



SANTA BARBARA CITY COLLEGE TRANSFORMS SECURITY, OPERATIONS, AND APPLICATION DELIVERY WITH VMWARE SOLUTIONS



INDUSTRY

HIGHER EDUCATION

LOCATION

SANTA BARBARA, CALIFORNIA

KEY CHALLENGES

- Enhance security of student information
- Improve IT efficiency with more intelligent operations
- Deliver applications to students on any device

SOLUTION

Santa Barbara City College wanted to enhance network security to protect student information, deliver applications to students on any device, and make its IT operations more efficient. To accomplish this, the college upgraded to VMware vSphere® 6.5, deployed VMware NSX® with VMware vRealize® Network Insight™ to deliver intelligent operations for network virtualization and security, and deployed VMware Horizon® for desktop and app virtualization. VMware vRealize Operations™ speeds troubleshooting with unified visibility, and Horizon enables anytime, anywhere delivery of virtual desktops and apps.

Santa Barbara City College (SBCC) is widely regarded as one of the leading two-year community colleges in the nation. Its outstanding faculty, small classes, state-of-the-art facilities, and incredible location make it an attractive option for thousands of students. Winner of the prestigious Aspen Prize for Community College Excellence, SBCC is also a VMware IT Academy, offering courses in VMware vSphere systems administration as part of its computer information systems curriculum.

SBCC is committed to protecting students, faculty, and administrative staff privacy with strong information security while providing more convenient access to computing resources. The school also wanted to equip IT staff with modern tools for greater visibility into its data centers and network. Using VMware solutions for the software-defined data center, SBCC is enhancing security; enabling anytime, anywhere learning; and saving hours of IT staff time every week.

Santa Barbara City College is a comprehensive educational institution serving the south coast of Santa Barbara County, with over 17,000 students and 1,200 faculty and staff. Established in 1909, the college offers a wide range of associate degree and certificate programs, as well as transfer programs that provide the first two years of study toward the baccalaureate degree.

The Challenge

SBCC was an early adopter of VMware in its data centers, virtualizing servers to keep its physical footprint small and efficient. "If we hadn't started early with VMware, we'd have 375 physical boxes versus the 21 we host today," says Brandon Lovelace, network administrator, Santa Barbara City College. "We would need a whole lot more power, air conditioning, and budget to make it all happen." Virtualization enabled SBCC's IT department to be much more flexible in how it deployed servers. With fast access to resources, developers were able to move faster and be more effective in meeting the college's needs.

Energized by this success, SBCC's technology leaders wanted to extend the same flexibility to desktop computing and network security. They also wanted more visibility into infrastructure so that IT could deploy and provision resources faster, quickly troubleshoot issues, and keep applications such as the college's Ellucian Banner student information system performing well.

“Keeping our technology current with VMware helps us empower students and faculty to be successful.”

BRANDON LOVELACE
NETWORK ADMINISTRATOR
SANTA BARBARA CITY COLLEGE

BUSINESS BENEFITS

- A more secure environment with 360-degree network visibility
- Anytime, anywhere learning with virtual desktops and applications
- Saving hours of IT staff time weekly

VMWARE FOOTPRINT

- VMware vSphere 6.5
- VMware NSX 6.3.3
- VMware vRealize Network Insight
- VMware vRealize Operations 6.6.1
- VMware Horizon Enterprise Edition 7.02

SERVERS VIRTUALIZED

- Ellucian Banner student information system (app and web tiers)
- Microsoft SQL Server
- Oracle Databases

APPLICATIONS VIRTUALIZED

- Maple
- IBM SPSS
- ArcMap GIS

PLATFORM

- Dell PowerEdge blade servers
- Pure Storage (8GB FC)
- HP core switching

The Solution

SBCC decided to upgrade its two data centers to vSphere 6.5 to take advantage of new capabilities such as streamlined management via a simplified user interface and a new VMware vCenter Server® Appliance™, which replaces Windows-based management for reduced operational complexity. It's also using Predictive DRS, a new feature that combines the predictive analytics of VMware vRealize Operations Manager™ with the powerful resource scheduler algorithm of VMware vSphere Distributed Resource Scheduler™ to balance workloads before resource utilization spikes occur.

“vSphere 6.5 has been stellar,” says Lovelace. “I love the enhanced web client. It's fast, easy to use, and it's saving me time. The vCenter Server Appliance really simplifies management and updates—it's all one piece, with VMware vSphere Update Manager™ fully integrated. There are no Windows servers or SQL databases to worry about, so we save on licensing costs.” To add another layer of security to its student information system and gain more flexibility in writing firewall rules, the college chose VMware NSX for network virtualization. It also deployed vRealize Network Insight, a tool that delivers intelligent operations for software-defined networking and security and offers recommendations for NSX.

“With NSX, we can write firewall rules at the VM level and use micro-segmentation to enforce network security in a very granular way,” says Lovelace. “I now write rules using Service Composer so that new VMs are automatically firewalled based on how we name them. If and when we delete the VM, the firewall rules disappear as well. It's an elegant, modern way to keep network security up to date.” The team gains unified visibility and faster troubleshooting using VMware vRealize Operations for application-aware monitoring across the software-defined data center. “With vRealize Operations, we can immediately tell how workloads are behaving and make adjustments where they are truly needed,” says Lovelace.

To provide a more mobile experience, SBCC virtualized its computer labs and certain faculty and staff desktops using VMware Horizon. The college also delivers virtualized applications using Horizon Remote Desktop Session Host (RDSH), allowing students to access applications they need for their coursework at any time and from any device. “Horizon makes our computing labs and applications available 24/7 and much easier for IT to manage,” says Lovelace. “We started by virtualizing a couple labs, and it just caught like wildfire. Horizon is more secure because each time students log in, they get a fresh desktop, mitigating the risk of malware infections. And we can update a lab in just a few minutes, compared with hours or days previously.”

Business Results & Benefits

By using VMware solutions to modernize its data center, transform security, and provide students with mobile learning experiences, SBCC is building on its reputation as a technology leader among community colleges. “Keeping our technology current with VMware helps us empower students and faculty to be successful,” says Lovelace.

A More Secure Environment—with Less Administration Time

With 360-degree visibility that helps IT model security groups and write firewall rules, SBCC is successfully mitigating the risk of a data breach while simplifying network security. “Most community colleges are challenged to provide stronger information security on a limited budget and with a small IT team,” says Lovelace. “The combination of VMware NSX and vRealize Network Insight works very well for us. It makes our environment more secure, and it’s saving us time every week.”

Actionable Insights into Application and Infrastructure Health

Armed with easy-to-consume, near-real-time data about what’s really happening on its infrastructure and network, SBCC can be more efficient in troubleshooting. vRealize Operations proactively sends alerts when servers are approaching bottlenecks on CPU, memory, or disk I/O, or when they are close to running out of storage space.

“Previously, those problems took a lot more time for us to diagnose because the data wasn’t all in one place,” says Lovelace. “With vRealize Operations, we can make fast, intelligent decisions to easily rightsize our servers and keep applications performing well for students, faculty, and staff.”

Anytime, Anywhere Learning

With virtual computer labs, students can access even demanding, resource-intensive applications such as Maple mathematical software, IBM SPSS statistics, and ArcMap GIS—and run them from their PC, Mac, or Chromebook, any time of day or night.

“With Horizon, we’re providing more access to the resources students need to be successful,” says Lovelace. “They can consistently complete their labs, and IT can make better use of staff time.”

Looking Ahead

As SBCC begins to adopt Docker containers, IT plans to use Docker-compatible VMware vSphere Integrated Containers™ to run both traditional and containerized applications side by side on a common platform. The college also intends to use NSX to load-balance network traffic for better overall performance.

“We continue to choose VMware because it continues to grow along with our needs,” says Lovelace. “The software-defined data center we have with VMware is everything we need and more.”

