

Hyperconverged Systems Boost Performance for MS SQL, MS Exchange, Virtual Desktops, and Police Body Cam Video Systems



Harris County, Texas Office of the District Attorney Moves to Nutanix Acropolis

HARRIS COUNTY OFFICE OF DISTRICT ATTORNEY

With over four million citizens, Harris County is the most populous county in Texas and the third largest county in the United States. Under the leadership of Devon Anderson, The Harris County District Attorney's Office investigates and prosecutes approximately 110,000 criminal cases every year with a staff of over 300 Assistant District Attorneys and approximately 300 support personnel.

IT CHALLENGES

Rurik Wilmot & Ryan McCarroll are Senior Systems Administrators for Harris County. They are responsible for managing all of the IT infrastructure and services for the DA's Office. "Our IT environment consisted of individual rack mounted servers connected to a legacy SAN all being managed with VMware vSphere," Rurik explained. "The existing SAN occupied over one and a half racks in our datacenter. Performance of those legacy arrays had been adequate, but provisioning new VMs was always a big challenge. We also had aggressive plans to implement Citrix XenApp, XenDesktop, and Microsoft Lync for our users, as well as upgrade our existing email environment to Microsoft Exchange 2016. There was absolutely no way we were going to accomplish those goals with our existing storage arrays."

SEARCHING FOR STORAGE AND MORE

The DA Office's IT team started the search for a new storage platform in 2015. "I have been following Nutanix for several years, in addition to a few other hyperconvergence and flash vendors," Rurik said. "After evaluating several potential solutions, we narrowed our decision down to two different technology stacks. We were either going to go with the Nutanix hyperconverged systems, or choose a traditional three-tier architecture with servers, an all flash array solution, and high capacity deep storage. With the second approach, we would run our tier-1 SQL Server, MS Exchange, and other applications that needed higher performance on the flash systems, and everything else would be stored on the less expensive storage devices."

When they started adding up the costs of all of the different systems needed for the three-tier option, and looked at the manageability of the two approaches, the Dell XC730 powered by Nutanix emerged as the obvious choice. "The simplicity of the hyperconverged platform, the lower cost, and having just one vendor to call for support was the most attractive solution," Ryan shared.

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— Ryan McCarroll,
Senior Systems Administrator,
Harris County

NUTANIXTM

By moving to the Dell XC Series hyperconverged systems, we will be able to reduce our datacenter footprint from 84 RU down to just 16 RU. That's an 80% reduction in space, providing a lot of datacenter and power savings going forward.

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CHOOSING NUTANIX

The DA's office decided to test the Nutanix-based Dell XC Series systems to see if all of the promises held true. "I downloaded the Nutanix Community Edition software, and built one or two systems to become familiar with the interface," noted Rurik. "We also reviewed several of Nutanix's architectural white papers that described the performance each node was going to get and how it could scale linearly. With its high performance, ease of implementation, price, and one-vendor support (via Dell), we were convinced that Dell XC Series would fit the bill, so we went straight into a purchase order without running a POC."

Harris County's IT team purchased a Dell XC730 cluster powered by Nutanix Acropolis and Prism. All production workloads will be migrated over to the Dell XC Series cluster, and the previous environment will be decommissioned. After seeing how well the first system worked, Harris County is now adding two more Dell XC730 appliances for production / disaster recovery and four additional XC730c storage appliances for disaster recovery.

SMALLER FOOTPRINT

"The legacy storage systems and servers filled two full racks in our previous 3-tier environment," Ryan explained. "By moving to the Dell XC Series hyperconverged systems, we will be able to reduce our datacenter footprint from 84 RU down to just 16 RU. That's an 80% reduction in space, providing a lot of datacenter and power savings going forward."

MOVING FROM ESXI TO ACROPOLIS HYPERVISOR

Harris County had virtualized its IT environment using VMware vSphere 5.5 on the legacy SAN. "Over the course of the next 18 to 24 months, our goal is to move away from ESXi and migrate to the Acropolis Hypervisor (AHV) from Nutanix to save on the maintenance costs," noted Rurik. "We will start by moving 8 nodes of production to Nutanix. We like the fact that the hypervisor (AHV) is 'baked into' Nutanix Acropolis; so we won't have to purchase and integrate a third-party product. I also like the distributed nature of the Nutanix Acropolis. There is nothing additional to install or manage. The Nutanix Application Mobility Fabric runs across the entire stack, so if we ever lose a node or two we can still manage the environment, which increases resiliency for our critical systems."

INCREASED VISIBILITY WITH PRISM

Rurik & Ryan have both been very pleased with the Nutanix Prism management interface. "As soon as you login to the Prism interface, you are presented with a very simple dashboard where you can see all of the alerts and determine if anything is wrong with your environment. We can immediately see the performance and the amount of free space on our Nutanix systems. I don't have to go clicking through different screens of the interface to get the information I need anymore, which certainly speeds and simplifies system management for us. Nutanix Prism gives us a single management plane to administer the entire infrastructure stack. When we move to AHV, we will be able to manage the virtual machines directly through Prism as well."

AN EXTENSIVE PARTNER NETWORK

“Nutanix and Dell partner with a lot of strategic vendors,” noted Rurik. “I was really happy to see their partnership with Dell since we are very comfortable with them as an infrastructure provider.”

“One of our big recurring challenges is backups, since we have so much data,” added Ryan. “We recently selected Veeam for our backup environment. Knowing that Nutanix partners with the leading backup vendors such as Veeam was a big plus for us as well.”

LAUNCHING VDI

Now, that they have migrated the majority of the DA's production workloads to Dell XC Series powered by Nutanix, Harris County is getting ready to launch a new Citrix application and desktop virtualization and delivery project. “The first part of the project will be to launch XenApp,” Rurik said. “Then, after we get that environment deployed and stable, we will implement VDI. Our ultimate objective is to have about 1,000 virtual desktops—90% of those seats will be used in-house by our DA and assistant DAs, the other 10% will be outside users, including our sheriff's office.”

“We are using VDI for two reasons,” noted Ryan. “The first is to enable our employees to access their desktops when they are out of the office or on the road. The second reason is to simplify support and maintenance. It's far easier to manage application and software upgrades on virtual desktops.”

SUPPORTING POLICE CAM VIDEOS

The Dell XC Series will also serve as the archival target for the County's police officer body camera videos. Recent studies show that equipping police with body cameras can be an effective way to improve the behavior of officers and protect the public with which they interact. These studies also show significant reductions in the number of civilian injuries by officers wearing body cameras, as well as a reduction in the number of injuries to the officers themselves. “Once the police officers finish their shifts, they return to the station, dock their cameras, and all of the data is uploaded on the law enforcement side of our IT operations,” Rurik explained. “Then, when the DA's office needs to see the videos for any cases they are prosecuting for infractions, we request that video and it's uploaded to a VM in our datacenter which resides on our Nutanix infrastructure.”

APPRECIATING DELL AND NUTANIX SUPPORT

Rurik recently contacted Dell ProSupport who seamlessly engaged Nutanix Support when the DA's office had an issue with a datastore. “The Nutanix tech worked the issue through using a remote session,” Rurik said. “He went through everything step by step to help us resolve the issue. We reached the conclusion that the problem didn't involve Nutanix software, it was a configuration setting on another piece of equipment that may have caused the issue. After the problem was identified, our support rep said that he would leave the case open and asked me to forward any new information on the configuration settings so he could leverage that info if other customers had the same problem. I like the fact that Nutanix leverages case log data to assist its other customers. It not only helps our organization troubleshoot issues faster, it improves support for the entire Nutanix community.”



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Company

With over four million citizens, Harris County is the most populous county in Texas and the third largest county in the United States.

Industry

Government

Business Needs

Aging storage and server infrastructure was experiencing performance issues and difficulty provisioning VMs was impacting growth. Higher performing platform was necessary to support new applications and provide better business value.

Solution

- › Dell XC Series powered by Nutanix web-scale infrastructure
- › VMware vSphere and Nutanix Acropolis Hypervisor
- › Nutanix Prism

Benefits

- › Reduced datacenter footprint by 80%
- › Simplified infrastructure management via one comprehensive, intuitive interface
- › Realized increased system speed and higher performance beyond previous 3-tier environment
- › Enabled the launch of new end-user computing project utilizing Citrix XenApp and XenDesktop

Nutanix delivers invisible infrastructure for next-generation enterprise computing, elevating IT to focus on the applications and services that power their business. The company's software-driven Xtreme Computing Platform natively converges compute, virtualization and storage into a single solution to drive simplicity in the datacenter. Using Nutanix, customers benefit from predictable performance, linear scalability and cloud-like infrastructure consumption. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

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