



Schools Put IT Savings Back into Kids and Classrooms with VMware NSX

CUSTOMER

IlliniCloud (Bloomington Public School District)

INDUSTRY

Education

LOCATION

Bloomington, Illinois

KEY CHALLENGES

- Scale to meet customer demand
- Lower costs and pass savings to schools
- Drive down infrastructure HW costs
- Improve security

SOLUTION

VMware NSX™ to create a secure, multi-tenant virtualized cloud environment with a common view

BUSINESS BENEFITS

- Lowered school district annual IT spending an estimated 30 to 50 percent
- Achieved agility, security and cost goals
- Gained flexibility in infrastructure
- Created a common state for the entire network

Business Issue

IlliniCloud is a nonprofit consortium providing state-of-the-art on-demand infrastructure, computing resources and other services to school districts in Bloomington, Illinois. Community cloud services give school districts access to modern computing resources such as virtual servers, online storage, high-speed network connectivity, critical applications and services and disaster recovery – at palatable cost.

The IlliniCloud allows districts and individual schools to share hardware, applications, services and IT support at a fraction of the cost of purchasing and managing these systems individually. IlliniCloud's original mandate was to support budget-constrained school districts in Illinois, but it has grown to now serve educational, nonprofit and city and local governments in seven states from three data centers.

The Challenge

To continue to meet demand, IlliniCloud needed to create a multi-tenant environment in which multiple organizations can access the same infrastructure. IlliniCloud's environment had to be highly scalable, flexible, easy to manage and able to secure workloads while keeping costs down. A Software-Defined Data Center (SDDC) approach is critical for IlliniCloud to meet its current and future objectives.

“One of the challenges we faced was that network and security platform costs were increasing, rather than decreasing,” says Jason Radford, head of operations for IlliniCloud. “We needed to reap the efficiencies and cost savings of the SDDC while also addressing issues around security, multi-tenancy and the speed and flexibility of our infrastructure and services. And, we had to magically engineer all of this – without sacrificing security and important capabilities – to be cheaper than a school district doing it on premises.”

Security is always a concern in education. “The educational space is extremely concerned about ensuring Personally Identifiable Information (PII) about students and their respective data is kept safe, secure, and only used for the learning environment,” says Radford. “We wrote our own Dropbox program to store all the stuff schools want protected but accessible, like roster data. When a teacher logs in, they see all their kids and their information. When a student logs in, they can see all of their classes. The data, and the asynchronous communication between the two, must be secure.”

A problem in education is the cost of top-notch security. “Few in education can afford to pay for security from the big dogs on their own,” says Radford. “A fine-grained, robust security system that could protect each organization and its data at an affordable price was required. Traditional networking gear just wasn't going to meet our need to safeguard tenants and segment them, while enabling the east-west inter-tenant firewalling and security in access policies we needed, without a lot of inefficient routing and workflow.”

The Solution

To improve security, efficiencies, scalability and lower costs, IlliniCloud turned to a VMware-powered Software-Defined Data Center underpinned by VMware NSX – the network virtualization and security platform. VMware NSX brings the operational model of a virtual machine to a data center network, transforming the economics of network and security operations.

In just a few weeks, VMware NSX network virtualization was deployed in IlliniCloud's production environment. "We immediately realized a tremendous savings through a multi-data center migration from Cisco networking gear to Arista Networks," reports Radford. "Then, we took the next step, which was to layer on more and more value with VMware NSX software." The VMware NSX platform enables IlliniCloud to decouple the data center network from the underlying physical hardware to gain massive scale while simplifying network design and operations.

The deployment significantly enhanced security to better protect the sensitive student and school data shared, stored and processed in IlliniCloud's environment. VMware NSX uses micro-segmentation based on fine-grained policies to enable security inside IlliniCloud's data centers.

The Business Benefits

The decision to implement VMware NSX is helping IlliniCloud meeting its agility, security and cost goals. This is because VMware NSX delivers all the operation agility and granular controls of virtualization to IlliniCloud's existing physical network. Moreover, it works seamlessly with the organization's existing compute and networking infrastructure, applications and security products.

VMware NSX saves IlliniCloud money by giving it flexibility in infrastructure by allowing it to choose the hardware it wants, and to deploy it where and when desired. It also enables IlliniCloud to defer capital expenditures for hardware because VMware NSX can be used across its existing infrastructure.

VMware NSX is helping IlliniCloud streamline operations and automate deployments. The organization has consolidated management operations for disparate physical networks running in the data center, and manages these networks as a single logical network. The IlliniCloud team is not only virtualizing the L2/L3 network, but also virtualizing security and load balancing services. Security policies spin up, move or retire with the VM they protect, and workflows improve because there are no more stale firewall rules.

"Before VMware NSX, our environment was a bit like Frankenstein – some users liked a certain API, some guys got TCL, this person liked Perl," explains Radford. "Now I have a clean solution and vector into all network assets and operations that run in the cloud. There is a single set of inter-phases and a common state for the entire network. I no longer have a siloed operation and instead have a complete set of business views and workflows that I can instrument. I can securely and safely house student data, do warehousing, and then facilitate that policy down to the district level. To have one engine for the entire gamut of services and needs for hundreds of districts in different states is huge. That's why micro-segmentation, policy-based automation and auditability with VMware NSX are critical to what we do."

Arguably the biggest benefit of all is that funds school districts previously spent on IT can be redirected. "The results are nothing short of amazing for students, faculty and staff," says Radford. "We estimate that each educational institution that joins our cloud can potentially cut its annual IT spending by 30 to 50 percent, freeing up money for other important educational needs while getting tighter security and data protection."

Looking Ahead

Radford and IlliniCloud aren't done with their plans for VMware NSX. "Ultimately, I want VMware NSX to replace all of my hardware firewalls and load balancers," says Radford. "If everything works as planned, we believe we can cut our costs by upwards of 75%."

That's sweet music to the ears of cash-strapped school districts, state governments and the other organizations IlliniCloud serves. "Eventually, I do not want to have a Cisco firewall, an F5 Load Balancer, VPN or any of that stuff," says Radford. "The savings on no longer needing these systems goes right back to the taxpayers in the school districts, which allows them to redirect money to better support classrooms and school kids."

That money saved allows district's to redirect it into other programs enabling them to put more money into the classroom, curriculum, and other initiatives to benefit students.

