



Migrate and manage virtual machines with Red Hat and Cisco



Speed virtual machine migration and deployment

Red Hat and Cisco offer modular, validated solutions for virtual machine and container workloads.

- ▶ Migrate virtual machines to a modern application platform.
- ▶ Deploy and manage virtual machines and containers on a unified foundation.
- ▶ Simplify application modernization, deployment, and management.

Modern IT organizations still rely on virtual machines

Virtualization technologies are essential to modern datacenter operations, helping businesses reduce costs, improve resiliency, enhance efficiency, and meet sustainability goals. However, as IT complexity increases and virtualization solutions and offerings evolve, organizations must regularly reassess their virtualization strategies in response to emerging challenges. For example:

- ▶ Modernizing virtual machine workloads requires features and capabilities found in advanced application platforms.
- ▶ Managing virtual machines and containers across multiple platforms can increase operational overhead and slow deployment.
- ▶ Migrating existing virtual machines between platforms can disrupt critical workloads and services.

A unified approach to migrating and managing both virtual machines and containers on a single application platform can help you reduce complexity, adapt to changing business conditions, and manage associated risks.

As industry leaders and experts, Red Hat and Cisco provide validated, integrated application platforms for traditional virtual machine and modern container workloads on bare-metal infrastructure. Offered as [Cisco Validated Designs](#), these highly available, flexible, ready-to-deploy solutions incorporate products, technologies, and best practices for compute, storage, and network design. Using Cisco Validated Designs with [Red Hat® OpenShift® Virtualization](#), you can simplify infrastructure and workload management, speed application modernization, and respond to evolving market and business conditions.

Adopt a unified platform for virtualization

Based on proven, security-focused, scalable converged infrastructure, Cisco Validated Designs with Red Hat OpenShift Virtualization provide a complete solution to simplify and streamline virtual machine operations on bare-metal infrastructure. This solution lets you migrate, deploy, and manage existing and new virtual machine and container workloads on a trusted, consistent, comprehensive application platform. With unified, modern, cloud-native infrastructure for virtual machines, containers, and serverless workloads, you can standardize application deployment and maintenance on scalable resources that minimize configuration and management overhead.

Cisco Validated Designs with Red Hat OpenShift Virtualization speed application modernization by bringing modern development processes and tools to virtual machines. This unified platform empowers developers and IT teams to build, modernize, and deploy applications at scale with improved performance and efficiency. Teams can also use the same development pipelines for applications in virtual



Adopt new technologies with proven solutions

Cisco Validated Designs are validated, documented approaches that help you design, deploy, and extend new technologies across your environment. Use these guides to build network configurations, ensure new solutions fit into existing systems, and adopt best practices for successful deployments.

Learn more about [Cisco Validated Designs](#).

machines and containers, providing consistency and flexibility. And a cooperative support model through Cisco Solution Support ensures rapid issue resolution, providing the reliability and responsiveness your organization needs to meet current demands and prepare for future growth.

Simplify virtual machine migration, deployment, and management

Integrated, validated joint reference architectures from Red Hat and Cisco provide a consistent, cloud-native experience that simplifies virtual machine and container operations, letting you focus on innovation and business value. Based on a flexible, modular, and highly available architecture, the solution reduces datacenter complexity and aligns with Red Hat and Cisco best practices.

Cisco Validated Designs with Red Hat OpenShift Virtualization provide complete solution architectures that include:

- ▶ [Cisco Unified Computing System™ \(Cisco UCS®\) X-Series](#) modular blade and rack servers.
- ▶ [Cisco Nexus® 9000 Series](#) switches.
- ▶ [Cisco UCS 6000 Series](#) fabric interconnects.
- ▶ [Cisco Intersight®](#) cloud operations platform.
- ▶ [Red Hat OpenShift](#).
- ▶ [Red Hat OpenShift Virtualization](#).
- ▶ [Migration toolkit for virtualization](#).
- ▶ Your choice of validation storage arrays:
 - ▶ [NetApp AFF C-Series](#) flash storage arrays and [NetApp Trident](#).
 - ▶ [Pure Storage FlashArray//XL170](#) and [Portworx by Pure Storage](#).

These components are integrated, validated, and automated wherever possible, allowing you to migrate, deploy, and manage virtual machines quickly and economically while eliminating many of the risks associated with researching, designing, building, and deploying similar solutions in-house.

Each component provides key capabilities for the overall solution. Consolidated onto a single, adaptable, modular system, Cisco servers, switches, and networking deliver efficient, high-performance, enterprise-grade software-defined compute, storage, and server networking for on-site datacenters. Cisco Intersight simplifies infrastructure provisioning, configuration, maintenance, and visibility across your environments. NetApp all-flash storage arrays offer superior performance, flexibility, and data services to manage and protect critical data. Pure Storage FlashArray provides all-flash storage backed by an enterprise-class array, data-at-rest encryption, and advanced data reduction technology.

Powered by containers, Kubernetes, and DevSecOps capabilities, Red Hat OpenShift provides a foundation for rapidly building, deploying, and running applications at scale and with security across hybrid, multicloud, and edge environments. Included with Red Hat OpenShift and based on the Kernel-based Virtual Machine (KVM) open source project, Red Hat OpenShift Virtualization supports virtual machine operations directly in the Red Hat OpenShift console. Create, manage, clone, and import Linux® and Windows virtual machines. Run containerized and virtual machine workloads simultaneously in a single cluster. Manage virtual machine network interfaces and storage disks. Live migrate virtual machines be-

tween cluster nodes. Plus, with the migration toolkit for virtualization, you can efficiently move existing virtual machines to Red Hat OpenShift Virtualization, saving you time and minimizing potential errors.

Once you understand how to migrate your virtual machines, you can use [Red Hat Ansible® Automation Platform](#) to migrate them at scale, including related infrastructure. Post-migration, you can automate a wide array of Day 2 operational tasks, as well as provisioning virtual machines on your new virtualization platform. Finally, Red Hat Ansible Automation Platform provides a centralized automation model across Red Hat OpenShift clusters that span multiple zones, datacenters, and cloud environments.

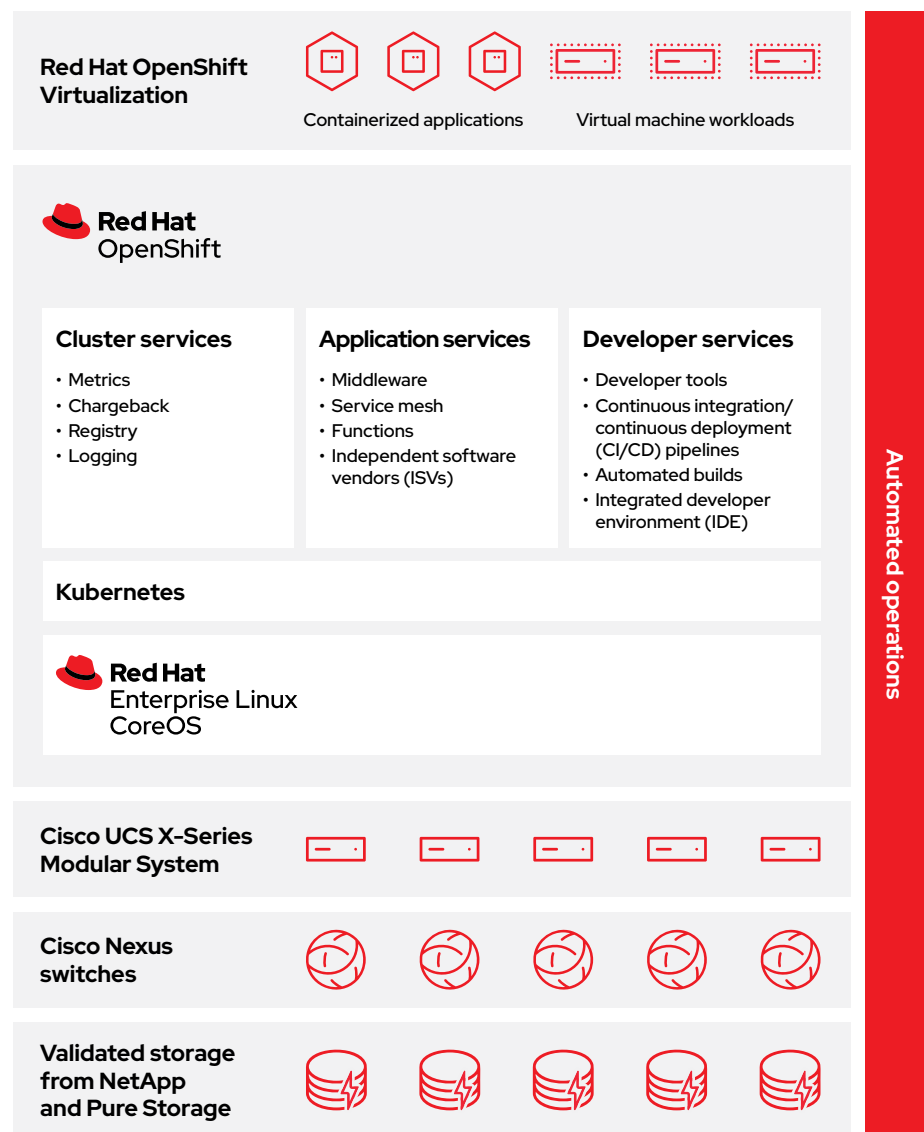


Figure 1. Cisco Validated Designs with Red Hat OpenShift Virtualization combine compute, networking, and storage to simplify and speed virtual machine migration, deployment, and management in hybrid cloud environments.



Discover key use cases across industries

You can deploy Cisco Validated Designs with Red Hat OpenShift Virtualization for a wide range of workloads and use cases across industries. Some examples of these use cases are shown in Table 1.

Table 1. Key use cases for Cisco Validated Designs with Red Hat OpenShift Virtualization

Industry	Use cases
Financial services	<ul style="list-style-type: none">▶ Detect fraud faster.▶ Enhance customer services.
Energy	<ul style="list-style-type: none">▶ Optimize field operations.▶ Improve worker safety.
Automotive	<ul style="list-style-type: none">▶ Create and deploy autonomous driving technologies.▶ Automate component testing.
Government and public sector	<ul style="list-style-type: none">▶ Improve information management.▶ Enhance critical decision support.▶ Configure and manage storage infrastructure.▶ Simplify operations.▶ Automate provisioning and administration for cloud workloads.▶ Speed server onboarding and application delivery.
Healthcare	<ul style="list-style-type: none">▶ Increase clinic and hospital efficiency.▶ Improve diagnostics.▶ Store and protect sensitive medical records.
Telecommunications	<ul style="list-style-type: none">▶ Improve customer services.▶ Optimize network operations.
Manufacturing	<ul style="list-style-type: none">▶ Predict equipment failures.▶ Perform preventative maintenance.



Take advantage of industry leadership

As industry leaders and experts, we bring innovative, tested, and integrated joint solutions to market, saving your organization time and money. We work together to incorporate the latest features and capabilities, validate integrations, update solutions and reference architectures, and train support engineers to help your teams keep pace with changing technology and approaches.

Benefit from our long-standing partnership

With a joint commitment to open source innovation and enterprise-class IT solutions, Red Hat and Cisco collaborate to advance cloud computing, containerization, virtualization, automation, and IT security. By combining Cisco's industry-leading networking and hardware solutions with Red Hat's open source software, we deliver robust, scalable, and security-focused IT infrastructure tailored to meet modern business demands.

Our partnership provides integrated solutions that help streamline and secure IT operations across industries. Red Hat OpenShift with Red Hat OpenShift Virtualization on Cisco infrastructure empowers you to efficiently manage and deploy virtual machine workloads and containerized applications on a unified hybrid cloud platform. Our certified joint solutions ensure compatibility, optimize performance, and offer comprehensive support, making it easier for you to deploy infrastructure in your datacenter and at the edge for a range of modern applications and services.

Learn more

Cisco Validated Designs with Red Hat OpenShift Virtualization can help your organization migrate, deploy, and manage virtual machines and containers on a unified platform at any scale.

- ▶ Watch a 2-minute video about the [Red Hat and Cisco partnership](#).
- ▶ Watch a webinar and demo of our joint solutions on the [Red Hat-Cisco BrightTalk channel](#).
- ▶ Explore Cisco Validated Designs with Red Hat OpenShift Virtualization:
 - ▶ [FlashStack with Red Hat OpenShift Container and Virtualization Platform using Cisco UCS X-Series](#)
 - ▶ [FlexPod Datacenter with Red Hat OpenShift Virtualization](#)
- ▶ Learn more about [Red Hat OpenShift Virtualization](#).
- ▶ Read the [15 reasons to adopt Red Hat OpenShift Virtualization](#) e-book.
- ▶ Discover more Red Hat and Cisco joint solutions in the [Red Hat Ecosystem Catalog](#).
- ▶ Find out more about our partnership: cisco.com/go/redhat and redhat.com/cisco



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.

North America

1 888 REDHAT1
www.redhat.com

Europe, Middle East, and Africa

00800 7334 2835
europe@redhat.com

Asia Pacific

+65 6490 4200
apac@redhat.com

Latin America

+54 11 4329 7300
info-latam@redhat.com

[f facebook.com/redhatinc](https://facebook.com/redhatinc)
[X twitter.com/RedHat](https://twitter.com/RedHat)
[in linkedin.com/company/red-hat](https://linkedin.com/company/red-hat)

redhat.com
0325_KVM