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> *Enterprise Storage Architect*
> *BMC Software*

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SUCCESS STORY

BMC Software Partners With Hitachi to "Rewrite the Code" on Effectively Managing Globally Dispersed Data Centers

bmcsoftware

BMC Software

A top contender in the software industry, BMC has an impressive reputation for pertinent innovation and technology acumen, helping to solve big business IT challenges across data centers everywhere. To decode its own storage growing pains, BMC partnered with Hitachi Data Systems for strategic consolidation, visibility and cost-efficiencies across 8 data centers and almost 2PB of storage. Key solution elements included Hitachi Virtual Storage Platform, Hitachi NAS Platform and Hitachi Command Suite.

BMC Software is dedicated to helping businesses run better by bettering how IT is run. Established in 1980 and headquartered in Houston, Texas, BMC specializes in IT management software and solutions for distributed, mainframe, virtual and cloud environments. BMC Software simplifies, standardizes, automates and integrates IT operations to successfully align with business needs.

With its seasoned technology acumen and keen customer service, BMC helps many thousands of customers, including most Fortune 500 U.S. and Forbes Global 100 companies, to reduce risks and cost-effectively achieve their business goals. The company's most significant assets are its workforce of highly skilled software engineers and its extensive intellectual property, including nearly 140 software technology patents.

When it comes to software savvy, BMC offers an amplitude of proven, innovative applications. The company has developed several hundred software applications. It runs the business on much of its own software, including a private cloud computing environment for developing applications. BMC offers consulting, implementation and integration of its products through direct sales, and channel and OEM partners.

Plan and Scope for a Better Storage Design

In software development, engineers usually begin with planning, scoping and analyzing the requirements in order to begin the design. By scoping the IT infrastructure, BMC assesses not only what systems are in place across enterprise locations, but also what improvements are required for optimal and efficient performance.

BMC Software

INDUSTRY
Technology

SOLUTION
Enterprise Platform, File and Content

HARDWARE
Hitachi Virtual Storage Platform (5), Hitachi NAS Platform 3080

SOFTWARE
Hitachi Command Suite, Hitachi Tiered Storage Manager, Hitachi Tuning Manager

SERVICES
Implementation and Training, and Data Migration services provided by Hitachi Data Systems Global Solution Services

Benefits at a Glance
- One interface to manage all storage.
- Substantial savings on maintenance and support.
- Performance improvements across the board.

⊚ **Hitachi Data Systems**

The software giant has large contingencies of VMware environments for both Microsoft® Windows® and Linux, with more than 20,000 virtual machines across 6,000 physical servers just in the R&D department. Several UNIX environments are also ensconced throughout BMC data centers. Running on all these platforms is BMC software, whether for development, testing, quality assurance or production needs.

Because it is a global corporation, ensuring uptime is mission-critical for production, testing and other business environments. But safeguarding high availability has not been easy for BMC's growing, morphing storage environments. With 8 data centers around the globe and numerous research and development teams, BMC has inadvertently amassed hundreds of storage devices, and consequently, an untallied number of different storage management tools.

"While we are about 70% virtualized across the organization, from a storage management perspective, we were dealing with something of a nightmare. We had thousands of LUNs, tons of local storage and various systems that might have been added for a particular R&D project. Storage had grown very complex and had become time consuming to support, and costly to maintain, too," says John Baran, enterprise storage architect for BMC.

Among the difficulties of managing disparate storage environments, BMC had serious issues with latency, performance and stability. With an estimated nearly 2PB of storage scattered across the enterprise, a more cohesive storage plan was needed. According to Baran, the BMC IT organization was deeply intent on creating a single enterprise storage solution for each data center and explains why BMC enlisted Hitachi Data Systems to help.

"We had hundreds of different storage devices, from every major vendor. It was critical for us to reduce storage and maintenance costs, and we wanted to improve services for customers. We selected Hitachi Data Systems as our primary storage vendor for its reputation for reliability and performance. In Hitachi, we saw an enterprise storage solution that would truly meet our uptime needs," he explains.

Code and Test for a Tier 1 Enterprise Solution

BMC Software chose to strategically address enterprise storage for the immediate issues and its longer-term goals. The solution is based on Hitachi Virtual Storage Platform (VSP), Hitachi NAS Platform (HNAS) and Hitachi Command Suite (HCS).

"We selected the Virtual Storage Platform over everything out there because nothing else comes close to the uptime and Tier 1 performance it can deliver," says Baran. "And from a management standpoint, we really didn't have visibility: not across an individual data center and, of course, not across the enterprise. With Hitachi

Command Suite, we have one management interface across all the storage."

BMC has purchased 5 Virtual Storage Platforms for its busiest data centers, with near-future plans to install a VSP at each of the remaining locations. Each VSP was configured with between 90TB and 200TB of usable capacity, and most are running 900GB, 10k RPM SAS drives. Each VSP has been employed to consolidate and streamline storage, by virtualizing existing multivendor storage systems, migrating everything off the older storage systems, which will then be retired.

Virtual Storage Platform is designed to alleviate the complications and expense of juggling data silos, quality of service requirements, and application demands. At the same time, it improves ease of administration and cost efficiency. This flagship platform delivers tremendous flexibility for performance and capacity across all data types and extends underutilized heterogeneous storage, too. Simplifying the ins and outs of daily storage life, especially in a large organization, is essential to improving overall IT

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and better aligning with business objectives. VSP dynamically moves block, file and content data across virtual tiers of storage, with host-transparent migration, highest performance and lowest power consumption.

To orchestrate a highly unified storage environment, Hitachi Command Suite steps in with a comprehensive framework for simpler provisioning, automated management, and end-to-end server and storage virtualization capabilities. HCS centralizes advanced data management tasks to improve storage operations and resiliency. Its intuitive GUI and tight product integration allows administrators to more effectively support larger enterprise data center challenges. Native intelligence helps reduce the number of steps and time necessary to manage storage, reduce risks, and improve productivity. HCS tools enable IT to quickly discover the storage environment, provide visibility along the pathways of each application through the network, and unify everything under a single interface.

BMC also implemented a 2-node clustered Hitachi NAS Platform 3080 at its Houston headquarters to handle VMware gold images of software development and product validation testing. HNAS delivers best-in-class performance and scalability for multiprotocol file sharing, backup, replication, archiving and more. By efficiently consolidating capacity across many applications, HNAS can simplify storage management without sacrificing performance or scalability. BMC is migrating old storage from Linux boxes via CIFS and NFS to 2GB SAS drives on HNAS.

Deploy and Maintain Success With Hitachi Reliability

The Hitachi solution at BMC was initially implemented in April 2012, beginning with installation of Virtual Storage Platforms in Houston and Austin, Texas, data centers. Hitachi Data Systems Global Solution Services was involved with implementation services, data migration services, and training to BMC staff.

"Hitachi was great at helping us with the first 2 data center installations and then providing us

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with expert knowledge transfer. This enabled us to roll out Hitachi to the other data centers. We've implemented VSPs in Phoenix, San Jose and India so far," Baran mentions. "It would be safe to say that quarterly storage growth at BMC has typically run about 50TB. Every quarter since deploying Hitachi, we've been able to proficiently migrate data and applications off old arrays to the VSPs and then retire the old systems, saving us substantially on maintenance and support costs."

Virtual Storage Platform uses virtualization rather than host-based migrations, which speeds data migrations and shrinks the typical risks and downtime for noticeable improvements at BMC. The software company now houses most all of its data and applications on Hitachi systems, from production and payroll to software development and external facing websites.

"Everything is running on Hitachi or moving to Hitachi. We've seen real positive performance improvements across the board, and absolutely no downtime. The VSP allows us ample flexibility and stripes all the drives, so we really see that performance uptick. And we get a lot fewer complaints from end users," Baran continues.

From the storage administration standpoint, BMC is well poised to continue reducing

operating expenses. "In the past, we struggled with not having enough day-to-day IT coverage or backup across all of the sites and time zones. The older storage had understandably older technology, and it was very difficult to manage. Now we are all trained and knowledgeable on Hitachi and we have one interface to manage all storage. We have one person on each major platform, which has significantly simplified administration, increased time available to work on other priorities, and reduced complications and risk. Honestly, it's a complete 180-degree difference in how we're able to manage, plan and reduce costs," he details.

What is next for the software innovator? "At BMC, we are always moving forward, reimagining how to improve the business of IT. For our data centers, we will continue consolidating storage each quarter and deploying a VSP at the remaining sites. Eventually, when everything is migrated and running on Hitachi, we will possibly consolidate the number of data centers and replicate to a central data center or co-location facility. We will get to a point where we're able to universally replicate, with a combination of Hitachi and VMware, for the best disaster recovery scenario," says Baran. "For now and the future, we are set, with the right storage partner and enterprise solution."

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