nimblestorage

San Diego Convention Center Corporation Tames Primary Storage

Flash-optimized storage from Nimble hosts all virtual machines and makes access to customer data nearly instantaneous.

For the San Diego Convention Center Corporation, storage tiering is a valid concept but not an effective option. Over ten years of data—exacting records capturing the details of clients' visits to the greater San Diego area from all over the globe—resides in primary storage on the convention center's storage server. Data from a client's event in 2001 may have to be quickly accessible if the client returns in 2011—mandating a large, rapidly growing and increasingly costly data set to manage. Or the bigger question: "How can any customer data be restored instantly within a highly virtualized application environment?"

With the convention center's data stores growing, executives had other pressing concerns too. Business continuance in the event of a disaster was a looming issue, as was the need to "become greener." Storage virtualization was emerging as a viable technology for reducing both capital and operating expenditures, but four servers were playing host to 50 virtual machines and application performance had dropped precipitously. That's when IT executives put a Nimble CS220 flash-optimized storage array to the test. In a matter of weeks after adoption of the Nimble array, performance issues had vanished and costs were once again under control.

Performance is Key to Successful Virtualization

Eric Myers, network engineer for the Center, notes that the prerequisite to consolidation of IT platforms was the raw performance that the new architecture could deliver—as measured not only by IOPS, or Input/Output Operations per Second, but also by achievable data compression. "Nimble blew away the competition," said Myers. At the outset we achieved approximately 15 times the performance of our previous systems, and substantially greater performance than other systems we had considered. And we're getting data compression of 40 percent across the board. That's phenomenal."

And that's the kind of performance and efficiency he needed – but hadn't expected to find – when scoping the challenges of virtualizing multiple Exchange 2010 servers, SQL server databases, the convention center's CRM application, and a proprietary convention center database, along with web servers, domain controllers, and DNS servers.

He added that the move to Nimble took place after a consideration of cloud storage options. "Nimble's innovative architecture is optimized for both flash and high-capacity disk. That fact, together with the additional features and functionality the CS220 offers, made the move to Nimble obvious. Storage of terabytes of data in any cloud implementation would have been prohibitively expensive. Nimble showed fantastic ROI over every cloud option we considered."

Snapshots Solve the RPO Challenge

According to Myers, the performance gains alone helped to justify the investment in Nimble, but, even then, performance was not his top qualifier. "As important as performance was to our plans, it was clearly secondary to our ability to instantly revert to any previously stored data snapshot."

Storage Profile: San Diego Convention Center Corporation

Challenges
- Growing storage-capacity requirements
- Performance degradation resulting from virtualization
- Unrestrained operating cost increases

Solution
- Deploy a Nimble CS220 flash-optimized storage array

Immediate Benefits
- Dramatic improvement in application performance
- Reduced storage costs
- Recovery point objectives made achievable

Long-Term Objective
- Scale to accommodate growth and expanding data capacity requirements
- Deploy a second Nimble array for disaster recovery

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"The ability to store 90 days of snapshots was critical to meeting our recovery point objectives (RPOs)." With the freedom to return to any snapshot from the previous 90 days, his staff now could perform immediate restores of any number of VMs. With storage snapshots providing a critical complement to the convention center's conventional weekly backups, IT staffers now had the luxury of storing snapshots of iterations between backups.

Staffers also find snapshots easy to manage from the Nimble management console. "The console is very straightforward and intuitive—much more so that any I've seen," said Myers. "It also meets our requirements for being non-intrusive. It's a blessing; with a logical system architecture and an intuitive GUI, we can also realize our goal of reducing system monitoring to a minimum."

The Nimble management console presents a full complement of storage parameters, from current performance and throughput to compression ratios, event summaries, and available disk space.

Next Steps

With dozens of performance-intensive virtual machines running smoothly on the single CS220 Nimble array, Myers' goal is to add a second array for offsite replication and to eliminate the need for offsite tape and disk storage. "That goal is just over the horizon," he said. "I expect that the Nimble system will deliver a full return on investment in approximately six months. That kind of ROI makes it easier and more justifiable to deploy offsite disaster recovery."

He also sees virtual desktop technology as a goal, even if not a part of his current IT road map. At the point of deployment, after he is confident that VDI technology has matured, his IT staff expects to benefit from the Nimble CS220's zero-copy cloning feature, which will allow the array to support scores of virtual desktops while requiring no additional storage capacity.

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San Diego Convention Center Corporation

The mission of the San Diego Convention Center Corporation is to generate significant economic benefits for the greater San Diego region by hosting international and national conventions and trade shows in our world-class facility. The Convention Center has generated over $18 billion in economic impact since opening in 1989 and continues to support about 12,500 jobs countywide. In FY10, the Center hosted 165 events that generated $1.27 billion in regional economic impact and $20.2 million in hotel room and sales tax revenues.

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