# ESC REGION 11 TRANSFORMS SECURITY AND DIGITAL WORKSPACES TO STREAMLINE MANAGEMENT AND PROMOTE LEARNING

EDUCATION SERVICE CENTER
REGI**N** 11

**INDUSTRY**
EDUCATION: K-12

**LOCATION**
WHITE SETTLEMENT, TEXAS

**KEY CHALLENGES**
• Protect school infrastructure and personal data in line with compliance requirements

• Level the field so smaller, rural schools can access resources on par with larger, more urban ones

• Reduce time spent on managing technology infrastructure issues

• Enable more efficient remote access to apps and desktops

**SOLUTION**
By fortifying its data center and network infrastructure with VMware vSphere 6.0 and VMware NSX Data Center, plus VMware vSAN supporting VMware Horizon virtual desktops for its staff, ESC Region 11 provides schools a more secure, tightly integrated, and reliable technology platform to promote learning and teaching.

As an intermediary educational agency, Texas Education Service Center (ESC) Region 11 strives to be a leader in adaptive and cutting-edge technology by providing flexible, comprehensive solutions to its schools. It serves a large number of smaller and more rural schools, in addition to larger ones in urban areas like Fort Worth, across a sizeable area of 7,843 square miles.

To better secure its infrastructure after a 2016 attack and help meet compliance requirements for safeguarding data, ESC Region 11 upgraded its data center and network infrastructure with VMware NSX® Data Center and VMware vSphere® 6.0. Complemented by VMware Horizon® virtual desktops supported by VMware vSAN™, the resulting technology platform fosters the organization's overarching mission to promote student achievement.

## Organization Overview
Located west of Fort Worth, ESC Region 11 is one of 20 education service centers in Texas. Its 200 employees provide professional development, technical assistance, and management of educational programs to 77 public school districts and 66 charter campuses. ESC Region 11 serves 70,699 educators and more than 578,910 students across 10 counties.

## The Challenge
After a 2016 attack crippled its IT infrastructure for several days, ESC Region 11 realized it needed to better fortify its protections for student data and other sensitive information. It was essential to prevent an infected system from having a ripple effect and compromising others. At the same time, the organization needed to help ensure compliance with FERPA and HIPAA requirements for safeguarding data.

With a customer base that includes many small, rural schools, IT leadership was cognizant of the degree to which smaller schools depend on ESC Region 11 for technology solutions they cannot afford to undertake on their own. "Whether for back-office data protection or the latest apps for curriculum enrichment, ESC Region 11 aims to provide students, teachers, and administrators in smaller, remote schools access to the same cutting-edge resources as large schools in more urban areas like Fort Worth," says Rory Peacock, deputy executive director for technology services at ESC Region 11.

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**BUSINESS BENEFITS**

• Enhances security of school data and infrastructure to help prevent attacks and mitigate damage

• Improves access to curriculum and programs for schools, even those that are smaller or more rural

• Boosts productivity with digital workspaces for access to apps from any device, anywhere

• Enables schools to focus on educating kids

The size of the geographic area served presented additional challenges. On any given day, a third of ESC Region 11's staff might be working on site at the schools, spread across a wide area the size of Massachusetts. Not only was it laborious to keep its fleet of laptops up to date, it wasn't very successful. Many endpoints were not updated with the latest patches, posing a security risk. The field staff's productivity was severely compromised any time an issue surfaced when away from the home office.

## The Solution

ESC Region 11's VMware data center virtualization, in place for a decade, was already proving a more efficient software-defined approach for the organization's infrastructure. The IT team decided this was the right approach to extend to other arenas.

With Horizon virtual desktop infrastructure (VDI) deployed for most of its nearly 200 staff, supported by Dell EMC Compellent storage, ESC Region 11 staff working remotely from one of the school sites can access their apps and data via the same digital workspace, just as if they were at their office desks. VMware User Environment Manager™ helps users load their desktop and files much faster as they move from device to device. Meanwhile, the IT department can easily provision and manage desktops and applications, reducing operational costs. The team uses VMware App Volumes™ to virtualize applications from the operating system and easily deliver the right apps to the right people based on their roles. The resulting control and visibility over access to apps optimizes licensing costs to further control expenses.

To achieve superior performance with a low cost of ownership, the IT team selected vSAN with six nodes and one cluster in its data center, with 30TB of capacity, to underpin its Horizon VDI deployment. With this, the team can efficiently deliver desktop services to end users by running virtual machines (VMs) on consolidated clusters in the data center. "We can rebuild machines so much more quickly with vSAN. It's fast and easy to configure, repair, and get desktops back online," says Tom Call, coordinator for information technology at ESC Region 11. While this software-defined infrastructure unifies resources under policy-based management for immediate efficiency gains, it also embeds flexibility for future scaling needs across private or public clouds.

For hardened security, ESC Region 11 chose NSX Data Center as part of a layered approach to help prevent and mitigate damage from any future attacks. NSX enables granular firewalling and security policy enforcement for every workload in the data center to prevent the lateral spread of threats. The team used VMware vRealize® Network Insight™ to plan its NSX implementation and establish rules for micro-segmentation.

The organization's upgrade to vSphere 6.0, and soon vSphere 6.5, unlocks additional capabilities for a more secure and reliable data center. For example, Cross-vCenter Clone and Cross-vCenter Migration enable VMs to be copied and moved between hosts on different VMware vCenter Servers® in a single action.

As a result, schools can count on dependable access to the website and portal systems, productivity tools, library management systems, and approximately 1,200 other solutions that ESC Region 11 hosts for them. In the event of a disaster, ESC Region 11 has a disaster recovery arrangement with another ESC Region. For business continuity, cloud replication takes place on tier 0/1 systems so that systems can be brought back online quickly and learning can continue.

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RORY PEACOCK
DEPUTY EXECUTIVE DIRECTOR FOR
TECHNOLOGY SERVICES
ESC REGION 11

**VMWARE FOOTPRINT**
• VMware vSphere 6.0 Enterprise
• VMware NSX Data Center 6.4
• VMware vSAN 6.2
• VMware Horizon 6.2
• VMware App Volumes 2.1
• VMware User Environment Manager
• VMware vRealize Operations™

**PLATFORM**
• Dell EMC Compellent
• OVH vCloud Air

## Business Results and Benefits

School district leaders are singing the praises of the organization's service, which improves access to educational programs and enables schools to focus on promoting student success. As a result, students on each campus get more teacher and staff time focused on them, fostering their learning.

"ESC Region 11 has been a tremendous asset to Era ISD. As a small, rural district, we aren't able to maintain a large technology staff within our district. Region 11 staff has been great at assisting our district staff with access to technical support and affordable digital educational programs. They essentially serve as an extension of our own district staff and allow us to stay current technologically, in spite of our size and budget limitations," says Jeremy Thompson, Ed.D., superintendent for Era Independent School District.

When ESC Region 11 staff work remotely, the digital workspace provided by Horizon helps boost productivity with easy access to the organization's apps along with any work in progress that a worker might need. The VDI is a breeze for the IT team to manage, reducing expenses and freeing resources for other projects.

"With Horizon we only need half a staff member to oversee our virtual desktop infrastructure. When we get calls to our help desk to reimage a desktop, with just a few clicks and a couple of minutes, even our administrative assistant can do it," says Call.

Deployment of NSX Data Center was fast-tracked with a proof of concept of vRealize Network Insight for planning. "vRealize Network Insight accelerated our deployment of NSX Data Center. It was such a valuable planning tool as we created rules for our micro-segmentation approach. We would have been overwhelmed without it," says Cole Wolsch, web system administrator for ESC Region 11.

The organization's layered security with NSX Data Center has improved its capability to withstand attacks. Isolation of systems that process and store sensitive data helps with compliance. The solution is pivotal in ESC Region 11's hybrid cloud strategy moving forward. "We're really excited to be able to maintain that micro-segmented security wherever we need it, whether on-prem or if we're porting across to a public cloud environment. That's a huge benefit to our cloud strategy," says Wolsch.

## Looking Ahead

The organization recently won a team award from the Texas K-12 CTO Council for an in-progress initiative to connect all its districts on a 100 Gigabit Ethernet (GbE) backbone with 10GbE connectivity to all the schools, setting the stage for ESC Region 11 to provide a wider array of high-performance cloud services. Future services could include desktops as a service for the school students, teachers, and staff.

"We continually look for ways to provide more flexible, comprehensive solutions to our schools, which in turn enable them to maximize student potential and achievement. That's what we want to achieve with our technology services, and VMware helps us accomplish that," says Peacock.

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