

RED HAT ENTERPRISE LINUX WITH SMART VIRTUALIZATION

DATASHEET

“Serving Sears members is our top priority, and one way we do that is by keeping our online services at the forefront of innovation, ensuring that our platform is both highly scalable and functional. Transitioning to Red Hat Enterprise Virtualization enabled us to maintain that edge, while giving us the opportunity to replace our proprietary solution without sacrificing either the speed or efficiency of our operation.”

YIANNI GEORGAKAS
DIRECTOR OF SYSTEMS ENGINEERING
— ECOMMERCE, SEARS HOLDINGS
CORPORATION

INTRODUCTION

Red Hat® Enterprise Linux® has been delivering performance levels that IT organizations trust and rely on for more than 10 years. In the same way, Red Hat Enterprise Virtualization has taken organizations beyond bare metal to meet critical virtualization demands for today – and the future.

Building on these foundations, Red Hat Enterprise Linux with Smart Virtualization combines these products to help organizations virtualize mission-critical applications while delivering unparalleled performance, scalability, and security.

KEY BENEFITS

PERFORMANCE

Red Hat Enterprise Virtualization is built on the KVM hypervisor, a leading open source hypervisor platform. According to independent benchmarking results published by SPECvirt_sc2013,¹ the KVM hypervisor has achieved record-breaking performance benchmarks. This means that you can rely on Red Hat Enterprise Linux with Smart Virtualization to deliver the performance you need, independent of the selected hardware platform.

Additionally, Red Hat Enterprise Virtualization running on Red Hat Enterprise Linux delivers performance of more than one million I/O per second (IOPS) on a single virtual server.² This means that fewer virtual machines (VMs) are required to achieve the same results, saving on software costs and hardware resources without sacrificing performance.

SCALABILITY

Red Hat Enterprise Virtualization can quickly scale to meet evolving business demands. With host scalability of up to 160 CPUs and 4TB of RAM per host and comparable guest scalability up to 160 virtual CPUs and 4TB virtual RAM, you can virtualize even the largest x86_64 systems. Almost any workload on bare metal can be virtualized on Red Hat Enterprise Virtualization and scale without limitations (with cluster support of up to 200 hosts).

EXTENDED HARDWARE SUPPORT

Red Hat Enterprise Linux has a rich ecosystem of hardware platform vendors. This ensures that the latest hardware features are rapidly adopted in Red Hat Enterprise Linux. And since the Red Hat Enterprise Virtualization hypervisor shares a common kernel with Red Hat Enterprise Linux, you can utilize a wide variety of certified hardware platforms and the hypervisor inherits features without additional engineering when new features are added to Red Hat Enterprise Linux.



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¹ Based on SPECvirt_sc2013 benchmark results as of July 20, 2015. All benchmark comparisons based on benchmark addressing performance evaluation of datacenter servers used in virtualized server consolidation at https://www.spec.org/virt_sc2013/results/specvirt_sc2013_perf.html. SPEC® and the benchmark name SPECvirt_sc® are registered trademarks of the Standard Performance Evaluation Corporation..

² Khoa Huynh, Ph.D, Andrew Theurer, Dor Laor, Red Hat Enterprise Linux KVM Hypervisor I/O, August 2012

“We see a clear ROI from our use of Red Hat Enterprise Virtualization, not only from the hardware savings, but also from manpower efficiencies due to how fast we can spin up clusters and deploy virtual machines. And our software licensing costs are dramatically less with Red Hat Enterprise Virtualization as well.”

MICHEAL WALTZ
UNIX/LINUX ENGINEERING GROUP,
QUALCOMM

In addition, continuous tuning and optimization of Red Hat Enterprise Linux immediately benefits Red Hat Enterprise Virtualization, so you get the best of both worlds: a ready base of hardware platforms that are continually enhanced and expanded.

ENHANCED SECURITY

Virtual environments have unique administrative and security threats that must be contained in an efficient and secure process. The security features of Red Hat Enterprise Virtualization include Red Hat Secure Virtualization (sVirt) and proven Security-Enhanced Linux (SELinux) technologies. SELinux, first deployed in Red Hat Enterprise Linux 4.0, was developed by the National Security Agency (NSA), Red Hat, and the open source community.

The Red Hat virtualization architecture treats each virtual machine as its own process that is managed by a kernel-level hypervisor. Since each virtual machine is a process that can be labeled by SELinux, it establishes a security boundary around each virtual machine. This security boundary is monitored and enforced by the kernel, restricting the virtual machine's access to resources outside of its boundary, such as host machine data files or other virtual machines.

sVirt adds to SELinux's labeling capabilities and provides additional benefits for security administration, preventing administrators from creating manual labeling errors that can compromise virtual machines.

CENTRALIZED MANAGEMENT

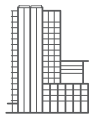
Red Hat Enterprise Linux with Smart Virtualization includes Red Hat Enterprise Virtualization Manager, a centralized management feature with a search-driven graphical interface. Red Hat Enterprise Virtualization Manager oversees the physical and logical resources of the Red Hat Enterprise Virtualization infrastructure and supports up to hundreds of hosts and thousands of virtual machines.

COST SAVINGS

Combining Red Hat Enterprise Virtualization and Red Hat Enterprise Linux is the best solution for virtualizing workloads running on Red Hat Enterprise Linux with unlimited guests. The bundle is offered with significant cost savings over purchasing the products separately. This cost saving is in addition to the existing savings that organizations realize when they free themselves from costly vendor lock-in that comes with proprietary solutions.

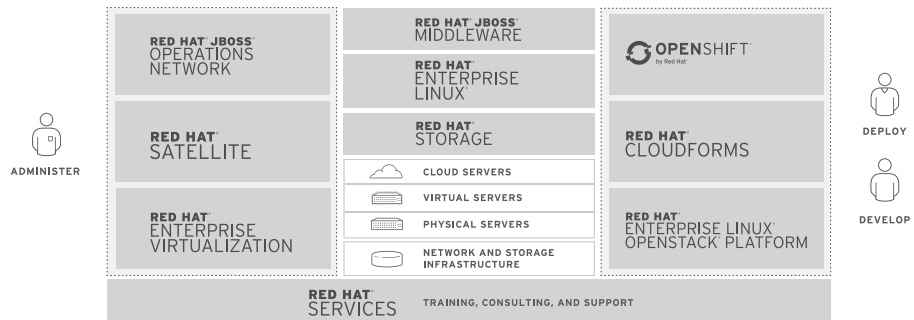
CONCLUSION

If your organization is already running Red Hat Enterprise Linux and you want to see your virtualization performance take off, the natural choice is Red Hat Enterprise Virtualization. Benefit from a virtualization platform that takes advantage of many of the Red Hat Enterprise Linux features that have enabled your organization to deliver outstanding service levels while you focus on adding value for your customers.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.



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