



# Leading College Delivers Secure, Anytime, Anywhere Digital Access to Learning

The College of New Jersey is one of the leading comprehensive colleges in the US. It offers programs founded on a strong liberal arts core and maintains the seventh-highest four-year graduation rate among public colleges in the US.

## Industry

Education

## Partner

NJ Edge is a non-profit providing affordable access to networking, cyberinfrastructure, cloud and technology solutions to advance research, education and economic development.

## Strategic priorities

- Multi-Cloud
- Virtual Cloud Network
- Anywhere Workspace

## VMware footprint

- VMware Cloud on AWS™
- VMware vSphere®
- VMware Horizon®
- VMware HCX™
- VMware NSX® Data Center
- VMware Site Recovery Manager™

The College of New Jersey aspires to deliver students a modern, high-caliber learning experience accessible from anywhere on or off campus. To accelerate this strategy, the college needed to embrace more cloud technology and establish a secure, virtual desktop infrastructure at scale. Partnering with non-profit technology services provider, NJ Edge, the team rolled out a modern “work from anywhere” solution of VMware Horizon® on VMware Cloud on AWS™ and onboarded 7,400 students to the new environment. In addition to the solution being less costly to manage, staff and students enjoy greater choice within the learning experience, which was crucial during the COVID-19 pandemic and for meeting student expectations into the future.

## Nurturing the leaders of tomorrow

Founded in 1855, The College of New Jersey (TCNJ) has the seventh-highest four-year graduation rate among public colleges in the US. Its staff and faculty of 820 serves 7,400 students pursuing degrees in seven schools: arts and communication; business; education; engineering; humanities and social sciences; nursing, health and exercise science; and science. TCNJ is on a mission to provide an unparalleled education by creating a vibrant, collaborative and inclusive community to nurture the leaders and thinkers of the future. To modernize its student experience, the college focuses on delivering seamless technology both on and off campus, by creating anytime, anywhere, any device access to resources.

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Leonard Niebo, Associate Vice President & Chief Information Officer,  
Office of Information Technology, TCNJ

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## Replacing high-maintenance on-premises infrastructure

The modern academic experience is underpinned by sophisticated technology supporting operations and academia, but traditional systems often hinder universities. At TCNJ, the internal IT team of 55 managed a high-maintenance, on-premises IT environment. To keep up with changing student needs and expectations, TCNJ needed to move to a more agile, scalable and nimble solution.

To complete assignments, students need access to dispersed resources. These may be journals and archives in the library, or specialized scientific lab equipment and computing resources. With “learning from anywhere” solutions now becoming standard in the sector, universities are expected to provide students with access to these resources, including virtual lectures and seminars, remotely and on demand.

These technical requirements place a huge demand on IT resources, and legacy on-premises systems are costly to scale up and labor-intensive to keep patched and updated. While TCNJ maintained a backup data center to ensure continuity if disaster struck at its primary data center, the close proximity of the two sites—several hundred yards apart—defeated the purpose of co-location if both were threatened by fire or flood.

## Seamlessly migrating workloads to the cloud

To create a more inclusive “learn from anywhere” experience and to support more effective collaboration, TCNJ needed a new approach. “Around five years ago, one of our commuter students was struggling to access computer labs on campus to do his assignments. That’s not the student experience we want to deliver, and it got us thinking about how we could provide that anytime, anywhere, any device access,” says Leonard Niebo, Associate Vice President and Chief Information Officer, Office of Information Technology at TCNJ.

To make learning more accessible and create a foundation to support future growth and innovation, the college adopted a cloud-first strategy. The vision was to roll out a secure, virtual desktop infrastructure with role-specific access to all the apps each student needs to complete their assignments from anywhere.

TCNJ is a member of an organization called NJ Edge, a non-profit technology provider for educational and healthcare institutions that makes accessing the latest technology and its high-performance network more cost-effective. Both organizations have strong partnerships with VMware, and with a wealth of VMware skills in-house, TCNJ decided to capitalize on its existing skillset and expand its use of VMware technologies.

The college selected AWS via NJ Edge and migrated its VMware vSphere® clusters to VMware Cloud on AWS, leveraging VMware HCX™ to simplify and streamline the migration. The team implemented VMware NSX® Data Center for an additional layer of security and network virtualization enhancement.

“VMware Cloud on AWS requires significantly fewer resources to manage than our on-premises environment, so we can focus on more valuable activities. Another nice thing about moving to the cloud is that we can spin down resources when everything slows down after graduation in the summer,” says Niebo.

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“With VMware, we’re ready for anything. We can scale, and with support from both VMware and NJ Edge, nothing is as difficult as it seems.”

Leonard Niebo, Associate Vice President & Chief Information Officer, Office of Information Technology, TCNJ

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## A secure, digital learning environment

The team deployed VMware Cloud on AWS as its virtual application infrastructure and onboarded 7,400 students over a six-to-eight-month period. To ensure the environment was fit for purpose, the team recruited a panel of students and faculty to test the solution and provide feedback.

“We were fortunate to have a group of students and faculty who were willing to join us and go through the experience of navigating cloud migration,” shares Sharon E. Blanton, Ph.D., Vice President for Operations, TCNJ. “As our first testers, these individuals provided valuable feedback, especially since they have different expectations than our team. Plus, we may not be familiar with a particular software, and we need experts in that field to ensure everything is working properly and that the technology provides a smooth user experience.”

## Creating a secure digital learning experience at scale

When the COVID-19 pandemic reconfigured classroom instruction, in less than a week the college procured more licenses and scaled up the environment from 250 to 1,000 concurrent users, a 300 percent increase. With students using their own devices, the team deployed two-factor authentication to protect sensitive data across the bring-your-own-device (BYOD) environment.

Using solutions such as video conferencing, faculty moved lessons online, enabling students to continue learning remotely. Today students enjoy greater choice, learning digitally or on-campus according to their needs. “VMware Horizon offers a scalable and agile approach, where we can add more users if needed or create multi-instances for different needs,” explains Niebo. “For example, there’s an app menu for the generic user, an app menu for a science user, one for a math user, and so on. Students get different applications based on who they are and what they do, creating a personalized experience.”

The entire environment is protected by VMware Site Recovery Manager™, which provides disaster recovery-as-a-service (DRaaS). Data can be replicated with a five-minute recovery point objective to safeguard service continuity. Test scenarios demonstrated that core systems could be restored in two hours during an outage.

## Giving students greater freedom of choice

By building a comprehensive learning solution enabled by an accelerated cloud strategy, TCNJ has elevated the student and faculty experience and initiated a new chapter of hybrid learning. “Before the COVID-19 pandemic, people didn’t think the learning experience could be replicated online. Now, the conversation is around giving people the freedom of choice, not whether we’re physically able to offer high-caliber remote learning,” Niebo says.

The secure BYOD environment empowers students to use their preferred devices to access all the apps they need from an intuitive virtual desktop infrastructure supported by VMware Horizon. The solution provides students the freedom to learn from anywhere, making education more inclusive and accessible and creating a more personalized learning experience.



Now, the TCNJ IT team spends less time patching and maintaining servers and more time innovating. The smaller physical, on-premises infrastructure delivered an estimated reduction of USD \$200,000 per year in hardware costs and an additional USD \$26,000 saving on utility bills.

“Moving to the cloud gives us greater peace of mind that the college can continue operating if there’s a disaster—be it a pandemic or a fire on campus,” comments Niebo. “Our tertiary data center is in the cloud, not 400 yards away from our main site.”

## Removing the roadblocks to innovation

The VMware environment provides a solid foundation to help TCNJ adopt more cloud technology solutions. The team plans to add VMware Cloud Disaster Recovery™ to its solution portfolio to enhance security, and will explore micro-segmentation opportunities with VMware vSAN™ on-premises to reduce costs. Other opportunities include expanding the VMware Cloud on AWS integration with Veeam, ILML traffic monitoring patterns, and other use cases.

“When it comes to our IT, we can never be too flexible, agile or nimble. The more work we put into that, the more it will pay off in the future. With VMware, we’re ready for anything. We can scale, and with support from both VMware and NJ Edge, nothing is as difficult as it seems,” says Niebo.

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