Cochise County Virtualizes with Web-Scale IT and Hyper-V

Background

Cochise County is located in the U.S. state of Arizona. It has a population of about 132,000 and spans more than 4 million acres. It includes the historic city of Tombstone and is often referred to as the "Land of Legends". The county government provides many different public and safety services such as; law enforcement, courts, social welfare, housing, highway maintenance, schools and libraries. Visit www.cochise.az.gov for more information.

The Need for a Virtualization Environment from Ground Up

At the time Tyson Mock joined Cochise County as IT Director, his team faced the challenge of developing a plan to replace approximately 50 aging physical servers, many of which were more than 10 years old. The servers hosted all of the county's critical applications. Replacing them with new physical servers wasn't even a consideration. "I knew we needed to capitalize on virtualization. We wanted to deploy, cost-effectively, a new virtualized environment that would let us retire the old physical servers and move those critical applications into a stable, high performing, and easy to administer environment," said Mock.

Past experience with high cost and difficult to manage Fibre Channel SANs as well as mediocre performing iSCSI SANs lead Mock to pursue an alternative way to virtualize his environment. Mock decided to start with a clean slate. "I was looking specifically for non-traditional virtualization options that would lower costs, simplify management and not sacrifice performance or stability," he said.

Web-Scale Wins the Day

Mock discovered the Nutanix Virtual Computing Platform on the web while researching different options for their next generation infrastructure. He was intrigued by the patented Nutanix Distributed File System (NDFS) that combines compute and storage into a single distributed system and supports linear scalability. The Virtual Computing Platform's ability to start small and expand simply by adding nodes along with built-in resiliency also appealed to Mock. The use of local SSDs and automated data tiering for optimized performance also fit their needs for high performance."I was interested in high performance, especially because we wanted to virtualize SQL Server," said Mock. "NDFS leveraging SSDs would give us more horsepower to make sure performance is what we need it to be."

The team also evaluated another converged solution from a different vendor. However, the features were not as advanced as Nutanix nor did it deliver the simplicity they needed. Traditional servers and SAN were written off because the overall cost and complexity was just too high. They considered purchasing several

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- Tyson Mock, IT Director, Cochise County, AZ

Industry

Local Government

Business Needs

Cost-effective, easy to manage, fully redundant, virtualization environment to support business critical applications.

Solution

- Nutanix NX-3000 Series
- Microsoft Windows Server 2012 R2 with Hyper-V technology

Benefits

- 6:1 reduction in datacenter rack space
- 80% reduction in power and cooling expenses
- Faster application performance
- Easy to configure and low maintenance
- Single system with linear scalability

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large multi-core servers from a brand-name vendor to virtualize their environment. However, this model lacks redundancy and cannot easily expand compute and storage. “There was no redundancy built into the system, no ability to really leverage deduplication within the environment and it would not have been easy to scale. Adding more horsepower and more storage would have been very difficult too.”

In the end, the advantages of web-scale infrastructure, high availability and high performance won the day. “The GUI management interface and simplicity of managing the architecture was a key factor in our consideration as well. Given that we have limited staff on the team, we wanted something that we could build out with very little ongoing engineering and support. If we have any issues or engineering needs, Nutanix support will be there for us,” Mock added.

Virtualization with Hyper-V

Early on, Mock recognized the benefits of standardizing on Microsoft Windows Server 2012 R2 with Hyper-V as the hypervisor primarily because of its simplicity and functionality. Additionally, licensing costs were very attractive when looking at the datacenter edition. “When I evaluated the Hyper-V environment to my past experience with other virtualization platforms, I was impressed by how far Microsoft had come since the early days of Hyper-V. To me, what drove my choice of using Hyper-V was the overall value,” he said. Mock further added, “Nutanix has turned out to be a great platform to run Hyper-V on and has greatly simplified our datacenter without compromise. In fact, we’ve enhanced the stability of our environment, added full redundancy, increased performance, and can now easily scale the system up when needed - and we achieved all of this by actually decreasing our costs.”

Cochise County deployed two NX-3000 Series systems with two nodes each in their datacenter in Bisbee, Arizona. The systems are connected by 10GbE to Cisco switches. The setup was straight forward and did not take long, according to Mock. “The support Nutanix was able to provide was phenomenal. The installation went very smoothly.”

Many business critical applications are now being hosted on the Virtual Computing Platform. Applications currently running include; Microsoft SQL Server, System Center Configuration Manager and Virtual Machine Manager, file and print servers, and web services accessed by county employees and the general public.

Higher Performance, Smaller Footprint

Performance has been great. “System Center Configuration Manager is running extremely well,” said Mock. “It’s higher performing than my experiences with it in the past. Web serving is also much faster.”

The team’s goal is to virtualize over 90% of the County’s applications including the critical New World Systems ERP software they use. Once this project is completed, the number of datacenter racks will be reduced from 6 to only 1, eliminating all but a handful of the 50 original servers. They anticipate saving 80% on power and cooling expenses. “We are going to significantly save on electricity as well as cooling. This is going to change the dynamics of our datacenter pretty significantly,” added Mock.

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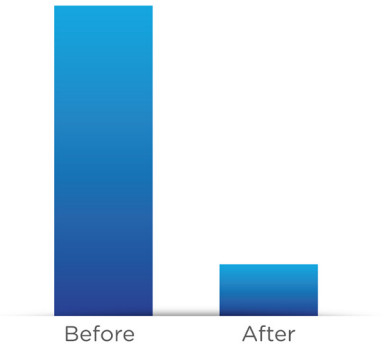
6:1 Reduction in Datacenter Rack Space Requirement



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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.