

NetApp Virtual Storage Console for Red Hat Enterprise Virtualization

Manage storage directly from Red Hat Enterprise Virtualization Manager (RHEV-M)

The Challenge

Administrative dependencies limit productivity

Enterprise IT departments continue their shift toward virtualized data centers and the promise of higher efficiency with lower costs. Unfortunately, the transition to virtual machines and desktops often leads to a simultaneous increase in storage growth and complexity.

Because a virtual server is essentially a set of storage files, the traditional boundaries between servers and storage are now less clear. Consequently, administrators of virtual infrastructures spend more time on storage operations.

Red Hat Enterprise Virtualization Manager (RHEV-M) is a powerful tool for managing virtual servers and desktops, but Red Hat administrators also need a way to manage the associated storage with ease and efficiency. Relying completely on storage administrators to provision, configure, and optimize storage requires coordination and consumes valuable time.

Virtual machines are inefficiently provisioned and cloned

Sophisticated IT professionals understand that the ability to deploy resources dynamically is required to quickly respond to changing business needs. Virtual-machine cloning is an increasingly effective and popular means of speeding deployments.

However, cloning by way of the hypervisor is CPU and memory intensive, inefficient, and slow. Additionally, creating hypervisor-based VM clones is time consuming because they can be created only in a serial fashion.

The NetApp Solution

NetApp offers storage solutions that are tightly integrated with Red Hat technology to simplify storage management and reduce costs in virtualized environments. An example of this deep integration is the NetApp Virtual Storage Console (VSC) for Red Hat Enterprise Virtualization.

This plug-in to Red Hat Enterprise Virtualization Manager (RHEV-M) provides management capabilities for NetApp Data ONTAP 7-mode and/or Clustered Data ONTAP NFS-based storage, including provisioning, deduplication, resizing, and destruction of storage domains, with our block-level deduplication providing dramatic reductions of as high as 90% in storage required. Our VSC also enables Red Hat administrators to deploy thousands of VMs in parallel while consuming only a small amount of storage. In addition, the traditional hypervisor-based cloning of thick VMs, which can take hours because it is a serial process, is off-loaded by the VSC for RHEV to the NetApp controller, where the cloning time is reduced to a few minutes for many thick VMs.

HIGHLIGHTS

- Improve IT efficiency by allowing Red Hat administrators to provision and manage NetApp® storage directly from RHEV-M.
- Reduce storage costs with thin provisioning, deduplication, and resizing of storage domains directly from RHEV-M.
- Enable a dynamic infrastructure by rapidly provisioning and cloning thousands of virtual machines in minutes for use in Red Hat Enterprise Virtualization.
- Streamline storage operations because menial tasks are handled by the virtualization admin, reducing the number of support tickets.

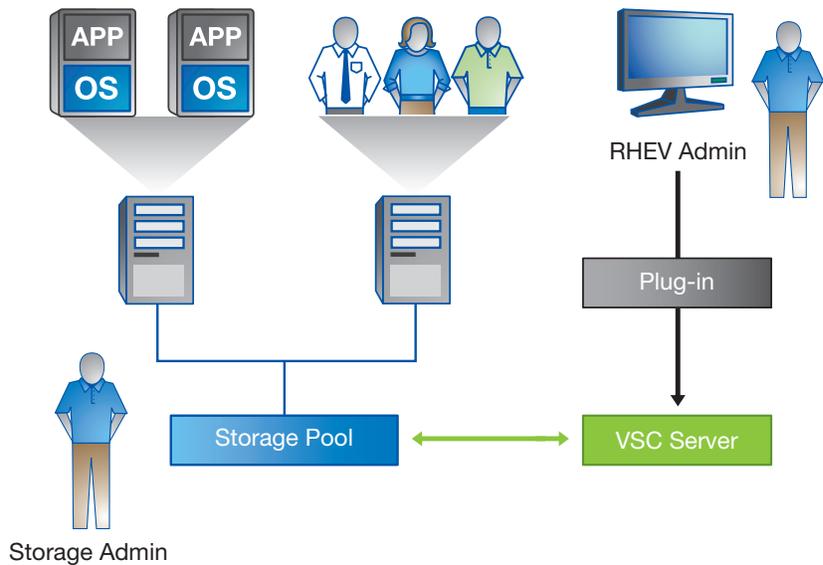
Empowering Red Hat Administrators

Configure NetApp storage

The Virtual Storage Console makes it possible for Red Hat administrators using RHEV-M to discover NetApp storage and to specify the network interface(s) as well as the storage aggregate(s) that should be used every time a new storage repository is created.

Provision and manage storage

You can simplify the deployment and administration of storage for RHEV with the Virtual Storage Console while saving substantial amounts of capacity relative to conventional storage systems.



Red Hat administrators can provision, create, configure, and manage individual VMs or entire storage repositories directly from RHEV-M using resources and interfaces assigned by the storage administrator. While Red Hat administrators gain new management capabilities with the Virtual Storage Console, the storage administrator retains ownership and control of storage policies.

Using block-level deduplication for primary storage can yield dramatic reductions in the storage required for virtual servers and desktops. VM files created from templates are nearly identical in many cases, allowing massive deduplication (up to 90%) because

many VMs are created from the same template. Even VMs that only share the same operating system can benefit greatly from the space savings offered by NetApp deduplication.

Fast, Space-Efficient Provisioning and Cloning

The NetApp Virtual Storage Console provides extremely fast, cost-effective VM provisioning and cloning. Red Hat administrators can use the VSC plug-in for RHEV to create thousands of VMs in minutes without needing custom scripts or the assistance of a storage administrator. Instead of using the hypervisor to clone virtual machines, the VSC for RHEV off-loads the cloning

to the NetApp storage array, resulting in up to 99% faster cloning. The cloning off-load can create hundreds of VMs in a fraction of the time required by the hypervisor to complete one clone.

All of this is made possible by NetApp FlexClone® technology. FlexClone lets you clone and deploy a single VM or multiple VMs almost instantly. Each clone consumes very little space—only enough for metadata and new or changed data blocks—because it references the data blocks associated with the original VM.*

* The Virtual Storage Console is available for download at no charge to all NetApp customers. However, there is a licensing fee for the FlexClone feature in Data ONTAP.

ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 75 offices spanning the globe, empowering its customers' businesses. Details at www.redhat.com

ABOUT NETAPP

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate performance breakthroughs. The world's leading companies rely on our solutions to achieve better economics, speed, and scale of business. Discover our passion for helping companies around the world go further, faster at www.netapp.com.