Bank cuts VMware licensing fees and admin tasks by migrating virtual machine workloads to Red Hat OpenShift Virtualization

Software and services

Red Hat® OpenShift® Container Platform

Red Hat OpenShift Virtualization

Red Hat Migration Toolkit for Virtualization

Red Hat OpenShift Data Foundation

Red Hat Enterprise Linux

Red Hat Ansible® Automation Platform

Following Broadcom's acquisition of VMware and its modification of VMware's licensing model, companies saw their hypervisor subscription costs skyrocket. For many, those costs became unaffordable.

One leading U.S. bank, however, found a solution. It slashed its VMware fees and realized other gains using tools it already had at hand. Thanks to Red Hat OpenShift Virtualization, a no-additional-cost add-on to Red Hat OpenShift Container Platform, the bank now runs many of its VM workloads at a much lower cost—on the same platform that hosts its container workloads.

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-Rawad Sabbar, Red Hat Architect

Broadcom puts a bank in a bind

Since Broadcom completed its acquisition of VMware in November 2023, VMware customers have reported licensing increases of 300%, 600%,[1] and as much as 1000%[2] or more under Broadcom's new per-core licensing model. Many were finding the increased costs unsustainable.

One Red Hat customer, a large U.S. financial services firm, had over 10,000 virtual machines (VM) running on VMware's virtualization hypervisor vSphere. "With such an immense VMware footprint, Broadcom's new pricing structure would render the company's vSphere subscriptions unaffordable," said Red Hat Principal Architect Ales Nosek. Hoping to cut those subscription costs, the bank began looking for alternatives to vSphere.

Making themselves dependent on a single vendor for virtualization had put the company in a bind. The firm no longer wanted to have all their eggs in one basket. This time, they evaluated numerous solutions and contracted with multiple vendors for their virtualization needs. Among the alternatives they examined was Red Hat OpenShift Virtualization.

Benefits

Container and VM workloads run on the same platform (OpenShift)

Reduced tracking and monitoring effort

Reduced licensing fees

Carefree operation and reduced overhead through auto-healing and reconciliation

Reliable, automated VM migration

Red Hat OpenShift Virtualization

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Red Hat OpenShift Virtualization allows virtual machines to run on the Red Hat OpenShift Container Platform. An extension to the platform, OpenShift Virtualization permits OpenShift to manage, deploy, and schedule virtual machines using the same tools it employs for containerized workloads. OpenShift Virtualization is included with Red Hat OpenShift subscriptions and can be activated at no additional charge.

OpenShift treats a VM as a pod. Traditional workloads in VMs can be connected to pod networks using standard Kubernetes objects like services and routes, or they can be connected to existing data center networks by extending L2 networks into OpenShift. OpenShift applies network policies to VM pods exactly as it does to application pods, providing a consistent model for managing VM-to-pod and pod-to-VM communication.

The firm already had a longstanding relationship with Red Hat. They had used the Red Hat OpenShift Container Platform for many years for container workloads, but not for virtualization. They also use Red Hat Enterprise Linux as the operating system for many of their virtualized environments. Since the integration between OpenShift and Red Hat Enterprise Linux is very mature and the cost of OpenShift Virtualization was already covered by their OpenShift licenses, the company decided to go with OpenShift Virtualization for their Red Hat Enterprise Linux VM workloads.

Benefits of OpenShift Virtualization

Activating and using OpenShift Virtualization provides the customer with several benefits, including:

A single platform for running containers and VMs. By moving their Red Hat Enterprise Linux VM workloads to OpenShift Virtualization, the company can run those VM workloads and their container workloads, side by side, on the same platform. This greatly reduces the effort required for workload tracking and monitoring. Operators can perform all their tasks and monitor all their workloads—be they container workloads, VM workloads, or a mix of both—from a single console. They see everything at once through a single pane of glass.

Reduced licensing fees. OpenShift Virtualization is included with each Red Hat OpenShift Container Platform subscription at no extra cost. Thus, by shifting many vSphere workloads to OpenShift Virtualization, the bank significantly reduced its VMware core license fees. They've also stopped paying for Red Hat Enterprise Linux subscriptions. Those, too, are covered by their OpenShift subscription now that their Red Hat Enterprise Linux VMs are running on OpenShift.

Auto-healing and reconciliation. OpenShift is a much more modern platform than VMware. It follows the direction the industry has been headed since the inception of the Kubernetes project: toward portable containers. Designed with the cloud in mind and fully automated from Day One, Red Hat OpenShift features auto-healing and reconciliation, and applies those mechanisms to both container and VM workloads. OpenShift ensures the bank's VM workloads are running exactly as they should with much less administrative overhead.

"For any customer that chooses such a multi-vendor solution, Red Hat will fully support it. Red Hat is accustomed to both competing and collaborating with different vendors. We often do both at the same time."

-Ales Nosek, Red Hat Principal Architect

Migrating workloads to OpenShift Virtualization

The firm's IT experts began exploring OpenShift Virtualization on their own. They stood up several bare-metal clusters and tested some VMs running on OpenShift. Satisfied that OpenShift Virtualization would meet their needs, they engaged Red Hat Consulting to help speed up their VM migration process.

Red Hat Consulting scaled up the customer's consulting team to add expert support for OpenShift Virtualization. Led by Principal Architect Ales Nosek, the Red Hat virtualization team helped the customer stand up more bare-metal clusters, experiment further with OpenShift Virtualization, and test its VMs in their new environment.

The Red Hat Consulting team demonstrated how the customer's existing VMs could be migrated easily to OpenShift using Red Hat's Migration Tool for Virtualization (MTV). MTV migrates virtualized workloads to OpenShift from vSphere and other hypervisors. It is designed to simplify that task in a highly scalable way, making it possible to migrate one or two VMs for testing or hundreds for production.

Like OpenShift Virtualization, MTV is an extension of the OpenShift Container Platform and can be enabled at no additional cost. What's more, managing VM migrations with MTV requires very little intervention from virtualization teams, so it doesn't add to their burden.

The Consulting team updated the customer's existing automation framework for creating VMs in vSphere, using Red Hat Ansible Automation Platform to create VMs on the fly in OpenShift.

After working on several proof-of-concept projects, the customer and Red Hat Consulting moved to full-scale integration. Their current task is to migrate every possible Red Hat Enterprise Linux VM workload to OpenShift.

Red Hat OpenShift Data Foundation

Red Hat Consulting has also helped the customer set up Red Hat OpenShift Data Foundation (ODF). Formerly called Red Hat OpenShift Container Storage, ODF is Red Hat's software-defined storage for containers. OpenShift Data Foundation was not part of the customer's initial solution.

Driven by its desire to draw components from numerous suppliers, the firm had originally sourced its line storage from another vendor. Unfortunately, that storage solution was not working as expected and was causing stability issues.

To remedy those issues, the customer decided to try OpenShift Data Foundation and compare its performance with their original storage solution. The Red Hat Consulting team deployed ODF in many clusters already built with the competitor's storage.

OpenShift Data Foundation is highly compatible with OpenShift Virtualization and the two are well integrated. The issues experienced with the earlier storage solution disappeared in the clusters where ODF was employed. The customer subsequently shifted the majority of its clusters to ODF.

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Groundbreaking results

The bank and Red Hat have done groundbreaking work, said Red Hat Architect, Rawad Sabbar, a member of the Red Hat Consulting team supporting the project. "Together, we have accomplished the largest VMware-to-OpenShift migration yet attempted. No Red Hat customer had previously shifted VM workloads to OpenShift Virtualization on such a massive scale."

Most importantly, the migrated virtual machines perform just as well on OpenShift as they had on vSphere. And not just the VMs; there has been no performance degradation in the applications running inside those virtual machines. VM workloads and their applications will perform just as well on OpenShift, regardless of the hypervisor that hosted them previously.

With Red Hat's help, this large financial services company has not only migrated a massive volume of Red Hat Enterprise Linux VMs. They've also migrated databases, data analytics applications, and Java applications. All continue to perform well in OpenShift.

Full speed ahead...into the future

The bank's initial VM migration covered its least critical IT environments, including development, quality assurance, capacity planning, and similar. That effort has given the customer great confidence in OpenShift Virtualization and Red Hat's migration process.

Now, the customer and Red Hat Consulting have begun the migration of the firm's production environments. These are workloads with much more stringent requirements. They must be up and running at all times, 24/7.

In addition, the customer is expanding. They are building additional data centers and enlarging their private cloud. Doing so will eventually lower expenditures by reducing hardware rental costs. OpenShift and OpenShift Virtualization will be a significant part of those plans.

Red Hat OpenShift was designed from Day One to take advantage of a hybrid cloud environment. It runs containers and virtual machines in the same way, seamlessly, in both private and public cloud environments and any combination thereof.

In other words, as the bank grows, Red Hat OpenShift and OpenShift Virtualization will grow with them and help them grow.

Working with Red Hat Consulting

Red Hat Consulting brings together open source technology, process, and culture to help transform the way you do business. It takes an integrated, global Site Reliability Engineering (SRE) approach to technical account management (TAM), working with your teams to enable speed to market and increased revenue, supported by virtual or in-person training, and on-site engagement. We help to standardize services across hybrid cloud environments, develop applications, and perform application migration and modernization. Red Hat also integrates, automates, secures, and manages strategies and foundations for complex systems, based on container platforms and cluster acceleration. Ultimately, our services deliver measured business outcomes that show significant returns on investment.

[1] Sharwood, S., Broadcom says VMware to grow revenue by double-digit percentages all year, The Register, March 2024.

[2] Kennedy, P., VMware VCSP Customers Seeing 10x or More Cost Increases Under Broadcom, ServeTheHome, February 2024.

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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