

# Linux in the Data Center

## *Red Hat announces turnkey data center solution based on latest version of its OS.*

Originally known for its use in servers, the open-source Linux operating system has been steadily applied to a wider variety of hardware, including desktop computers, supercomputers, mainframes and devices such as cell phones. Applying Linux in the data center is a natural progression.

Red Hat staked a claim to the data center with the recent release of the latest version of its flagship operating system. Version 5 of Red Hat Enterprise Linux (RHEL), released in March 2007, features new support for server virtualization along with a many other updated open-source components. At the same time, the company announced the availability of a turnkey data center platform that combines RHEL 5 technology with comprehensive professional services and training.

### **All in One**

The company claims its Red Hat Data Center Solution has everything needed to implement a new data center or migrate an existing data center to open source. The solution includes RHEL Advanced Platform, systems management, provisioning, high availability, identity management, consulting and training services. Two versions are available, one for small and one for

large data centers.

The key change that pushes this latest version of RHEL into the data center is the fact that the Xen virtualization application is now embedded in the operating system. Xen is an open-source virtualization application (hypervisor) spun out from the University of Cambridge and developed and maintained by XenSource. Xen allows multiple operating systems to run concurrently on the same physical server, reducing data center complexity and cost of ownership.

### **Managing Virtualization**

Having virtualization is one thing, but organizations also need the tools to manage it. For many organizations, traditional virtualization products have failed to provide a complete solution that enables them to enjoy the benefits of a fully virtualized IT infrastructure. Some products provide server virtualization, while others provide storage virtualization. Integration is minimal, performance is poor, complexity is high, management tools are inconsistent and users aren't satisfied.

RHEL Advanced Platform integrates server and storage virtualization technologies into a single product, and delivers advanced management capabilities that have grown out of Red

Hat's involvement in an open-source hypervisor management project called "libvirt."

As the name suggests, libvirt is a set of software libraries for managing virtual machines. Red Hat, IBM, Novell, Bull, VMware and others are contributing to this project, with the goal of creating a single tool that not only spans Xen hypervisors that support Linux but any hypervisor running on any platform.

Red Hat has developed two tools that ride on top of libvirt. One is called Virsh, which is a virtualization shell with the command line interface that system administrators will use, and the other is called Virt Manager, which is a graphical user interface for less-experienced users. Both tools can be used to create virtual machines in RHEL 5, as well as for allocating CPU, memory and I/O resources to them.

In addition to the new virtualization capabilities, RHEL Advanced Platform provides additional data center functionality with the Red Hat Cluster Suite, which provides application and guest operating system failover capabilities. Applications can be moved between guest operating systems on the same or different physical systems, and entire guest operating system environments can be moved between physical systems. Applications can be monitored for correct behavior and the results used to trigger automated recovery procedures.



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