VMware Case Study

INDUSTRY
Education and Healthcare

LOCATION
Kirksville, Missouri
Mesa, Arizona

KEY CHALLENGES
- Replace end-of-life physical firewalls and lower IT costs
- Provide a scalable security platform to serve a complex distributed multi-data center environment
- Increase security without sacrificing application performance

SOLUTION
ATSU revolutionized its schools and clinics with the cost-effective security solution, VMware NSX, which increases firewall performance, meets HIPAA compliance, automates services, and improves agility, resulting in more affordable tuition and better healthcare services.

BUSINESS BENEFITS
- Accommodate the rapidly growing needs of ATSU with a scalable security platform
- Significantly reduce capital and operating costs
- Achieve greater than nine-fold improvement in firewall performance for all applications

vmware®

ATSU
A.T. STILL UNIVERSITY

A.T. Still University greatly improves firewall performance and security with cost-effective VMware NSX solution

A.T. Still University (ATSU) was founded on whole body health and wellness, yielding a multitude of community services today. The University educates future healthcare professionals and provides facilities to learn and practice. The uniqueness of this model contributed to IT challenges such as protecting data and offering user-friendly technology at its clinics. VMware NSX® revolutionized its business with a cost-effective security solution, which allows it to meet HIPAA compliance requirements, automate services, and increase agility, ultimately resulting in more affordable tuition and better healthcare services.

As the founding institution of osteopathic healthcare, ATSU education and healthcare services span six graduate schools. These schools are spread across two campuses, serving more than 3,000 students from 35 countries in disciplines ranging from osteopathic medicine to dentistry, health sciences to health administration. ATSU has dental clinics in Arizona and Missouri and partners with 12 community health centers across the nation.

The Challenge

With both university and healthcare requirements to support, ATSU needed a transformative solution to address its growing need for lowering IT costs, increasing efficiencies through IT automation, and preparing for the continued demand on capacity.

"Our situation here is fairly unique," says Iain Leiter, network engineer for ATSU. "We must link and deliver IT infrastructure to three very distinct environments – our schools and colleges, our clinics and community health centers, and our administration – all of which have stringent and unique requirements for both security and performance."

In the past, ATSU relied on Firewall Services Modules to ensure that medical records, student information, and institutional financial data housed in its data centers were kept secure as well as compliant with HIPAA and other regulations. However, that technology had become obsolete, and the newer ASA firewalls were cost-prohibitive and represented a physical model that IT needed to change. With ATSU's firewalls growing more difficult to support and performance becoming an issue (placing firewalls around large medical images and videos was creating bottlenecks), Leiter knew it was time for a change.

"VMware NSX is the most revolutionary development in our data center security in more than a decade. Not only do we save a significant amount of money in hardware costs, the micro-segmentation available through VMware NSX provides a dramatically more secure design than we could get with a physical firewall with DMZs."

- Iain Leiter,
Network engineer,
A.T. Still University

VMWARE FOOTPRINT

- VMware NSX
- VMware vSphere® 6 Enterprise Plus

The Solution

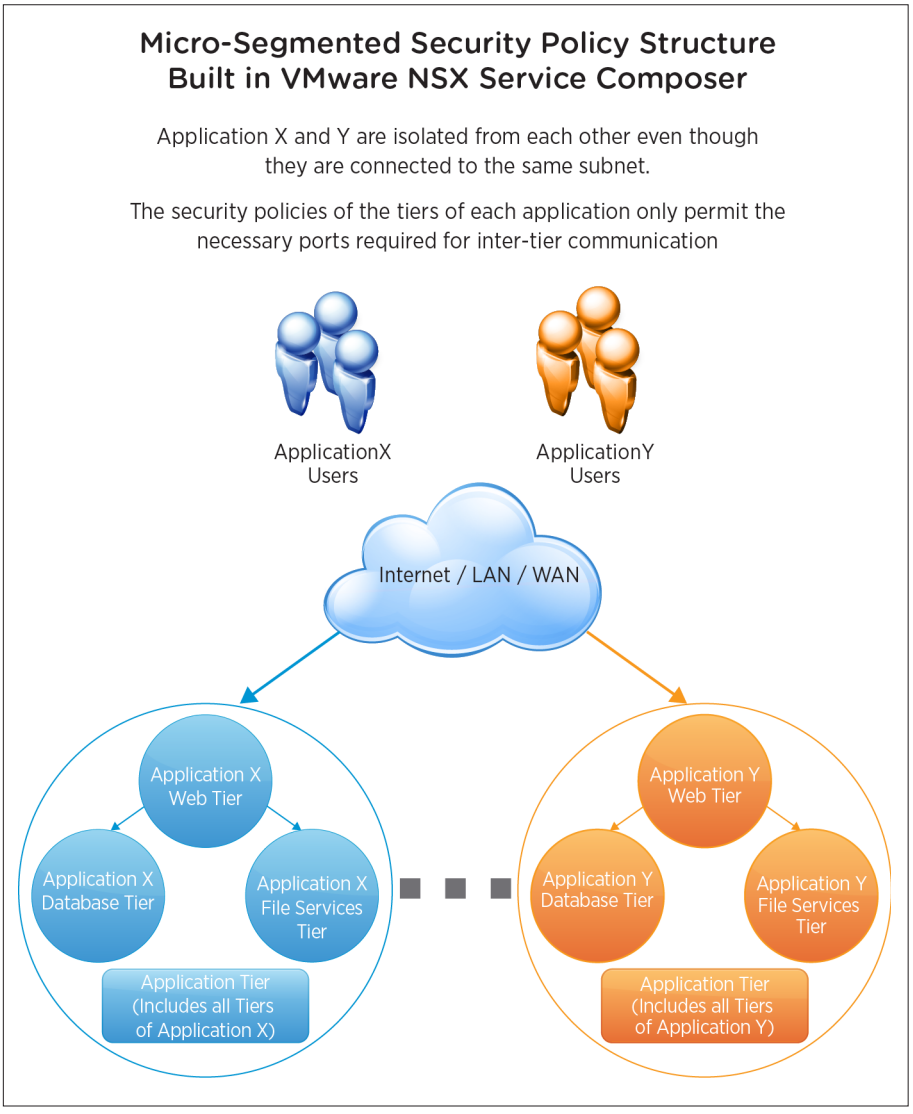
The University initially looked into upgrading the existing security solution, but after seeing VMware NSX, Leiter knew network virtualization was the route to take.

"VMware NSX offers a wealth of features and functionality, but for ATSU, it was the solution's distributed firewalling and security services that sold us," says Leiter. "From a networking perspective, we want to be able to provide the highest level of protection possible while keeping things manageable and maintaining application performance. This is exactly what VMware NSX allows us to do."

Micro-segmentation with VMware NSX enables ATSU to go well beyond what HIPAA and other regulations require – in essence, firewalling on a per-app basis.

"With each of the hundreds of applications isolated from every other, the risk of one application becoming compromised and then infecting others has greatly diminished," says Leiter. "Best of all, we can firewall all of these different areas from one another. Administration doesn't need to see clinical data, clinicians don't need to see the administration portion of the network, and the academic side can be isolated from both. Using VMware NSX to increase our level of IT automation creates efficiencies in our multi-tenant environment where we no longer experience delays in provisioning."

Despite the clear benefits offered by the distributed firewalling approach, Leiter was still a bit uncertain about implementation.



"We went into this not knowing how big a deal it would be," he says. "But as it turned out, implementation was simpler and less disruptive than a physical firewall installation. You don't need to implement any other pieces of VMware NSX. One thing to note is the distributed firewall is not dependent on the VXLAN. You don't have to change IP addresses, and you can use centralized logging to guide the implementation and design of your security policies. In addition, because firewall policies can be turned on incrementally (by virtual machine, app tier, or application), it's easy to roll them back if problems occur."

Also key to ATSU's use of VMware NSX is the built-in service composer, which allows the organization to provision and assign firewall policies and security services to applications in real time in a virtual infrastructure, providing all sorts of opportunities for increasing operational efficiency and gaining granular control. (See Figure 1.)

Business Benefits

Following deployment, Leiter is still excited about the ease of deploying VMware NSX.

"The biggest testament to the success of VMware NSX is that we've been able to implement it in our clinical environment without any problems," he says. "If you can firewall an entire electronic medical record system without encountering any issues, that's a big deal."

Another huge benefit is the OpEx and CapEx savings from a more secure and more flexible environment.

Says Leiter, "Not only do we save a significant amount of money in hardware costs, the micro-segmentation available through VMware NSX provides a dramatically more secure design than we could get with a physical firewall with separate DMZs."

In addition, ATSU can now grow its environment to keep pace with the University's continuing evolution rather than constantly trying to predict what will be needed.

"The fact that we can deploy VMware NSX distributed firewall with flexibility to dynamically contract or expand it, and move licenses among sites, allows us to be much more agile in our operations," he says.

Perhaps best of all, ATSU no longer has to compromise application performance for security, since the distributed firewall model allows for far greater bandwidth. How much greater? According to Leiter, the University's previous Firewall Services Module products offered a maximum throughput of 5Gbps, with no one flow exceeding 1Gbps.

With VMware NSX, says Leiter, "It comes down to how much bandwidth you want to supply to your host. So it could be 20Gbps per host with no one flow exceeding 8 or 9Gbps, which means you're talking about a nine-fold increase per host and a total aggregate throughput of all hosts far exceeding what current physical firewalls typically provide."

For the security team, the icing on the cake is all the time saved and the productivity gained through automation.

Says Leiter, "In some cases, distributed firewall policies are now dynamically applied to servers as they are created. This, in turn, means that we can spend our time identifying threats and reviewing reports rather than performing repetitive manual tasks."

Looking Ahead

Leiter believes "VMware NSX is the most revolutionary development in our data center security in the past decade." ATSU has just scratched the surface of the solution's capabilities, and the IT team is eager to investigate additional features provided by the product. ATSU also continues to build out more rules for classifying traffic.

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