



# RED HAT ENTERPRISE VIRTUALIZATION: HYPERVISOR

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Red Hat Enterprise Virtualization (RHEV) Hypervisor is a compact, full featured virtualization platform for quickly and easily deploying and managing virtualized guests. The RHEV Hypervisor is part of the Red Hat Enterprise Virtualization suite. The RHEV Hypervisor is designed for integration with the Red Hat Enterprise Virtualization Manager for Servers and the Red Hat Enterprise Virtualization Manager for Desktops.

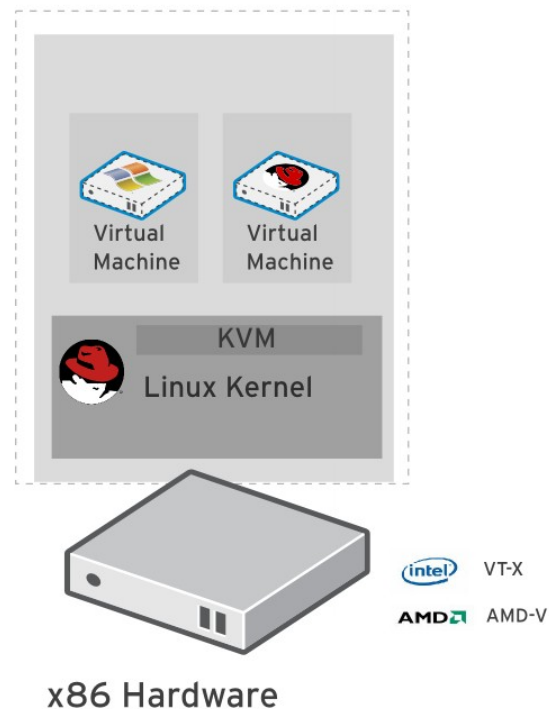
The RHEV Hypervisor can be installed from USB storage devices, CD-ROMs, DVDs, pre-installed by an OEM or provisioned over the network using PXE.

The RHEV Hypervisor is based on the Kernel-based Virtual Machine (KVM). KVM is an advanced and efficient virtualization hypervisor implemented as a Linux kernel module. As KVM is a kernel module, it leverages the existing Red Hat Enterprise Linux kernel and benefits from the default kernel's extensive testing, device support and flexibility.

## SMALL FOOTPRINT, BARE METAL HYPERVISOR

The Red Hat Enterprise Virtualization Hypervisor is 64-bit bare metal hypervisor combining the advanced features of the KVM hypervisor with the proven stability, security and performance of Red Hat Enterprise Linux 5.

RHEV Hypervisor is built from a subset of packages from Red Hat Enterprise Linux 5 including only the components required to boot on hardware certified for Red Hat Enterprise Linux 5, run a management agent and manage virtual machines. The footprint is less than 100MB and is delivered as a single image that can run on any Red Hat Enterprise Linux 5 certified hardware platform.



## SECURITY

The RHEV Hypervisor leverages the advanced security features of Red Hat Enterprise Linux including Security-Enhanced Linux (SELinux) a joint project developed by the United States National Security Agency (NSA) and the Linux community to provide a security hardened operating environment with high levels of security, resource isolation and auditing.



The RHEV Hypervisor is built from a subset of Red Hat Enterprise Linux 5 but does not support running applications other than the management agent and virtual machines, thus reducing maintenance and patching while presenting a smaller attack surface. The base file system image for RHEV Hypervisor is stateless, running only in memory, preventing changes to the base image. This hypervisor is updated by deploying a new image rather than individual file updates. The RHEV Hypervisor includes a firewall that locks down access permitting only management traffic to the hypervisor.

### SIMPLIFIED DEPLOYMENT AND ADMINISTRATION

The RHEV Hypervisor can be deployed manually using a CD-ROM, DVD or USB key or automated using PXE.

For manual installations a simple text interface allows basic configuration to be performed such as setting up network interfaces and storage.

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Red Hat Enterprise Virtualization Hypervisor release 5.4-2.1

Hypervisor Configuration Menu

1) Configure storage partitions    5) Configure the RHEV Manager
2) Configure authentication        6) Install locally and reboot
3) Set the hostname                7) Uninstall an existing Hypervisor
4) Networking setup                8) Support menu

Choose an option to configure:
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Using PXE the entire installation and configuration process can be automated, allowing installation to be as simple as booting up the server.

Once the RHEV Hypervisor has been installed all further configuration and maintenance is performed from the Red Hat Enterprise Virtualization manager, allowing all aspects of the hypervisor to be configured from network configuration such as basic interface settings, NIC bonding and VLANs through to storage configuration including iSCSI and Fiber channel.

General	Virtual Machines	Network Interfaces
Software Version: 2.1.0.33098	CPU Name: 64-bit Intel with NX	CPU Type: Intel(R) Core(TM)2 CPU
Host type: RHEV-H	Number of CPUs: 2	Memory: 2889 MB
Active VMs: 2		

**Alerts**  
 A new RHEV-Hypervisor version is available. [Upgrade](#)

Using Red Hat Enterprise Virtualization manager the RHEV Hypervisor can be remotely upgraded over the network.

### KEY FEATURES

- Scalability**  
 Supporting up to 96 CPU cores per host and 1TB or memory  
  
 Supporting 16 virtual CPUs and 256GB memory per virtual machines  
  
 Large scale consolidation supporting over 256 active virtual machines per host.
- Performance**  
 Near native performance – up to 95% of bare metal performance for real world enterprise applications.  
  
 High performance para-virtualized network and block drivers for Red Hat Enterprise Linux and Microsoft Windows virtual machines.
- Storage Support**  
 All storage systems certified on Red Hat Enterprise Linux 5 are supported by Red Hat Enterprise Virtualization Hypervisor including fiber channel, iSCSI and NFS.  
  
 Storage Multipathing for high performance and fault tolerant storage access for fiber channel and iSCSI.  
  
 Thin provisioning for improved storage utilization.  
  
 Boot from SAN
- Network Support**  
 Support for a wide range of network devices including 10GB network interfaces.  
  
 Network bonding for fault tolerant and high performance network connectivity.  
  
 VLAN and Spanning Tree Protocol.



- **Memory Management**  
Including support for memory page sharing for improved consolidation ratios and improved hardware utilization.

GUEST OPERATING SYSTEM SUPPORT	
✓	Red Hat Enterprise Linux 3 (32 and 64 bit)
✓	Red Hat Enterprise Linux 4 (32 and 64 bit)
✓	Red Hat Enterprise Linux 5 (32 and 64 bit)
✓	Microsoft Windows Server 2003 and 2003 R2 (32 and 64 bit)
✓	Microsoft Windows Server 2008 and 2008 R2 (32 and 64 bit)
✓	Microsoft Windows XP (32 bit)

#### GUEST OPERATING SYSTEM CERTIFICATION

Red Hat Enterprise Hypervisor is certified under the Microsoft<sup>®</sup> Server Virtualization Validation Program (SVVP) to provide a fully supported environment for deploying Microsoft<sup>®</sup> Windows Server guests.

Red Hat provides para-virtualized network and disk device drivers certified under the Microsoft<sup>®</sup> Windows Hardware Quality Labs program (WHQL).

#### HARDWARE CERTIFICATION

Hardware certifications for Red Hat Enterprise Virtualization Hypervisor are inherited from Red Hat Enterprise Linux 5. Any 64-bit x86 server platform that includes Intel VT<sup>®</sup> or AMD-V<sup>™</sup> hardware virtualization extensions that are certified for Red Hat Enterprise Linux 5 are certified for Red Hat Enterprise Virtualization Hypervisor.

The hardware catalog is available online at <https://hardware.redhat.com/>

#### HARDWARE REQUIREMENTS

- CPU : 64 bit AMD or 64 Intel with hardware virtualization extensions (AMD-V<sup>™</sup> or an Intel VT<sup>®</sup>.)
- Network : 1 Network controller with minimum bandwidth of 100Mbps - recommended multiple 1000Mbps network controllers.
- RAM – minimum 1GB
- Disk – minimum 750MB of storage for installing the Hypervisor on USB, internal hard disk or SAN.
- Out-of-band Management interface  
Red Hat Enterprise Virtualization High Availability requires an out-of-band management interface such as IPMI, Dell DRAC, HP iLO, IBM RSA or BladeCenter for host power management.