



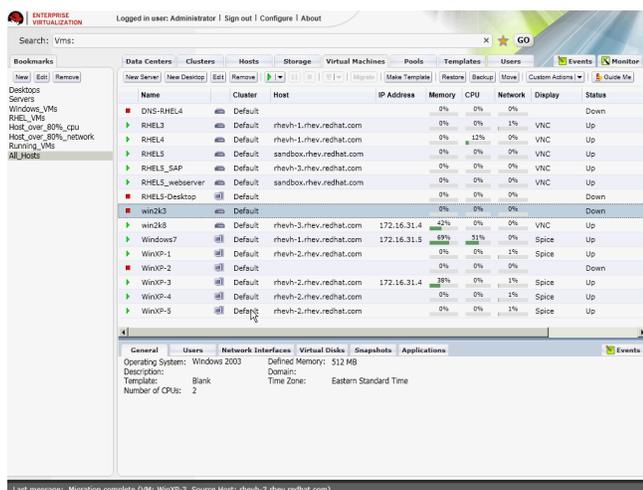
# RED HAT ENTERPRISE VIRTUALIZATION MANAGER FOR SERVERS

## OVERVIEW

Red Hat Enterprise Virtualization Manager delivers a centralized management systems to administer and control all aspects of a virtualized infrastructure from host and guest management through to storage management and high availability.

Red Hat Enterprise Virtualization (RHEV) manager provides a rich user interface that allows an administrator to manage their virtual infrastructure from a web browser allowing even the most advanced configurations such as network bonding and VLANs to be centrally managed from a graphical console

RHEV manager manages both Red Hat Enterprise Virtualization Hypervisors (RHEV-H) and Red Hat Enterprise Linux 5 hosts with the KVM hypervisor, delivering leading performance and scalability for virtual machines on a stable and secure platform trusted by millions of organizations around the world for their most mission-critical workloads.



## FEATURES

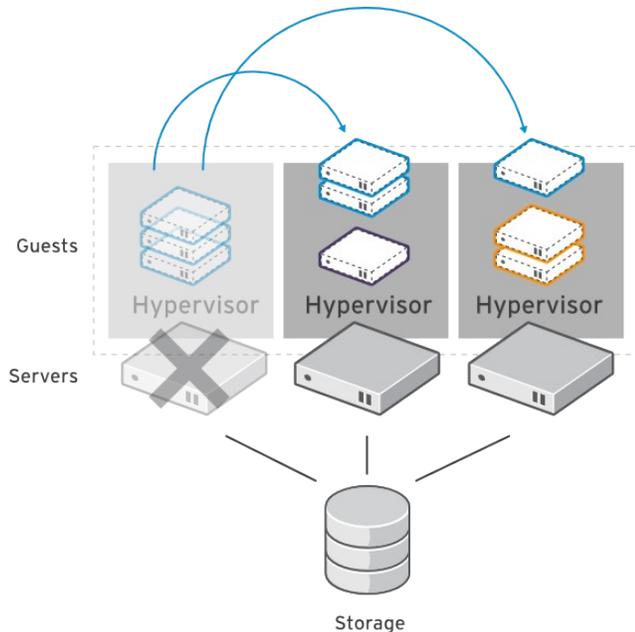
### Robust virtualization management features

- ✓ **Live Migration:** Dynamically move virtual machines between hosts with no service interruption.
- ✓ **High Availability:** Virtual machines automatically restart on another host in the case of host failure.
- ✓ **System Scheduler:** Balance workloads in the datacenter by dynamically live-migrating virtual machines based on resource usage and policy.
- ✓ **Power Saver:** During off-peak hours, concentrates virtual machines on fewer physical hosts to reduce power consumption on unused hosts.
- ✓ **Maintenance Manager:** Perform maintenance on hosts without guest downtime. Upgrade hypervisors directly from management system.
- ✓ **Image Manager:** Create new virtual machines based on templates. Use snapshots to create point-in-time image of virtual machines.
- ✓ **Monitoring :** Real time monitoring of virtual machines, host systems and storage. Alerts and notifications.
- ✓ **Security :** Role based access control allowing fine grained access control and the creation of customized roles and responsibilities. Detailed audit trails covering GUI and API access. Integration with Microsoft Active Directory.
- ✓ **Thin Provisioning :** For improved storage utilization
- ✓ **API :** API for command line management and automation
- ✓ **Scalability :** Manage large virtual infrastructure with scalable management platform including search driven user interface.
- ✓ **Centralized Host management :** Manage all aspects of host configuration including network configuration, bonding, VLANs and storage. Supports Red Hat Enterprise Linux 5.4 and Red Hat Enterprise Virtualization Hypervisor hosts.



## HIGH AVAILABILITY

Red Hat Enterprise Virtualization Manager continually monitors the physical host systems. In the event of a hardware failure any virtual machine configured to be “Highly Available” will be restarted on another host in the cluster.



Red Hat Enterprise Virtualization *High Availability* will automatically restart virtual machines with no user intervention required. Within a matter of seconds the virtual machine has been restarted and the administrator has received an alert. When the original host system is recovered *Live Migration* can be used to “fail back” the virtual machine to it's original host without any interruption to service.

High Availability is integrated with Red Hat Enterprise Virtualization *System Scheduler* to ensure that the virtual machine is restarted on a host selected based on it's current resource utilization and in compliance with any workload balancing or power saving policies.

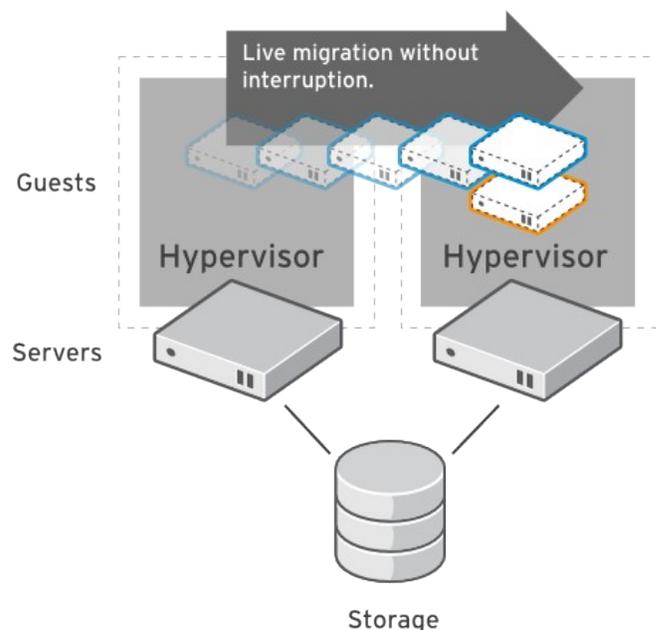
With Red Hat Enterprise Virtualization High Availability, configuring a virtual machine to be highly available is as simple as clicking a checkbox.

## LIVE MIGRATION

*Live Migration* provides the ability to move a running virtual machine between physical hosts with no interruption to service. Live Migration is transparent to the end user, the virtual machine remains powered on and user applications continues to run while the virtual machine is relocated to a new physical host.

Live migration allows the administrator to:

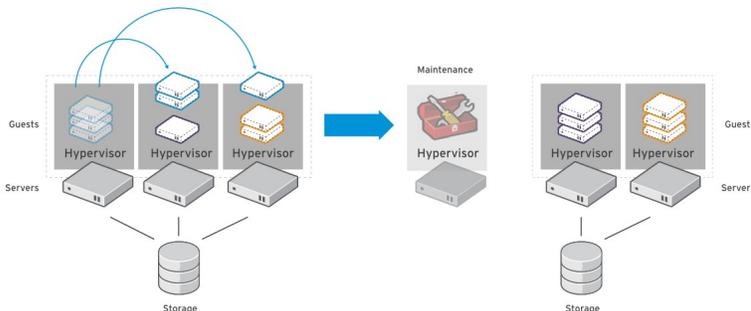
- Perform hardware maintenance without application downtime.
- Relocate a virtual machine to a new host to dynamically balance resources within a cluster.
- Migrate a virtual machine from a host that may be experiencing a soft-failure
- Move a virtual machine to a new host to free up resources to allocate to other virtual machines.





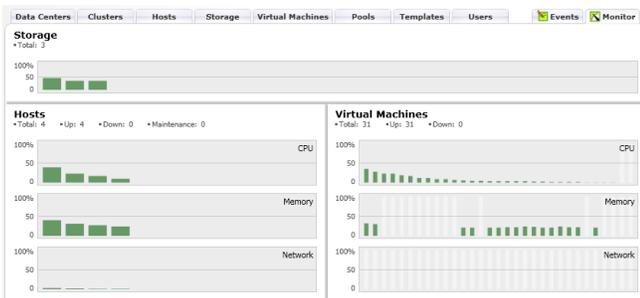
## MAINTENANCE MANAGER

Maintenance manager automates the tasks required to begin hardware maintenance on a physical host (hypervisor). When maintenance mode is selected for a given host, Maintenance Manager will automatically relocate virtual machines from that host to other host in the cluster. Maintenance Manager uses *Live Migration* to ensure that there is no interruption to service so virtual machines continue running during the relocation. Maintenance Manager then marks the host as out of service to prevent other virtual machines from being started on, or live migrated to that system. If the physical host is equipped with a supported out-of-band management interface such as IPMI, Dell DRAC, HP iLO, IBM RSA, then the host can be remotely powered on, off or reset. After maintenance has been completed the administrator can “activate” the host and it will rejoin the cluster.



## MONITORING

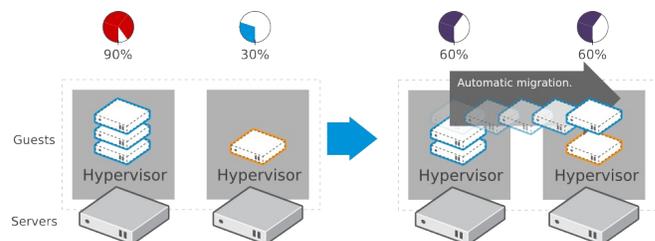
System wide monitoring for hypervisor hosts, virtual machines and storage covering storage, network I/O, memory and CPU utilization. Setup alerts based on the status of hosts systems, virtual machines or even storage utilization.



## SYSTEM SCHEDULER

The *System Scheduler* manages the allocation of physical resources within the virtual data center.

The System Scheduler continually monitors the utilization of host systems and virtual machines, dynamically managing the placement of virtual machines within the data center based on policies defined by the system administrator.



## POWER SAVER

*Power Saver* extends the System Scheduler to add policies to reduce power consumption by consolidating more virtual machines onto a smaller number of physical hosts. Since most organizations size their infrastructure to cope with their peak capacity requirements, during off peak hours, such as nights and weekends the extra physical capacity is consuming expensive physical resources such as power and cooling. The administrator configures the minimum service level at which the Power Saver policy is triggered. For example if the utilization of a single host goes down to 10% for 20 minutes or more then System Scheduler will use live migration to relocate the virtual machines running on this host to other hosts in the cluster.

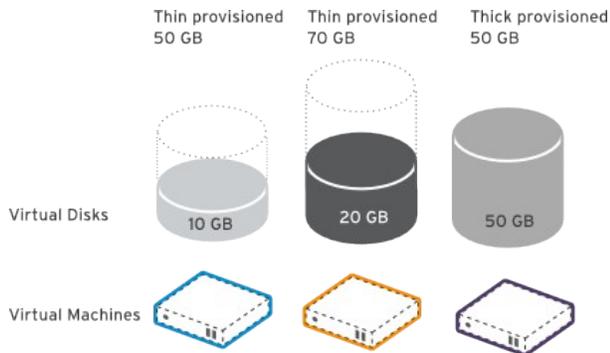
## IMAGE MANAGER

Red Hat Enterprise Virtualization Image manager includes a powerful set of features for creating and managing virtual machine images.

- Templates – enabling users to rapidly provision virtual machines based on master images stored in a central image library



- Thin provisioning – allowing administrators to more efficiently utilize their storage by only allocating space on the storage array when required by the virtual machine.



- Snapshots – creating a “point in time” image of a virtual machine's storage, allowing the administrator to roll back the virtual machine to a given point in time.

### SEARCH DRIVEN USER INTERFACE

High scalable management interface allowing thousands of virtual machines to be managed from a single management platform.

Red Hat Enterprise Virtualization Manager has a *search driven user interface* that allows an administrator to dynamically filter objects in the data center based on their configuration or current status. For example show all hosts that are using more than 85% of their physical memory, or any virtual machine running Windows Server 2008 that is not running application XYZ.



This interface does not rely on static tags that must be manually set by an administrator instead RHEV manager will dynamically query each object in the data center for their current status. Every element in the data center can be queried including hosts, virtual machines, users, events in the log and storage. These filters can be *bookmarked* to be accessed quickly from both the user interface or via the command line scripting interface.

### HARDWARE REQUIREMENTS

Red Hat Enterprise Virtualization Manager for Servers can be deployed on a physical server or on a virtual machine meeting the following requirements.

CPU : Minimum Pentium 4 2.0Ghz processor.  
Recommended : Multiple CPUs/Cores

Memory : Minimum 1GB. Recommend 2GB

Network : 1 x 100mbps Nic. Recommend 1 x 1000mbps

Disk : 6 GB

### SOFTWARE REQUIREMENTS

Server : Microsoft Windows Sever 2003 SP2 (x86)

Client : Internet Explorer 6 and later

.NET 3.5sp1

Microsoft Windows XP

Microsoft Windows Server 2003 or 2008

For more information, please visit  
<http://www.redhat.com/virtualization>