Beth Israel Deaconess Medical Center found its 2-person Red Hat® Enterprise Linux® support team stretched too thin. Having migrated to the Red Hat Kernel-based Virtual Machine (KVM) hypervisor some years earlier, Beth Israel decided to migrate to Red Hat Enterprise Virtualization 3.1 to ease provisioning and management of critical core clinical system environments.

“Red Hat Enterprise Linux running on Red Hat Enterprise Virtualization provides us with a reliable management tool that enables and enforces our server deployment and operational standards without increasing administrative overhead, such that we can immediately have 7 systems engineers working consistently instead of 2, and it is not limited to only Linux hosts.

ROBERT HURST
CACHE SYSTEMS MANAGER,
BETH ISRAEL DEACONESS MEDICAL CENTER

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EASY-TO-USE VIRTUALIZATION MANAGEMENT TOOL NEEDED FOR FAST PROVISIONING

Beth Israel Deaconess Medical Center is a leading patient-care, teaching, and research hospital affiliated with the Harvard Medical School. A 2-person team is responsible for the virtualized Red Hat® Enterprise Linux® environment, the foundation for the medical center’s core clinical systems. Built on the InterSystems Caché database, these virtualized systems support physicians’ clinical activities such as ordering lab tests, writing prescriptions, and dispensing medications.

Robert Hurst, the Caché systems manager, and Matthew Ghofrani, the principal systems engineer, make up this 2-person team, and they alone possess the advanced skills required for provisioning new machines, overseeing upgrades, and managing integrations in the virtualized Red Hat Enterprise Linux-based environment. They have found themselves stretched increasingly thin over the years, owed largely to the number of enterprise Linux applications moved out of proprietary UNIX (Caché and Oracle) and new applications Beth Israel has purchased, including CommVault, Ensemble, and Pinpoint.

“We knew we needed 1 management tool for the licensing and the provisioning of our Red Hat Enterprise Linux environments,” said Hurst. “It had to be easy enough to learn and use so that we could extend privileges to other systems engineers, who are idle when we need to provision or manage our Red Hat Enterprise Linux machines.”

Beth Israel committed early to virtualization to realize the cost, space, and power savings that virtualization offers. Prior to 2008, the Beth Israel clinical systems ran in a virtualized HP/UX environment on HP SPARC systems. When HP decided to move to an Intel Itanium-based architecture, Beth Israel decided to switch its operating system to Red Hat Enterprise Linux and the Xen hypervisor.

Several years later, when Red Hat released its virtualization roadmap, Beth Israel moved to the Red Hat Kernel-based Virtual Machine (KVM) hypervisor. Currently, Beth Israel has 4 IBM BladeCenter systems that contain 56 physical machines and more than 50 virtual machines. Red Hat Enterprise Virtualization Manager allows Beth Israel to continue using their existing assets and deployment standards; booting from SAN using diskless blades and IBM’s Advanced Management Module are supported by Red Hat Enterprise Virtualization Manager clustering.

RED HAT ENTERPRISE VIRTUALIZATION MANAGER 3.1 SOLVES THE CHALLENGE

Hurst was interested in upgrading to Red Hat Enterprise Virtualization 3.1, a centralized management system for administering and controlling all aspects of a virtualized infrastructure, when it became available. He corresponded with Red Hat about his requirements and agreed to work with Red Hat on a proof of concept using the new version.

“Our goal with the proof of concept was to greatly simplify the upgrade cycle and expand provisioning and management duties to other system engineers so we could take some of the pressure off of Matthew and myself,” said Hurst.

Particularly appealing to Hurst was Red Hat Enterprise Virtualization Manager, which manages both Red Hat Enterprise Virtualization Hypervisors and Red Hat Enterprise Linux hosts with the KVM hypervisor, delivering leading performance and scalability for virtual machines on a platform stable and secure enough for organizations’ most mission-critical workloads.
“Depending on high-level engineers like Matthew and myself to handle all Red Hat Enterprise Linux environment duties was very costly from an operational perspective,” said Hurst. “Then there’s the operational risk of having just two people running our core systems. We hoped that Red Hat Enterprise Virtualization Manager could solve this.”

EXTENDING PROVISIONING AND MANAGEMENT CAPABILITIES, REDUCING COSTS

After the release of Red Hat Enterprise Virtualization 3.1 in December 2012, Hurst began the five-month proof of concept, intending to answer 2 questions in particular. First, was the user interface friendly enough? And second, what kind of management integration would be required with Beth Israel’s existing assets?

“Both questions were answered utterly to our satisfaction,” said Hurst. “Red Hat did a bang-up job on the interface. And it integrated well with our IBM BladeCenter assets.”

After a successful proof of concept, Hurst began to roll it out over his smaller virtual machine farms, planning to standardize it over all farms as the team matures and gets familiar with the technology.

Red Hat Enterprise Virtualization deployed and integrated easily and worked with the business’s key assets. It was well-received by the system engineers, who are now charged with performing Red Hat Enterprise Linux provisioning and management.

“We’re excited that we can tell them, ‘You don’t have to call us anymore; you can manage your own environment.’ They feel both more comfortable and more empowered by this,” said Hurst.

One of the most compelling results of the move to Red Hat Enterprise Virtualization is easier and faster reporting. Before, the team would have to walk around from host to host, executing commands and scraping data off the screen or writing special Java applications. Now, Hurst reports the ability to get documentation in real time.

Moving to Red Hat Enterprise Virtualization will also help with capital overhead in the long run. Hurst expects the move to Red Hat Enterprise Virtualization to pay for itself within six months.

“As blade servers go through another generational change, we’ll be able to put more into less,” said Hurst. “That consolidation will mean fewer machines for us to own and configure, and just like any other virtualization effort, will result in less complexity, fewer management duties, and lower aggregate costs.”

MEETING HEALTHCARE INDUSTRY NEEDS WITH HIGH AVAILABILITY AND TRANSPARENCY

The healthcare industry has unique needs that Red Hat Enterprise Virtualization Manager has helped Beth Israel meet. In a medical center—and especially in its clinical systems—high availability is critical, and engineers must be able to proactively manage environments before problems occur. Perhaps most importantly, the new system will help Hurst make sure Beth Israel meet its compliance mandates.

“In healthcare, we have to put rigorous controls in place to ensure that data isn’t breached and patient privacy isn’t violated,” said Hurst. “Right now, we have paper trails and people with good intentions, but no technology that helps us with the oversight. Red Hat Enterprise Virtualization Manager will help us with that transparency with its extensive reports.”
BETH ISRAEL'S FUTURE WITH RED HAT

Hurst sees Red Hat Enterprise Linux and Red Hat Enterprise Virtualization as being the standard environment in five years.

“Red Hat Enterprise Linux running on Red Hat Enterprise Virtualization provides us with significant performance, security, and productivity benefits,” he said.

ABOUT BETH ISRAEL

Beth Israel Deaconess Medical Center is a fully integrated medical center providing adult services from cardiology to obstetrics, gastrointestinal disorders to cancer care. Beth Israel is also home to a renowned academic research program, where scientific discoveries help to transform medical care, and its 1,250 full-time physicians constitute almost a quarter of the Harvard Medical School’s faculty.

ABOUT RED HAT

Red Hat is the world’s leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 70 offices spanning the globe, empowering its customers’ businesses.