



University Embraces Zero Clients for Innovative, Flexible Learning Model

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LUKE VANWINGERDEN
DIRECTOR, ITS CLIENT SERVICES
UNIVERSITY OF SOUTH CAROLINA UPSTATE



University of South Carolina Upstate offers baccalaureate education and selected master's degrees in response to regional demand. Now in its 46th year, USC Upstate strives toward its vision of becoming one of the Southeast's leading "metropolitan" universities and to be recognized nationally for excellence in education and its commitment to students.

AT A GLANCE

Situation

- Higher Education
- South Carolina
- 641 faculty and staff (approximately 5500 students)

Challenges

- Giving all students anywhere, anytime access to labs and on-campus resources
- Aligning infrastructure with dynamic needs of faculty, staff, and students
- Simplifying ITS (lowering operating costs)

Solution

- Virtual desktop infrastructure
- Teradici® PCoIP® Zero Clients

Results

- **Flexibility:** Ease of deployment and management help ITS rapidly align the infrastructure to student and faculty needs.
- **Lower costs:** One technician to support all desktops; affordable all-in-one endpoints help the budget.
- **Efficiency:** Central, remote management frees up ITS time and speeds response to user requests.
- **Performance:** The scalable VDI platform can be configured to meet dynamic workload demands, including video streaming.



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KEVIN HODGES
SYSTEM ADMINISTRATOR, CLIENT SERVICES (INCLUDING VDI)
UNIVERSITY OF SOUTH CAROLINA UPSTATE

A large population of non-traditional learners calls for an extremely versatile infrastructure model.

Many students at the University of South Carolina Upstate must balance their studies with family responsibilities and jobs. To remove barriers to learning, USC Upstate aims to give all students – on campus and off – easy access to the tools and resources they need for academic success. In recent years, this mission led to the SpartanGreenSky initiative and the introduction of a virtual desktop infrastructure (VDI). ITS was tasked with overcoming the related technical challenges:

- Traditional PCs and thin clients were increasingly expensive to deploy and manage as VDI clients. The OS support in particular was straining the ITS staff, with thin clients requiring time-consuming updates and troubleshooting. And growing numbers of the aging thick clients were experiencing hardware failures.
- Operating expenses were similarly going up, especially the costs for power and HVAC in the student labs.
- Extending the VDI solution throughout the campus created scalability challenges relating to the network and data center platforms.

A new client alternative put the University’s SpartanGreenSky initiative on a more cost-effective, scalable path. Supporting thin and thick clients had become a nightmare with continual embedded OS issues and lots of hardware failures with our aging systems,” said Luke VanWingerden, director, ITS Client Services at USC Upstate. “Kevin Hodges, our VDI system administrator for clients, found a solution. Now we have a better way to address the desktop, with all-in-one clients. The Teradici PCoIP Zero Clients eliminate a lot of wires in the student labs, and also simplify management.”

The VDI services team purchased zero clients for one of the larger student labs. “The PCoIP zero clients really cut down on our headaches,” said Hodges. “We don’t have to deal with device management and cabling, and they eliminate OS and security issues on the endpoints. We had a lot of success with the zero clients, especially in terms of the deployment speed. Literally dozens of clients can be set up with a few clicks.”

USC Upstate started deploying the zero clients in labs and faculty offices across campus. Today, student labs are equipped with more than 400 of the streamlined VDI endpoints, and employees enjoy another 200 on their desktops. Another 100 zero clients are due to arrive this month.

“All of our desktop refreshes deploy zero clients today; we stopped deploying PCs years ago,” said VanWingerden. “There is some VDI education required at times. It is a switch from what they are used to. But most of our end users really don’t care about the details. They know they can just power on the zero clients and they work.”



VDI and PCoIP zero clients have given ITS a scalable, flexible computing model that aligns with the University's mission. Flexible access to remote sessions accommodate the 75% of the student body that lives off campus, and the all-in-one zero clients make it easy to set up, manage, and change on-campus labs based on the current course requirements.

With the Teradici PCoIP Management Console, ITS has visibility and control over all VDI endpoints. Hodges explained, "Normally, managing a VDI environment would be intensive. With Teradici PCoIP Zero Clients and the Teradici Management Console, deployment is automated and our work is essentially done as soon as the client is plugged in and turned on. Since we replaced our thin and thick clients, endpoints are now the easiest-to-manage piece of our VDI environment."

"In fact, there would be no way to manage 600 to 700 endpoints so easily without this model. It has dramatically changed the way we support our users. We can handle most tasks from our offices without running from building to building on our 300-acre campus. This means much faster response to service requests."

VanWingerden said, "Teradici PCoIP technology and the Management Console have freed up our time. This means we can say 'yes' a lot more often. Even the day before classes start, a last-minute request is no longer a big deal."

The next steps for the USC Upstate VDI initiative will tackle the recent increase in video streaming. As more instructors include video content in the classroom, VDI server performance has been impacted. ITS recently ordered Teradici PCoIP Hardware Accelerators to ensure excellent video experiences.

"Two years ago when we bought our VDI servers, we did not anticipate the popularity of video in the classrooms," said VanWingerden. "We have 100 classrooms with zero clients. The Teradici PCoIP Hardware Accelerator is a very cost-effective solution that protects our existing VDI investments while boosting video performance. We plan to start with four accelerators in four servers, and we can expand as we need to keep up with classroom demands."

Products used

- PCoIP Zero Clients
- PCoIP Management Console

Virtualization platform

- VMware® Horizon™ View

