs in a single, central console regardless of where they reside—in the datacenter, public cloud, or edge.

Complete your solution with the partner ecosystem

As well as integrating with these key solutions, OpenShift Virtualization Engine works with the partner ecosystem to help your organization extend its benefits, without vendor lock-in. With capabilities across storage, backup and disaster recovery, networking, and services solutions, the Red Hat partner ecosystem has what users need to scale to meet modern IT needs. The partner ecosystem can be used to streamline VM migration needs across the migration journey.

It is important to note that OpenShift Virtualization Engine integrates with the same partners as OpenShift Virtualization, the included virtualization functionality found across all Red Hat OpenShift editions. This means that while OpenShift Virtualization Engine only supports virtualized workloads of end user applications, it can run containerized-based infrastructure workloads with partner integrations. Check out the subscription guide to learn more.

Preparing for a modern future

As organizations' needs evolve, so will its IT infrastructure. Modernization is a key consideration when choosing a home for workloads and both immediate and future needs were considered when designing the entitlements of OpenShift Virtualization Engine. This edition of Red Hat OpenShift offers the focused, cost-effective platform needed for VMs with straightforward upgrade options for innovative opportunities when they arise.

Different Red Hat OpenShift editions like Red Hat OpenShift Container Platform and Red Hat OpenShift Platform Plus offer the familiar set of Red Hat OpenShift tools found in OpenShift Virtualization Engine, with the added benefit of additional application modernization functionality. Application features such as serverless, pipelines, service mesh, and the ability to host

container-based user applications offer a more expansive feature set when considering modern, cloud-native applications. With the ability to manage containers and VMs side-by-side on a single platform, Red Hat OpenShift Virtualization allows organizations to grow with the demands of the market without having to reevaluate their entire platform.

Move to Red Hat OpenShift Virtualization Engine with confidence

Review the OpenShift Virtualization Engine documentation for more information.

- Read more about OpenShift Virtualization Engine for your VMs with our documentation and blog.
- Make a plan to migrate your VMs away from your traditional virtualization provider with Red Hat Consulting through the Virtualization Migration Assessment.
- Learn how to manage and monitor your VMs with Advanced Cluster Management for Virtualization.
- Watch how to migrate your VMs at scale with the migration toolkit for virtualization and Ansible Automation Platform.

About Red Hat

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