For Tri-County College, Nutanix Has the Secret Sauce to Make VDI Cost-Effective and Fast

Customer Background

Tri-County Technical College is a 2-year, community college that serves the counties of Anderson, Oconee and Pickens in South Carolina. With 4 campuses and 70 major fields of study, the college enrolls more than 9,000 students annually in both on-campus and distance learning programs.

VDI Unfeasible – Until Nutanix

The IT department at Tri-Country Technical College wanted to replace physical desktops with flexible, location-independent virtual desktops for students and staff. After researching options, they found traditional servers and SAN storage would not deliver high enough performance and cost more than physical desktops. VDI looked unfeasible – until they discovered Nutanix.

The college had particular, application-specific workstations in computer labs across its four campuses. "If you want to work on AutoCAD or QuickBooks, you have to go to this lab and hopefully there's not a class at the time," said Matt Edwards, IT Operations Manager for Tri-County Technical College. With VDI, students would be able to select the desktop image they want and work from any lab or even on their own PCs and tablets at home. "It is a real convenience factor that we thought students would really appreciate," he said.

The IT staff evaluated a brand-name server and SAN storage system to host VMware View. They discovered the cost per desktop for hardware and software was higher than for physical desktops. "We couldn't make the numbers work," said Edwards. They also had doubts about whether SAN storage could deliver high enough IOPS performance for VDI. If virtual desktops were not as responsive as physical desktops, users might not accept the solution and force them back to the drawing board.

The staff began exploring the use of Fusion-io flash storage cards in servers when they learned about the Nutanix converged storage and compute platform. It includes Fusion-io cards and disk drives in a high-performance, tiered configuration. "Nutanix has the secret sauce we were looking for – the clustered file system that manages flash memory in software," said Edwards. A Nutanix cluster expands readily by adding nodes that contain balanced storage and compute capacities. It is easy to add desktops in discrete blocks by knowing how many desktops per node are required. By comparison, the capacities of storage, network and computing in traditional infrastructure are not aligned, so the cost and effort of expansion are unpredictable. Nutanix is also much smaller than the traditional solution. "It would have taken us 20U or more rack space to deploy VDI on traditional solution as compared to only 2U on Nutanix. The Nutanix all-in-one appliance is very simplified and does what we want. It takes all the complexity out of a traditional solution."

Industry

Higher Education

Business Needs

Fast, readily scalable server and storage infrastructure to roll-out VDI that costs less than physical desktops.

Solution

The Nutanix Virtual Computing Platform (NX-2000 Series Complete Block) with VMware View

Benefits

- Costs less per virtual desktop than physical PCs
- Estimated capital savings of $375,000
- About 90% more efficient in rack space compared to traditional servers and SAN storage
- PCIe flash storage cards included for high performance
- Extremely easy installation – server, storage and VMware setup in one day
- Seamless move to VDI with no difference in desktop performance
- Much easier to manage than traditional environment

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Easy Case to Make

"When we ran the numbers, Nutanix was significantly cheaper than what we paid for a physical desktop," Edwards said. The capital savings for VDI hardware and software averaged $250 per virtual desktop with Nutanix. When the final goal of rolling out 1,500 desktops is reached, this will mean a total capital savings of $375,000. This figure does not include operational savings from lower power consumption and easier management. "It was easy to make the business case since the college looks primarily at capital expenditure in making IT investment decisions. "

As a proof of concept, the college rolled out a VMware View pilot project on a Nutanix NX-2000 Series appliance. It required only a day to set up, and having VMware pre-installed meant they could move right away to installing View. "The Nutanix solution was really simple to get started – all you've got to do is put in your keys! That was a huge plus because it saved time and let us get started right away," added Edwards.

VDI a Success

The pilot ran for 6 months and gathered detailed feedback to make sure performance and usability were acceptable. The college is now in the process of moving 1,500 non-persistent desktops to the VDI environment. After this is complete, future plans call for moving 500 more persistent desktops for faculty and staff.

The VDI project is considered a success because users did not notice any performance difference moving to virtual desktops. There were no complaints, and according to Edwards, no news is good news. There is also plenty of spare capacity for growth. "We're not even approaching the speed limit of the Nutanix box for what we're doing."

The IT department at the college traditionally had separate groups for managing desktops versus servers and storage. Nutanix allowed them to continue this practice without significant retraining. "I can definitely say managing VDI on Nutanix is much simpler than it would have been in a traditional environment," noted Edwards. Overall, the desktop group has experienced a significant reduction in management time with virtual desktops.

The college uses zero clients for virtual desktops that use about 22 watts of power, compared to 100+ watts per physical desktop. Not only does this reduce electricity bills, but as an unexpected benefit, extra fans and air conditioners are no longer needed to run in one of the denser computer labs.

Responsive and Listens to Customers

In the future, the college might look at moving its Oracle database as well to Nutanix. "I'm saying, from my experience, I think it would go really fast," said Edwards. They are also considering using Nutanix for their remote campuses and for running graphics intensive workloads on the newer platform.

As an early adopter, Edwards has been pleased to watch the rapid evolution of the product. "One of the things I like about working with a company like Nutanix is you ask us, 'What are you looking for? How are things going? What can we change?' Overall I've had a great experience, especially working with a company that is very responsive and listens to their customers."

About Tri-County Technical College
Tri-County Technical College is part of South Carolina's statewide system of 16 technical colleges. In addition to thousands of traditional students seeking degrees and certificates, the college's Corporate and Community Education Division enrolls more than 12,000 students annually in personal and professional development non-credit classes. Visit www.tctc.edu for more information.

About Nutanix
Nutanix delivers web-scale IT infrastructure to medium and large enterprises with its software-driven Virtual Computing Platform, which natively converges compute and storage into a single solution to drive unprecedented simplicity of the datacenter. Customers can start with a few servers and scale to thousands, with fully predictable performance and economics. With a patented elastic data fabric and consumer-grade management, Nutanix is the blueprint for application-optimized infrastructure. Learn more at www.nutanix.com or follow us on Twitter @nutanix.

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Tricounty Technical College Campus

Tel 855.NUTANIX | (855.688.2649)
Fax 408.916.4039
Email info@Nutanix.com
    @nutanix

NUTANIX
www.nutanix.com

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