Delaware Valley Community Health, Inc.

Delaware Valley Community Health Improves Patient Healthcare Experience During Pandemic

Nutanix enables community-focused healthcare provider to support better patient and provider experiences, while enabling 75% of staff to work remotely

BUSINESS BENEFITS

Delaware Valley Community Health, Inc. (DVCH) is a community-focused healthcare organization. The provider is dedicated to delivering affordable, accessible primary, dental, and behavioral health healthcare to all patients, regardless of their ability to pay. DVCH depends on its information systems to support the databases that are the foundation of all its operations. When DVCH prepared to expand its operations, the IT team knew that it was time to upgrade the aging infrastructure that supported the databases that run those critical healthcare applications as well. Upgrading from an aging traditional environment to Nutanix Enterprise Cloud has enabled DVCH to unleash faster performance, to help employees work more efficiently.

"Before Nutanix, we were averaging a 171-second login time, which is a ridiculous wait if you're a provider," said Nathaniel. "After migrating our databases to Nutanix, it now takes us less than 19 seconds to access an EMR application. Our staff can meet or exceed their workload expectations, and see more patients per day. Nutanix was the best choice I made as a CIO."

– Isaiah Nathaniel, Chief Information Officer, Delaware Valley Community Health

INDUSTRY
Healthcare

BENEFITS

- Improved database performance accelerated EMR login time by nearly 90 percent, reducing patient wait times and enabling staff to see more patients

- Support for telehealth and remote work for 75% of 310 employees enables provider to keep operating even in the midst of a historic pandemic

- Enhanced backup and DR improves availability of healthcare systems, accelerating database replication and speeding recovery time from 24-48 hours to six minutes

- 1.2 TB backups per night which took 4-6 hours on average, now done in about 30 minutes

SOLUTION

- Nutanix Enterprise Cloud OS
- Nutanix Prism management software
- Nutanix AHV
- Nutanix Move
- HYCU for Nutanix

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APPLICATIONS

- Citrix
- SQL
- Electronic medical records (EMR)
- Patient Portal
- Human resources information system (HRIS)
- Population Health Management
- Health Quality Measures (HQM)
- Uniform Data System (UDM)
- Dental database applications

CHALLENGES

For 50 years, DVCH has been dedicated to providing exemplary healthcare to underserved groups throughout the Philadelphia metropolitan area. The provider serves approximately 71,000 (duplicated) patients per year, and employs 74 healthcare providers across 8 locations throughout the region. However, as demands grew, the traditional three-tier architecture could no longer deliver the performance and availability needed by the organization. When database performance is sub-par, performance issues can ripple out across the entire organization, impacting caregivers and their patients.

"Our infrastructure supports our core databases and applications, including EMR, EPM, our patient portal, HRIS, Population Health Management, and much more—as well as the databases that enable them," said Isaiah Nathaniel, Chief Information Officer at Delaware Valley Community Health. "However, our EMR application was running on seven-year-old hardware. When you put 74 providers on our system, it was very taxing on our environment. Our old SQL cluster with 64 GB of RAM was at risk of crashing."

With plans to expand to a new facility underway, Nathaniel and his team understood that DVCH would need to migrate to a more efficient, dependable infrastructure environment.

"From an EMR perspective alone, prior to selecting Nutanix, we realized that we could not be in business if we did not have the flexibility to scale as an operation," said Nathaniel. "We could not keep functioning in the old ways—we had to think new."

SOLUTION

After considering several hyperconverged infrastructure (HCI) solutions, Nathaniel chose a solution based on Nutanix Enterprise Cloud. Nutanix was the only offering that integrated seamlessly with the provider's infrastructure storage, which in turn supported its databases and healthcare applications.

"I looked at other strong HCI offerings, but none of them reached down to the storage level," said Nathaniel. "Storage is especially important in healthcare, and our EMR application requires a huge amount of IOPS from a storage perspective. The Nutanix hyperconverged platform for databases delivers the high performance we needed, so we knew it was the choice for us."

DVCH migrated its old physical servers to two Nutanix clusters, including its auxiliary servers and associated databases. "We had to migrate nine servers, and we used Nutanix Move and HYCU accomplished it in seven hours over the weekend," said Nathaniel.

Nutanix AHV hypervisor supports the new environment with integrated virtualization, app mobility, management, operational insights, and security. To maintain the business continuity that is essential for every healthcare provider, DVCH also installed HYCU for Nutanix. This solution provides purpose-built, application-aware aware and consistent backup and recovery for the organization's data centers. With prior backup that took three and a half to four hours, as HYCU is tightly integrated with AHV, DVCH gained efficiency due to the locality of read writes as well as no loss of data. "For me, you can't use Nutanix without using AHV and HYCU," said Nathaniel.

CUSTOMER OUTCOME

Moving to a modern, hyperconverged architecture for databases has enabled DVCH to deliver dramatically improved performance from the infrastructure to the organization's databases and applications. Working together, these performance advantages translate into a better healthcare experience and shorter wait times for patients. Now patients can access their medication and start their recovery process that much faster.

"Previously, our EMR medication module was the most intensive part of our software package," said Nathaniel. "Processing a prescription through a lab required three to five minutes. After migrating to Nutanix, the processing time is down to 15 seconds. Our targeted patient workload had been 19.5 patients per day, but our module issue had prevented us from achieving it. With the performance Nutanix enables, we can now meet and even exceed that goal."

The flexibility of the new environment is paying off as well. When the COVID-19 pandemic emerged, Nathaniel and his team were forced to rapidly shift operations to support remote employees and healthcare delivery.

"We are using Nutanix for the server/backend virtualization and Citrix for the End User Computing experience," said Nathaniel. "The benefit of that combination is tremendous, because it helps us really be diligent with security and application delivery resting on the back of HIPAA and the HITECH ACT."

Nutanix delivered the database performance needed to ensure the provider could continue to serve patients without missing a beat.

"Because of the speed of Nutanix in enabling us to access our databases, we were able to implement a full telehealth solution in a week, turning on a dime with our complete clinical and operational workflow, because we had the speed to do it," said Nathaniel. "Throughout the month of March, we served 2600 visitors, all through telehealth and telework technologies. If users were dealing with a two-minute login, there is no way we would have been able to experience that level of productivity."

The Nutanix solution has enabled DVCH to serve more patients, more efficiently, with improved speed and convenience—all in the course of a pandemic. Astonishingly, DVCH was able to achieve these performance improvements without losing a single employee. As the pandemic emerged, Nutanix enabled DVCH to shift 75 percent of its 310 employees to work from home in a matter of days, ensuring that staff remained fully employed.

"If you can't provide the technology your workforce requires, they can't work," said Nathaniel. "I'm extremely proud of the fact we haven't laid a single person off and have been able to fully fund our entire workforce. We have actually hired two additional people. If we didn't have a system in place that enabled us to continue our business, I don't know where we would be."

With HYCU for Nutanix, DVCH can be assured of the business continuity it needs to support its patients nonstop.

"We have two large on-premises data centers three miles apart, connected by the WAN," said Nathaniel. "We tested DR with HYCU, pulling the plug on a Nutanix node and spinning up two servers at our backup site, and the process took six minutes. Prior to Nutanix, DR took 24 to 48 hours. Our traditional backup time for a database of 1.2TB was about four hours overnight, and it now takes only 30 minutes."

NEXT STEPS

The flexible, scalable Nutanix environment not only delivers the immediate performance boost that DVCH needs to meet its current needs, but also sets up a foundation for cost-effective growth in the years to come.

"We are a nonprofit organization operating on a $40 million budget, and I have to be strategic about how we use our funds," said Nathaniel. "Nutanix gives us the flexibility and performance we need to continue business, and also expand as needed. We plan to scale from eight sites to ten sites by 2022. Nutanix was the best choice that I have made as a CIO."

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T. 855.NUTANIX (855.688.2649) | F. 408.916.4039
info@nutanix.com | www.nutanix.com | @nutanix