With Nutanix, California Office of Emergency Services Supports Remote Office Operations Seamlessly

Company Background
The California Office of Emergency Services (Cal OES) helps local governments plan and respond to wildfires, earthquakes, bombs, terror threats, pandemics and every other natural or manmade disaster that can impact America’s most populous state. Cal OES operates out of two primary locations, with scores of remote offices throughout California. The agency has a state-wide staff of employees, contractors and volunteers that total about 1,250.

Many Small Offices
For the last few years, Cal OES has been virtualizing operations, replacing standard rack servers with blades and network attached storage. That strategy, however, proved difficult to implement in the agency’s smaller offices, said Lovell Hopper, Manager, Infrastructure Services Section at Cal OES. “We have probably 100 small offices, basically in every county in California. When I say ‘small office,’ I mean as small as one person hooked up via a DSL line,” Hopper said.

In addition, blade servers and network attached storage were just too big to deploy for the larger locations as well. The hardware took up too much space, consumed too much power and was too noisy. There was also pressure from the state CIO to avoid additional datacenter buildouts. Nonetheless, Cal OES was committed to a vision of being able to add virtualized compute and storage in a building block fashion to support its applications, and in particular its 4-terabyte SQL enterprise deployment. This transition to a new compute and storage model had to be done while downsizing the agency’s datacenter footprint.

Nutanix – A Complete Solution
In evaluating possible solutions including HP Blade Servers and Dell, several seemed to be lacking important elements, Hopper recalled. Many, for instance, were software based and required users to supply the hardware. One problem with this approach was that it would have necessitated Cal OES largely building the solution itself, something beyond the agency’s resources.

Through a VMware session and through some technical forums, the IT staff became aware of Nutanix. Its converged storage and compute architecture offered the building block approach Cal OES desired without requiring it to construct and integrate the solution from basic components.

“Nutanix was one of the few we’ve run across, then or since, that provides the hardware and the software in a complete package,” Hopper said.

Moreover, the Nutanix solution is compact, a particularly important attribute given that it had to fit within a small footprint. The platform is SAN-free and offers high IOPS performance, owing to the use of solid-state storage and automated data tiering. This was a critical decision factor, given that one of the main applications was a SQL database that tends to be a high consumer of I/O throughput. Another benefit that comes with the Nutanix solution is that the solution can be expanded by simply adding nodes to the cluster. Additionally, the unified management under a single pane of glass was a critical factor in the decision as well.

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- Lovell Hopper
Manager, Infrastructure Services, Cal OES
Saving Money and More With Nutanix

Cal OES took the plunge, initially purchasing an NX-2000 Series appliance and later added newer NX-1000 Series appliances. Installation and configuration were extremely easy and quick. Running VMware, they now support applications including SQL Server, web applications, DHCP, DNS and anti-virus. A key value was the ability to consolidate several dedicated SQL servers onto one Nutanix platform. “The management console is very easy to use, straightforward and intuitive,” Hopper said.

With Nutanix, Cal OES has been able to achieve about 75% reduction in datacenter rack space as compared to the previous solution by consolidating 17U down to only 4U. Power usage has improved by upwards of 50%, and capital expenditures were cut by about 25%. The latter savings arise in part because it was no longer necessary to buy an expensive disk in order to hit performance requirements.

The performance that Cal OES is achieving with Nutanix has exceeded their expectations. “The agency has seen at least a 50% increase in IOPS,” Hopper said. Some of this is due to the Nutanix solution and some due to a simultaneous upgrade from a SQL 2008 to 2012 environment. The end result of both has been a noticeable improvement in performance.

Hopper noted that the support from Nutanix has been outstanding. They are very knowledgeable and helpful. At the same time, there has actually been very little need to seek support, a positive indication on its own.

One last benefit speaks directly to the mission of Cal OES. In the event of a disaster, the agency and its remote offices must continue to function. Thus, survivability and functionality in the event of a communications breakdown is vital. In that regard, Nutanix delivered in a way that is important but difficult to quantify.

“We were looking for and found in Nutanix a small virtualized server that had enough horsepower to virtualize seven or eight different processes with enough storage to be able to cache locally the data that they’re working on,” Hopper said. “If we have a disaster, we need our offices to be up and operational.”

Nutanix Recommended

With Nutanix systems in place, Cal OES is ready to meet new requirements in the future. “We have a very robust platform that can deploy services at a moment’s notice to branch offices. And we’re comfortable they have enough horsepower and I/O to handle anything we throw at them,” Hopper said.

Cal OES plans to migrate all of its Citrix XenApp and XenDesktops applications running on Hyper-V over to Nutanix. That phaseout of the existing HP-based solution should be complete by the end of 2014.

The Nutanix installation has been a very positive experience, according to Hopper. “With the Nutanix solution in place, we can now centrally manage the infrastructure which allows us to push the services faster to our end users. Our people sitting in the branch offices, away from our primary offices, are now saying that their branch office is actually treating them just as if they were in our main office.” “Compute and storage unification seems to be a natural progression in the industry, and the Nutanix product has implemented this very well. I have definitely recommended it to my peers in this industry and will continue to do so,” he said.

About Cal OES

Cal OES supports the emergency and homeland security management of communities and local governments in California from Oregon to the Mexican border. For instance, it owns 275 fire trucks, which local jurisdictions operate under agreements with the state agency. The agency works with both law enforcement and first responders. Visit www.oes.ca.gov for more information.

About Nutanix

Nutanix provides datacenter infrastructure solutions that are hyper-efficient, massively scalable and elegantly simple. The award-winning Nutanix Virtual Computing Platform has disrupted the market by seamlessly and natively converging compute and storage in a single appliance. Headquartered in San Jose, Calif. with offices and authorized solution providers throughout the world, Nutanix is privately held and backed by top-tier VC firms. For more information, visit www.nutanix.com.