

UNIDESK CUSTOMER SUCCESS STORY



Tennessee Tech: Unidesk Helps Make Learning Mobile, Flexible, and Collaborative for One of the Top Universities in the U.S.

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Jeremy Ey
Systems Administrator, VDI Technical Lead, Tennessee Tech University



The Need for Desktop Transformation

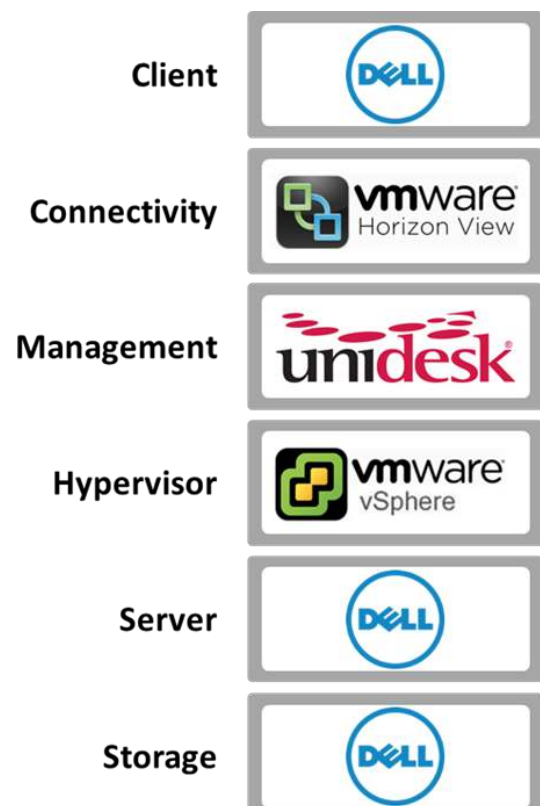
Tennessee Technological University (TTU) is located in Cookeville, Tennessee. Founded in 1915, the public institution is home to over 11,000 students and 1,100 faculty and staff members. Rated as one of the 50 "Best Value" public colleges and universities in the U.S., school officials are constantly looking for ways to improve the undergraduate student experience through technology and innovation.

The need to replace outdated computer lab equipment gave TTU's IT team the opportunity to create a more scalable client computing foundation that would simplify management for IT while enabling students to use course applications on their own mobile computing devices.

"We believe that virtual desktops and 'Bring Your Own Device' are the future of computing in education," says Reid Christenberry, CIO at Tennessee Tech. "As we move away from traditional PCs and labs, learning becomes more mobile, collaborative and flexible. Rather than having students go to computer labs, the combination of Dell, Unidesk and VMware has enabled us to bring our labs to our students."

VDI Design Considerations

At first, IT officials were unsure if Virtual Desktop Infrastructure (VDI) was viable. Concerns included a lack of compatibility with student devices, a poor user experience for students and staff, over-provisioned storage, and the complexity of virtual desktop deployment and day-to-day management.



These concerns were soon allayed. VMware Horizon View enables TTU students to access lab desktops and applications over the high performance PCoIP protocol using PCs, laptops, thin/zero clients and mobile devices.

For desktop access in labs, TTU deployed Dell Wyse P20 zero clients, which use less than 15.5 watts of power in full operation, about five times less than a traditional PC. Dell PowerEdge servers and Dell EqualLogic hybrid storage arrays provide the necessary compute, disk space, and I/O resources.

How to manage a campus-wide VDI environment with TTU's lean IT organization was the missing piece to the VDI puzzle.

The Missing Piece: Unidesk

The first phase of TTU's VDI plan was to offer 600+ simultaneous virtual desktop connections for its labs, which require over 100 different educational applications.

Comments Dennis Hood, Director of Systems Support, "Our research showed that managing a large VDI environment can be complex. We needed to keep day-to-day management simple for our small team. But we also wanted to improve delivery times for new and updated applications so we could provide the immersive, hands-on learning environment that our institution is known for. We came upon Unidesk, which to us was the missing piece to the VDI puzzle."

Adds Christenberry, "Unidesk has been critical to the success of our VDI initiative. If we had just used the native tools to deploy and manage our virtual desktops and applications, we would have needed 6-8 people. With Unidesk, we're doing it with 1.5."

Operationalizing VDI with Unidesk

TTU's plan was to offer non-persistent desktops that would give each student a fresh computing experience each time they logged in. Simplifying the delivery of the unique applications required by each lab and enabling all lab desktops to be provisioned and patched from a standard Windows gold image is where Unidesk was needed to streamline daily VDI operations. Explains Jeremy Ey, Systems Administrator and VDI Technical Lead at TTU:

"Instead of having to build a custom image for a lab, Unidesk lets us concentrate on which applications we want to deliver. We can layer even complex apps like MATLAB, SPSS and Office in a few minutes, then pick which layers we want on each desktop. There are only two golden image layers of Microsoft Windows to patch for all desktops, which greatly simplifies administration."

Students Get the Latest Software

When traditional PCs were being used, TTU's Systems Support team only had the resources to update an application about every two years. TTU students now have the latest software at their disposal.

Reports Ey. "With Unidesk, we update our lab apps every semester, or about four times more often than we were doing on our PCs. Unidesk layers are managed once centrally, so when we update an application for one lab, it's updated everywhere. That's a huge win for our student users."

MATLAB, SPSS, Microsoft Office, Dragon Naturally Speaking, SolidWorks, LabVIEW, HyperChem, ChemDraw, R, Maple and over 100 other applications are all layered separately using Unidesk.

Unlike traditional application virtualization, layering with Unidesk is as fast and easy as installing software on a home PC, enabling more of TTU's IT team to become application delivery experts. Another advantage of Unidesk is that layered apps behave as if they are locally installed. Without the isolation challenges of traditional application virtualization, all apps can interoperate, even if they are packaged in their own layers.

Layering Reduces Disk Space Needs

Unidesk stores Windows OS and application layers as read-only virtual disks and shares them across many desktops. This reduces the amount of disk space needed for VDI to only 3-5 GBs per VM. The university's Dell EqualLogic hybrid storage arrays with SSD provide the right balance of capacity, cost, and IOPS. With Unidesk's storage efficiency and Dell's IO performance, there have been no complaints about the user experience.

Expanding to All Use Cases

The College of Engineering was one of the first to implement VDI under a project called Mobile Learning Environment and Systems Infrastructure (MoLE-SI™), which received the college's Leighton E. Sissom Innovation and Creativity Award. Marbin Pazos-Revilla, the TTU IT Specialist who helped to create and currently manages MoLE-SI, says VDI has transformed the way students learn.

Explains Pazos-Revilla, "Many engineering projects require students to connect prebuilt development boards to their computers using USB ports and integrate them with other devices such as sensors and actuators. Before, students had to physically visit labs to get hands-on practice with these devices and there weren't always enough lab computers available. Now, students can work with their development boards anywhere by accessing the virtual lab desktops from their own portable computing devices. Unidesk has made managing MoLE-SI much easier for us."

The move to virtual desktops that began with the chemical engineering department has now expanded throughout the College of Engineering, as well as the business, education and nursing schools. VDI is also used by the university's health service clinic to provide secure access to the electronic medical record (EMR) application and for other projects such as food and nutrition and digital signage.

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DEPLOYMENT DETAILS

Application Management

Unidesk

Storage

Dell

Server

Dell

End User Computing

VMware Horizon

Users

4000

Application Layers

161 Application & 2 Windows OS

More Info

3-5 GBs disk space per desktop

4x more frequent app updates