

DATASHEET

RED HAT ENTERPRISE VIRTUALIZATION 3.0 FEATURE COMPARISON

AT A GLANCE

- Red Hat Enterprise Virtualization 3.0 is the first fully open source, enterprise ready virtualization platform
 - Compare the functionality of RHEV to VMware vSphere 5 and Microsoft Hyper-V 2008R2
 - Decide for yourself which solution is best for your use case
 - Consult the Red Hat Enterprise Virtualization for Servers Competitive Pricing Guide for information on pricing
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EXECUTIVE SUMMARY

When you are choosing a virtualization platform for your datacenter, your architecture and capabilities may be limited by the features offered by each product. This document details the features of Red Hat Enterprise Virtualization 3.0 in comparison with VMware vSphere 5 and Microsoft Hyper-V 2008 R2. This document is designed to give you information about Red Hat Enterprise Virtualization (RHEV) and to allow you to compare features and benefits across multiple virtualization platforms.

This comparison demonstrates that the RHEV 3.0 feature set matches VMware for core functionality while it surpasses that of the Microsoft Hyper-V 2008 R2 for enterprise virtualization. RHEV for Servers does this at a solution cost of up to 80 percent less than VMware. See the Red Hat Enterprise Virtualization for Servers Competitive Pricing Guide for details. It is also important to note that unlike its competition, the complete RHEV for Servers enterprise feature set is available through a single, simple subscription and, unlike competitive products, the RHEV for Servers functionality is not segmented into multiple editions and customers are not required to buy add-on products for additional functionality.

The competitive data for VMware vSphere 5 and Microsoft Hyper-V 2008 R2 were gathered from data publicly available from each manufacturer, are not guaranteed by Red Hat, and are subject to change. Please refer to the appropriate manufacturer's website for the latest data.



FEATURES	RED HAT ENTERPRISE VIRTUALIZATION 3.0	VMWARE VSPHERE 5	MICROSOFT HYPER-V 2008 R2
HYPERVISOR			
Bare metal hypervisor: Is installable directly on the server hardware without requiring a full operating system	Y	Y	N (Minimum 3 GB install)
Small footprint: (<200mb)	Y	Y	N
Optimized device drivers: Guest device drivers are optimized for virtualization resulting in high performance network and disk operations	Y	Y	N
Broad range of host server support: RHEV is certified on all hardware certified for RHEL including the latest Intel Xeon and AMD Operton chipsets	Y	Y	Y
SCALABILITY LIMITS			
Per Cluster			
Hosts/cluster	200	32	16 host limit of Microsoft Cluster Services
Per Host			
Max Logical CPU per host	160	160	64
Max RAM per host	2 TB/host	2 TB/host	32 GB - Std Hyper-V Server 1 TB - Enterprise DataCenter
Max Virtual CPUs per host	512	512	512
Per VM			
Max vCPUs per virtual machine	64 vCPU/VM	8 vCPUs/VM 32 vCPU/VM with Enterprise Plus	4 vCPUs/VM for Win2008/ Win7 and Linux VMs with Integration Services installed; 2vCPUs/VM for Win2003
Max vRAM per virtual machine	512 GB/VM	1 TB/VM	64 GB/VM

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GUEST OPERATING SYSTEM SUPPORT			
Guest operating system support	Windows2003,2008Windows7, XP RHEL 3,4,5,6 (x86 and x64) Other operating systems are known to work and are community supported	Windows, Linux, UNIX x86 and x64	Windows2003,2008 (certain SPs only) SLES, RHEL 5+ x86 and x64
MANAGEMENT FEATURES			
High Availability			
Virtual machine restart in case of host failure	Y	Y	Y, requires Microsoft Failover clustering, limited guest OS support.
Virtual machine restart in case of guest failure	Y	Y	Y
Virtual machine restart priority: Prioritize restart order allowing most critical VMs to be restarted first	Y	Y	N
No single point of failure for high availability: RHEV-Manager can be configured for high availability	Y	Y, requires Microsoft Failover clustering	Y, requires Microsoft Failover clustering
Maintenance Mode: Hosts undergoing maintenance automatically have their guest VMs migrated to other available hosts	Y	Y	N
High availability for enterprise management module: Automatic fail over to standby management server in the event of failure to primary	Y	Y	Y
Migration			
Virtual machine live migration	Y	Y	Y
Storage live migration	Coming	Y, requires Enterprise or Enterprise Plus	Quick migration (some service interruption)

FEATURES	RED HAT ENTERPRISE VIRTUALIZATION 3.0	VMWARE VSPHERE 5	MICROSOFT HYPER-V 2008 R2
Workload and Resource Management			
System scheduler: Cluster policies to automatically distribute workload evenly across cluster host servers	Y	Y, requires Enterprise or Enterprise Plus	N
Power saver: During off-peak hours, concentrates VMs on fewer hosts to save power	Y	Y, requires Enterprise or Enterprise Plus	Y
Storage load balancing: automatically balance storage I/O and storage capacity	N	Y, Enterprise Plus	N
Shared resource pools: CPU, memory, and storage resources are aggregated and managed at the cluster level	Y	Y	N
Hot add VM RAM, Disk: Add more memory and disk storage to running VM (Guest OS and application must support feature)	Coming	Y, requires Enterprise or Enterprise Plus	Y
Hot add VM vCPUs and NICs: Add more vCPUs and NIC to running VM. (Guest OS and application must support feature)	Coming	Y, requires Enterprise or Enterprise Plus	N
Image Management			
Thin provisioning: Virtual disks do not take up all of their allowed space upon creation	Y	Y	Y
Templates: Virtual machines can be deployed from master installations	Y	Y	Y
VM snapshots: Roll back patches and upgrades	Y	Y	Y
Live VM snapshots: Backup a running VM	Coming	Y	Limited
Import/Export of VMs in the standard OVF format	Y	Y	Y

FEATURES	RED HAT ENTERPRISE VIRTUALIZATION 3.0	VMWARE VSPHERE 5	MICROSOFT HYPER-V 2008 R2
Image Management			
VM conversion: Tools that convert VMs from other formats to native format	Y	Y	Y
VM backup: Certified third-party solutions are available for backing up virtual servers (for both data and operating system backup)	Y	Y	Y
System Administration and Control			
Single-view for centralized control	Y	Y	N, requires multiple management tools
Host and VM system monitoring and management	Y	Y	Requires SCOM
Self service user portal: Provides administrative access to users for creating/running VMs and managing environment	Y	Requires purchase of VMware Lab Manager (deprecated), or vCloud Director with Enterprise Plus	N
Roles and permissions: Granular, inheritable, directory-based security roles to all actions and objects	Y	Y	Requires Authorization Manager
Identity management: Choice of Microsoft Active Directory or IPA for user authentication	Y	Y	AD only
Remote console: RHEV Manager allows access to virtual machines using secure graphical console	Y	Y	Y
PXE boot support: Remote network boot via PXE (Preboot Execution Environment)	Y	Y	Y



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Reporting and Monitoring			
Customizable reporting engine: Reporting of historic usage, trending, and quality of service	Y	Requires vCenter CapacityIQ	N
Alerts and notifications: Errors and warnings immediately reported to administrators via email	Y	Y	Y
Logging: Supports remote logging and crash analysis	Y	Y	Y
Guest agents: Enables RHEV Manager to monitor VM health and status	Y	Y (?)	Y
Integration, Automation, and Customization			
API: Programmatic access to all management commands	Y	Proprietary closed	Proprietary closed
Scripting and Automation of management commands	Y, Linux python based CLI	Y, Powershell based CLI	Y, Powershell based CLI
Hooks: Used to run system commands or to execute scripts that modify VM operation	Y	Limited	N
SECURITY			
Kernel level: SELinux and sVirt adds security policy in kernel for the most effective intrusion detection, isolation, and containment.	Y	N, application layer security with add-on vShield products	N
Small hypervisor footprint minimizing attack surface	Y	Y	N, 3.4 GB min
MEMORY MANAGEMENT			
Memory overcommitment: Allows the allocation of more virtual memory to its VMs than the host has physical memory	Y	Y	Limited to in-guest ballooning and only availability with some Microsoft OSES

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MEMORY MANAGEMENT			
Memory page sharing: Enables VMs with like operating systems to share physical memory	Y	Y	N
Processor hardware memory assist: Accelerates memory exchange between host and VM	Y	Y	N
Transparent huge pages: Larger memory pages can be dynamically created for VMs that require them	Y	Y	N
NETWORKING			
Device support: All network hardware and interfaces certified for Red Hat Enterprise Linux	Y	Y	Y
vLANs: Support for virtual LANs inside the virtual infrastructure	Y	Y	Requires Host OS and VM OS configuration.
Network offload: Offloads virtual networking and network IO to compatible NIC hardware	Y	Y	Y
Jumbo frames	Y	Y	Y
STORAGE			
Shared storage: Support of iSCSI, FC and NFS shared storage infrastructure	Y	Y	Y
Device support: All storage hardware certified for Red Hat Enterprise Linux	Y	Y	Y
Storage multipathing: Redundant path to storage for fault tolerance and enhanced performance	Y	Y	Y
Local disk support	Y	Y	Y



ADDITIONAL INFORMATION

All information in this document concerning Red Hat Enterprise Virtualization for Servers was accurate as of January 2012. There may be changes in the current release. Please reference the release notes for your installed version. All information concerning products from other manufacturers was taken from publicly available materials as of January 2012 with no warranty as to its accuracy. Please check manufacturers' websites for the latest information and specification on their products.

WHAT'S NEXT?

For more information, access www.redhat.com/rhev or contact your local Red Hat reseller.

ABOUT RED HAT

Red Hat, the world's leading provider of open source solutions and an S&P 500 company, is headquartered in Raleigh, NC with more than 70 offices spanning the globe. Red Hat provides high-quality, affordable technology with its operating system platform, Red Hat Enterprise Linux, together with cloud, virtualization, applications, management, storage and service-oriented architecture (SOA) solutions, including Red Hat Enterprise Virtualization and JBoss Enterprise Middleware. Red Hat also offers support, training and consulting services to its customers worldwide. Learn more: <http://www.redhat.com>.

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