Thomas Jefferson School of Law PCoIP® technology case study

CHALLENGE

TJSL struggled with an outdated IT infrastructure but aspired to provide a technologically advanced world-class education experience. The opportunity came when TJSL moved into a new facility, which was designed to meet LEED green building standards. In just four months, IT staff had to identify, design and deploy a leading edge, green IT desktop virtualization solution for the entire campus.

SOLUTION

TJSL identified Teradici's PCoIP technology, Samsung zero client displays, and VMware View™ virtualization as the ideal solution.

- from identification of need to successful deployment in just 4 months
- 35 servers reduced to 7
- eliminated 200 desktop PCs
- deployed 200 Samsung PCoIP zero client displays

Personalized education taken to a new level with PCoIP technology

Until January 2011, Thomas Jefferson School of Law (TJSL) pursued its mission to provide a unique, personalized education to aspiring law students in two older buildings. Information technology resources had grown organically since the school's inception in 1982, and consisted of 35 servers running separate applications and supporting 200 desktop PC's. The golden opportunity to start with a clean sheet came when TJSL began a project to design and build a custom facility that would be both highly advanced technologically and built to meet the highest environmental standards – two goals which TJSL eventually found to be mutually compatible.

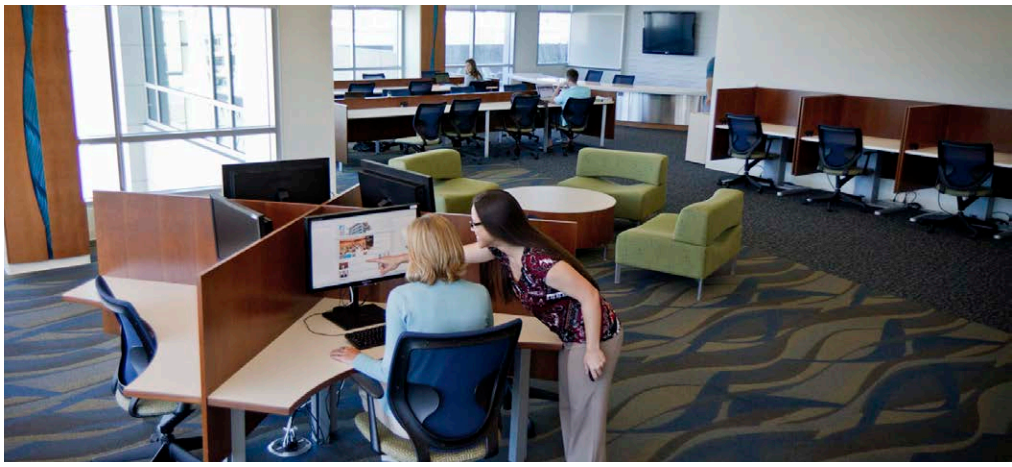
The move toward desktop virtualization began in 2010. Previously, RDP virtualization solutions had only been attempted as proof of concept, and couldn't deliver the full desktop multi-media experience required by TJSL's collaborative education and distance learning initiatives. While RDP was usable for standard office applications, it could not adequately support the multimedia experience routinely used in training sessions.

The objective was to move to a virtualized desktop environment that enhanced the teaching and learning environment – where rich media could be used, and where the user experience would be so similar to a local computing experience that users would not realize that computers weren't under their desks.

With only 16 weeks to the projected move to the new facility, and still looking for a viable desktop replacement, Brian Graham, TJSL's Network Administrator, went to VMworld in late August 2010 and saw PCoIP technology performing on a Samsung zero client display at the Teradici booth. Impressed by its simplicity and performance, TJSL immediately ordered a Samsung PCoIP integrated display.

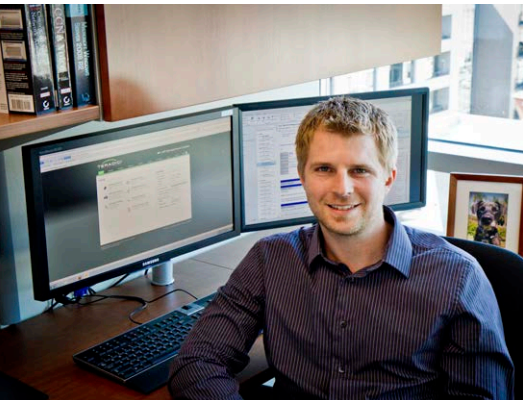
Personalized education taken to a new level with PCoIP technology

"Being high tech is being environmentally conscious and we could not have gotten here without Teradici or PCoIP. Without this solution I don't think the users would have been anywhere near as happy or as excited about their set-up as they are now."



Inside TJSL, there are no PCs under the desktops, and no noise. The students can use any zero client monitor to access their own desktops, and continue their secure session in any location.

Brian Graham, TJSL Network Administrator



With the proof of concept working with one virtual machine and zero client display, the next challenge was ramping up in time to seamlessly deploy virtual desktops and 200 zero client displays to faculty, students, and administration staff as soon as the new facility became available in January 2011.

The first step was to collect data from the individual desktop PCs into the network. The network itself also required work and the domain controllers were upgraded to make sure VMware would run smoothly. File shares were moved to a storage appliance. A total of seven servers, with four new servers hosting the VMware VDI, would replace the 35 original servers.

Although the move to a new building was ideal, it added two weeks to the schedule to enable the new equipment to be installed. While the new data center was being commissioned, the IT staff was going through the rest of the building hooking up the zero client displays.

That work was completed on Christmas Eve. The day after Christmas, the VLAN was created, the DHCP scope was configured, and virtual desktops were spawned. The night before faculty and staff returned to work, all the VMs were spun up at about 11:00 pm. The following morning, starting at 7:30 am, faculty and staff arrived and logged in as usual. As more and more users arrived and logged in, Brian's worry was network capacity and storage overload. "I could trust that the zero clients would turn up and point to the servers. Other thin clients require more configuration and create more problems. A zero client's job is just to wake up and look for a View server." But everything worked, including video streaming.

Brian used Teradici's Management Console to set the profiles for the zero clients and push out firmware updates automatically. "It was kind of a beautiful thing," Brian recalls, "I used to hate having to go from computer to computer to do updates, it can take hours. But with the Management Center I can do it all from my desk; the profiles tell the zero client devices where to connect, and when the user manually reboots the latest firmware always gets loaded. Users expect us to show up at their desks, but with the Management Console we can fix problems remotely. It makes our IT staff much more efficient."

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The data center is cooled by just two small air conditioners. And while virtualizing the desktops reduces power consumption by 75% over desktop PCs, TJSL also saves with the extended life expectancy of zero clients.

PRODUCTS

VMware vSphere™ 4.1

VMware View™ 4.6

Teradici PCoIP 3.4

Teradici PCoIP Management Console

"I really don't know how I would have done this without PCoIP. The fact that I could trust I would turn these (zero clients) on and everything would just work, and with the management console I could roll out options that made me more confident."

While the 200 zero client Samsung displays are used by faculty and staff, certain students are permitted to download the View client to their laptops, so they can connect to their virtual desktops from anywhere. Faculty and staff who have been issued with iPads are able to connect into their desktops. Users like the fact that they can be working on a document at TJSL, leave it on the screen, go home and connect over the internet to continue working. They notice the difference from RDP. PCoIP is a lot faster, and easier to work with.

40 zero client Samsung displays have been placed in kiosks, in another View pool, for students to use for research, and they can save their work to a remote location. All classrooms are equipped with high definition projectors and video conferencing, and a class or a group of people meeting can connect to anybody's desktop, as required.

"Key to creating this new environment was a change in our thinking away from a traditional, rigid server-client computing model to what I think of as a fluid private cloud that will accommodate new ways of working and learning," said Brian. "It's a completely different mindset."

TJSL also met their green IT goals. The data center is cooled by just two small air conditioners. And while virtualizing the desktops reduces power consumption by 75% over desktop PCs, TJSL also saves with the extended life expectancy of zero clients. Brian enthuses, "We used to refresh our desktops every 3-4 years, but now with the Samsung PCoIP zero clients we expect a six year life span. Decreasing e-waste 50% like this is huge, just think of the potential if everyone did this."

Brian concludes, "To put this into perspective, we have not only just become one of the most technologically advanced law schools in the U.S., but we're also way ahead of many businesses out there."

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"As far as PCoIP goes I think the environment is fantastic. It's been a huge success."

ABOUT TJSL

Thomas Jefferson School of Law (TJSL), founded in 1969, is an independent law school in San Diego, California, with approximately 1,000 students and 100 full time and adjunct faculty members. TJSL's new campus opened in January 2011 and comprises an eight story 305,000 square-foot building designed to comply with LEED Gold Level green building standards. The technologically advanced facility is designed to enhance the teaching and learning process and supports distance learning initiatives. The building has a large solar panel array on the roof and contains a moot courtroom, law library, offices, two recording studios, classrooms and collaborative work areas, and a legal clinic.

ABOUT PCOIP TECHNOLOGY

The PCoIP® (PC-over-IP®) protocol is a revolutionary display, encryption and remoting technology. The PCoIP protocol compresses, encrypts and encodes the entire computing experience at the data center and transmits it 'pixels only' across a standard IP network to stateless PCoIP desktop devices.

PCoIP technology allows an organization's PCs and workstations to be centrally managed in a data center while providing high resolution, full frame rate 3D graphics and HD media, with full USB peripheral interoperability, locally over a LAN or remotely over a high-latency WAN.

ABOUT TERADICI

Teradici drives innovation to fundamentally change the way people use and deploy computers by developing technology and solutions that deliver a true, uncompromised PC user experience over IP networks. Our focused approach in designing advanced image processing algorithms enables the physical separation of the computer and the user, and ultimately will change the way enterprises compute.

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