



HUTTO ISD EMBRACES A NEW GENERATION OF SECURITY WHILE OFFERING NEW DIGITAL EXPERIENCES TO STUDENTS



INDUSTRY
EDUCATION (K-12)

LOCATION
TEXAS

KEY CHALLENGES

- Keep up with surging enrollment and digital classroom initiatives
- Protect data and applications with no dedicated security staff
- Comply with HIPAA and FERPA regulations
- Guard against ransomware and other attacks

SOLUTION

One of the fastest growing school districts in Texas, Hutto ISD needed to modernize its data center infrastructure and address critical security gaps without increasing its small IT team of nine employees. The district leveraged VMware NSX and VMware AppDefense to improve network security with micro-segmentation and to protect servers from unknown threats.

Hutto Independent School District (ISD) is growing fast. Over the past 10 years, the number of students increased from just over 1,000 at one K-12 campus to more than 7,000 students at 10 campuses. The district welcomes approximately 300 new students per year. To meet new requirements for digital classrooms, the Hutto ISD Instructional Technology department must consistently improve opportunities for connected learning while keeping the district's network and data secure.

Hutto ISD solved its scalability and security challenges by combining VMware vSphere® server virtualization with VMware NSX®, a network virtualization and security platform. VMware AppDefense™ automates threat detection and response, allowing the district to protect their applications and data from unknown threats. The district also uses VMware Horizon® virtual desktops to provide students with anytime, anywhere digital learning.

Organization Overview

Located near the fast growing city of Austin, Texas, Hutto ISD is a proud district that develops community involvement and support through strong relationships and caring for all kids. Hutto ISD aims to achieve success for all students by creating world-class problem solvers and 21st-century learners.

The Challenge

Hutto ISD needed to modernize its data center and transform security without increasing its small IT team of nine employees or hiring dedicated security staff. After Hutto ISD was hit by a ransomware attack, internal audits identified that the district needed a more secure infrastructure that would be compliant with the Health Insurance Portability and Accountability Act (HIPAA) and the Family Educational Rights and Privacy Act (FERPA), meet payment card industry (PCI) regulations, and keep criminal justice system information isolated and protected. The district's router-based policy enforcement also caused performance problems for users—as more students and more devices came on board, network traffic choked at the router.

“We had to hope that our endpoint security solutions were working, that we didn't have programs running that weren't supposed to be running, and that our firewall rules were OK,” says Chris Harding, network administrator at Hutto ISD. “But we all know that that approach doesn't work in any real environment.”

BUSINESS BENEFITS

- Improving security of school networks and student information
- Growing by 300 students a year without increasing IT headcount
- Providing anytime, anywhere access to digital workspaces
- Saving \$250,000 a year in energy costs

The district was also planning a data center modernization strategy to improve agility and efficiency by breaking down the traditional silos of networking and storage. At the same time, it wanted to use virtual desktop infrastructure (VDI) to transform student learning.

“K-12 is a unique space, and getting the technology right is critical,” says Travis Brown, director of technology at Hutto ISD. “Even details that seem small can end up making a big difference in a student’s education. To give students the best experiences, we need the ability to adapt quickly to change.”

The Solution

Hutto ISD’s transformational journey began with vSphere server virtualization. To achieve the flexibility of a software-defined data center, the district decided to virtualize its network and storage. It deployed NSX, flattening its network from 37 to 4 virtual networks—one for the main server, one for elementary students, one for secondary students, and one for staff—eliminating a full rack of networking hardware.

“Security is something that we take very seriously, and VMware is an integral part of our security strategy all the way around,” says Brown. “NSX is a big part of that strategy because it allows us to do micro-segmentation, so we can really get in there and lock things down. It provides us with a lot of agility in being able to make changes.”

To guard against future cyberattacks, including ransomware, Hutto ISD deployed AppDefense for threat detection and response. Because it operates from inside the vSphere hypervisor, AppDefense has an authoritative understanding of how data center endpoints are meant to behave and is the first to know when that behavior changes, indicating the presence of a threat. AppDefense then works with vSphere and NSX to automatically respond to discovered threats.

“It was massively easy to deploy AppDefense,” says Harding. “With AppDefense, we’re securing our servers, and with NSX, we’re securing the network that the servers are talking to. Those two pieces work together perfectly to protect our environment.”

Based on contextual intelligence about application behavior, AppDefense can automatically block process communication, take a snapshot of an endpoint for forensic analysis, and either suspend or shut down the endpoint.

“AppDefense is effectively the old-fashioned Tripwire software built for the modern data center, with all its new provisioning models and automation tools,” says Harding. “With AppDefense, we know that our environment is going to be more protected because it’s protected by default.”

Hutto ISD also deployed Horizon to deliver virtual desktops and applications through a single digital workspace, securely accessible on any device. NSX brings speed, simplicity, and security to VDI networking, with policies that dynamically follow virtual desktops.

“We looked at Citrix, but when we saw VMware Horizon, it was a no brainer,” says Keith Reynolds, senior network administrator at Hutto ISD. “The value is much better, the price point was better, the functionality was more straightforward, and it’s much easier to manage from our end.”

"It's the unknown threats that we're most concerned about, and AppDefense is going to help us be as proactive as possible. It's a new generation of security."

TRAVIS BROWN
DIRECTOR OF TECHNOLOGY
HUTTO ISD

VMWARE FOOTPRINT

- VMware vSphere 6.5
- VMware AppDefense
- VMware NSX Advanced 6.3
- VMware Horizon Enterprise 7.2

PLATFORM

Cisco UCS/ACI

Business Results and Benefits

Using AppDefense and micro-segmentation in NSX, Hutto ISD can develop granular, flexible security policies for protecting student data that previously would have required a physical firewall for each workload. NSX provides the agility to adapt the district's network design without having to purchase new equipment and re-cable, while built-in load balancing capabilities eliminate the need for extra hardware.

"In our environment, we have to be agile," says Harding. "We have to be able to adapt to the change that we didn't know we needed to make three weeks ago. NSX gives us the ability to make changes quickly without spending money on a new underlying network solution, and still build services in a secure manner."

Together, the VMware solutions provide the scalability and agility the district needed to meet its security objectives without impacting performance or increasing IT headcount. Hutto ISD can now easily secure data at all points on the network to comply with PCI, FERPA, and HIPAA requirements. No ransomware attacks have penetrated the district's environment since AppDefense was implemented.

"AppDefense gives us more insight into our environment—which processes are running, why they're running, which ones need to be allowed, and which ones don't," says Brown. "When you consider the number of zero-day attacks coming out, that level of visibility is incredibly important to our district's security."

Using Horizon virtual desktops, students can access class resources, books, and software such as Adobe Photoshop through 3,200 Chromebooks. Teachers can extend the benefits of classroom software to anywhere students can access an Internet connection. All users experience a consistent look and feel, which helps decrease training needs. Students no longer spend 25 minutes walking to the computer lab, logging in to computers, and returning to the classroom, reclaiming hundreds of hours a year for education.

By moving to zero-client Chromebooks and avoiding the heat previously generated by computer labs, Hutto ISD saves \$250,000 per year in power costs, which paid for the district's VDI investment within three years.

Implementing Horizon VDI strengthened their security posture considerably by moving sensitive apps and data off the endpoints and into the data center. In addition, because NSX micro-segmentation supports Horizon desktops and applications, they were able to leverage it in their Horizon environment, which allowed them to further prevent threats from traversing inside the network in the case of a breach.

Looking Ahead

As Hutto ISD's strong growth continues, the district will use VMware solutions to modernize its technology, provide better student experiences, and transform security to keep up with new threats. With NSX and VMware vSAN™, the district can distribute its data center across campuses for greater resiliency while retaining centralized control.

"It's the unknown threats that we're most concerned about, and AppDefense is going to help us be as proactive as possible," says Brown. "It's a new generation of security."

