



# UNCOVER THE BENEFITS OF VIRTUALIZATION

Improved Productivity, Increased Responsiveness, and More Than \$5 Million in Annual Savings

By Mark Settle, Chief Information Officer, BMC Software

BMC Software's IT organization, like many, began its virtualization and automation journey with some key objectives. We wanted to help IT become more responsive to business needs, and we wanted to better understand how the assets that the IT organization manages support the business. We were pleasantly surprised to discover significant side benefits that far exceed the objectives of our original plan. These benefits include dramatic labor savings and productivity improvements through automation — achievements that help make our software developers much more responsive to business needs at a time when all IT organizations must be especially focused on staying ahead of the curve.

Our IT organization achieved the typical “virtues of virtualization,” such as reducing costs by improving asset utilization. In 2008, reusing servers saved more than \$5 million. These efforts also reduced power consumption and requirements for floor space by 20 percent. The financial payback of this investment in virtualization, which was approximately \$2 million, was achieved *in fewer than six months*.

In addition, our ability to meet the service level agreements (SLAs) for making assets available for routine development requests improved significantly, and response times for R&D development environments became much faster and very predictable. Software development teams became less possessive of “their” assets, and they accepted the benefits of using pooled resources. We now use standard inventory

management metrics, such as fill rates, inventory turns, and inventory working capital, to manage R&D assets in a pooled fashion with temporary rights of ownership for individual project teams.

Developers now enjoy a shorter wait from the time they identify a need for equipment to the time they have the equipment, so they can proceed with their work. They also have realized the advantage of standardized requirements. When people can access resources in a timely manner, they don't feel the need to hoard them. Although it's difficult to precisely estimate the time savings associated with the new process, lead times for individual requests have been reduced by at least 10 - 15 workdays. This is equivalent to a collective reduction in lead times of 360 work months per quarter.

## Getting Started

Our original objectives were to reduce server sprawl in an environment where IT resources span multiple geographies, and to improve productivity by reducing response time to developer requests. The initiative focused on employing state-of-the-art service request management, hardware virtualization, and system monitoring technologies to manage server and storage assets on a pooled basis. This approach created an in-house, on-demand, cloud computing environment for the BMC R&D team and provided them with just-in-time access to data center resources — which include an asset pool of approximately 7,000 physical servers and 30TB of storage — required to conduct product development projects.

of multiple servers and storage volumes. Without this provisioning capability, more than 100 development projects encompassing a community of more than 1,500 developers worldwide could be impacted by delays in server availability.

## Reaping the Benefits Through BSM

Business Service Management (BSM) is an approach and unified platform for managing IT according to business priorities. We followed this approach — which was developed by BMC — with our technology and processes, and we subsequently reduced the number of physical servers by almost 50 percent over two years. In addition, we exceeded our productivity goal by managing everything in our infrastructure — spread

throughout multiple geographies — as a single data center. When IT organizations make decisions to leverage virtualization, it's important to consider the capacity they provide to various regions. For example, if a company has 1,000 employees in Asia Pacific and 10,000 employees in North America, those regions will need different levels of capacity.

BMC's IT group can now provision assets for the developer team much more quickly (95 percent of requests that previously took four weeks now are fulfilled in two days).

An additional benefit is that data center operators now have a better understanding of how the assets they manage are being used by individual development teams.

Virtualization also increases efficiencies by enabling automation and self service. With standard configurations, developers can automate the provisioning of virtual machines (VMs) with run-book scripts. We are striving to have 30 percent of the requests handled through developer self service by the end of this year.



The financial payback of this investment in virtualization, which was approximately \$2 million, was achieved in fewer than six months.

We implemented IT Infrastructure Library® (ITIL®) V3 processes for capacity management, availability management, service level management, and service reporting to obtain the maximum business benefits from the technologies deployed. These integrated management processes were linked to our hardware procurement procedures to ensure that excess server and storage capacity is available to satisfy developer requests. For each project, the developers typically require eight to ten discrete environments that consist

In addition, the reuse of more modern equipment in the R&D asset pool resulted in the retirement of older and obsolete equipment that was difficult and expensive to support, further improving the productivity of R&D staff members and decreasing support costs.

## Key Success Factors

It's important that management commit to making some surplus capacity or headroom available to avoid slowdowns when known spikes could impact access to needed resources. Having this headroom available provides flexibility and ensures IT's ability to fulfill requests quickly. In turn, this flexibility enables the business to be more competitive and proactive.

To make this approach to managing access to resources work, internal processes should be automated wherever possible. At BMC, provisioning requests are created, monitored, and fulfilled through the BMC IT Service Management Request System. In the past, these requests were routed to the IT Infrastructure Engineering team and were handled on a case-by-case basis. Now, IT offers a standardized catalog of resources to the R&D staff, and members of IT's operations team perform the provisioning process using standard configuration templates whenever possible. In the future, thresholds will be used to automatically trigger the asset recovery process if assets are not used within a specified period of time.

Management buy-in of this pooled resources concept is critical so that developers fully understand the importance of using a standard configuration in an established virtualized environment versus a customized configuration. As developers become aware of the advantages of having rapid access to resources that can provide them with standardized configurations, they will be more likely

to embrace this concept. For BMC, the savings associated with this new asset management process reduced the lead time for individual requests, as discussed earlier.

## Closing Thoughts

If you plan to move to a virtualized environment, it's important to look on your own shop floor for underutilized equipment. Create your own internal "private cloud" to help you respond to business needs. Any IT organization can benefit from a virtualized environment. If your company operates in multiple geographies, you can run multiple instances of the same package by virtualizing your infrastructure.

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Look for unexplored opportunities: If you have spikes in demand — such as at the end of a quarter — but you need permanently assigned hardware to meet those spikes, you could employ virtual servers to limit electrical consumption during low-demand periods.

Obviously, virtualization provides an excellent opportunity to reduce server sprawl and improve capacity management. But don't overlook the side benefits: improved productivity and, ultimately, increased responsiveness to support business requirements.

For more information about BMC solutions, visit [www.bmc.com](http://www.bmc.com).

**ABOUT THE AUTHOR**

Mark Settle joined BMC Software in June 2008. He has served as the CIO of four Fortune 300 companies: Corporate Express, Arrow Electronics, Visa International, and Occidental Petroleum.



Settle has worked in a variety of industries, including consumer products, high tech distribution, financial services, and oil and gas. During the early stages of his career, he was the director of a systems integration business unit within Hughes Aircraft Company. Settle's formal training is in the Geological Sciences. He received his Bachelor's and Master's degrees from MIT and a PhD from Brown University. Settle is a former Air Force officer and NASA program scientist.

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