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Landon Winburn,
Software Systems Specialist,
University of Texas Medical Branch

University of Texas Medical Branch improves health of bottom line with Citrix

The University of Texas Medical Branch (UTMB) in Galveston is a health care complex with two hospitals, 10,000-plus employees and a variety of specialized clinics, centers and institutes, including schools of medicine, nursing, health professions and a graduate school of biomedical science.

The challenge – Lower IT costs across the board

As a regional healthcare provider whose patients include low-income and uninsured residents, UTMB must control expenses. The IT department at UTMB has always been proactive in suggesting ways to reduce costs. One recommendation was the implementation of Citrix® XenApp™, Enterprise Edition to deliver the mission-critical EPIC electronic medical record (EMR) solution. Landon Winburn, software systems specialist at UTMB, noted that XenApp centralized administration solved the patch management challenge of this major clinical application. “We didn’t want any installed instances of EPIC anywhere. It takes about 10 minutes to patch all 40 servers at the same time, which is a lot easier than patching thousands of desktops. After that, we started seeing other ways that XenApp could save money.”

Subsequently, UTMB implemented self-service password reset, a key feature of the Citrix solution, to reduce calls to the help desk. Also, the organization installed Citrix® Access Gateway™ SSL VPN appliances for secure, remote delivery of XenApp hosted applications. About 50 percent of UTMB employees use the Citrix environment.

The next target for cost cutting was traditional distributed PCs. “We started looking at thin clients to lower support costs and hardware maintenance, as well as extend the useful life of the devices,” said Winburn. “Our department charges internal customers for our services. Thin clients are about half the price of a PC, offering a substantial cost reduction for these groups. Also, PCs have more hardware and software issues than thin clients. Thin clients just work. With thin clients and published desktops, our remote resolution rate has risen tremendously.”



Currently, the organization supports 8,000 PCs and 2,000 Wyse thin clients. However, Winburn expects those numbers to change quickly. “With our launch of desktop virtualization, the thin client community has grown tremendously.”

Key benefits

- Lowers IT costs
- Significantly reduces storage for virtual desktops
- Provides connectivity during an interruption
- Provides a high-quality experience on thin devices

Applications delivered

More than 150 applications, including:

- EPIC Hyperspace electronic medical record solution
- Microsoft® Office 2007
- PACS
- Mainframe Emulators (Extra! and QWS)
- McKesson CECC and Centramax

Networking environment

- Citrix XenApp Enterprise running on 100 Dell servers
- Citrix XenDesktop, Advanced Edition
- Citrix Access Gateway appliances (one HA pair)
- Microsoft® Windows Server® 2003
- NetApp storage area network
- Dell PCs and Wyse thin client devices

Weathering Hurricane Ike with XenDesktop

In the fall of 2008, Hurricane Ike hit the Galveston area, forcing an evacuation at UTMB. Winburn recalled, “We shut down our Citrix environment on campus and were running everything out of our disaster recovery mirrored site in Arlington, Texas for a month. With XenApp and Access Gateway, we were able to deliver e-mail and the EMR application to displaced users who get a published desktop. It was what people needed at the time.”

However, some PC users also wanted to be able to work remotely during the interruption and they needed more than just e-mail and the EMR application—they needed a complete Windows® desktop experience. Winburn said, “A lot of people brought PCs from offices that were flooded and put them in someone else’s office in Arlington, just so they could remotely connect to their PC from home. All these extra computers were taking up space and power.”

To solve the problem, the IT team quickly implemented desktop virtualization with Citrix® XenDesktop™, Advanced Edition. “We bought a hundred licenses and had XenDesktop running within a week. We were able to get rid of those PCs, save on power and space, and give multiple remote users the complete Windows desktop experience that each one was used to, regardless of their location.” He added, “XenDesktop came to our rescue for business continuity during the hurricane, and now it’s becoming a critical part of our desktop infrastructure.” Many different departments, including research labs and the library, are looking at delivery of virtual desktops to thin devices to save money.

Delivering a high definition user experience on thin clients

A major advantage of XenDesktop is that it provides a high definition user experience on any device. Winburn noted, “With the Citrix HDX technology in XenDesktop, users don’t feel like they give up any functionality when switching to a thin client. One feature of XenDesktop is USB redirection, a capability of HDX Plug-n-Play. This allows us to install the software for scanners on the XenDesktop server and the thin client can communicate with it. We have also deployed signature pads and credit card machines to places that were not possible in the past. This avoids the need to install a high power PC just to connect a lot of hardware.”

Citrix® HDX™ technology offers an array of capabilities, including redirection of client-connected TWAIN imaging devices from the client to the server. This allows users to control client-attached imaging devices from applications that run on the server; the redirection is transparent. Other technologies are HDX MediaStream for a smooth, seamless experience with multimedia content and HDX IntelliCache, which improves performance by locally caching bandwidth-intensive data and graphics and locally staging streamed applications.

Shrinking storage requirements with provisioning services

One of the most powerful capabilities of XenDesktop is single-image management via the provisioning services functionality. This technology streams desktop workloads on-demand to any physical device or virtual machine. According to Winburn, “We are setting up XenDesktop provisioning services so that we can stream a single desktop image over the LAN to thin clients. Provisioning can save storage, lowering the costs of virtual desktops. Instead of a hundred virtual machines taking up 10 gigs of storage each, we’ve got the same number taking up 10 gigs total.”

Meeting the cost reduction challenge with Citrix virtualization

XenApp and XenDesktop, together with thin clients, provide important IT cost savings for UTMB. “Application virtualization with XenApp and thin devices is far cheaper than giving users PCs. Once you license XenApp, you pretty much have only maintenance from that point forward, and that cost is minimal. Further, you refresh thin clients every five years compared to a new PC every three years. Depending on the application, you can get 80-120 users per XenApp server.”

With the implementation of XenDesktop, UTMB has a second solution to encourage the adoption of less-expensive thin clients. “Desktop virtualization is really taking off. Our help desk has been using hosted virtual desktops with thin devices for months with great success, and now, of course, we are implementing streamed desktops as well.”

He concluded, “I would say that cost savings is a benefit of the Citrix solution, followed by flexible delivery to remote users. We showed that with Citrix, employees can get their applications and desktops anywhere, even during a hurricane.”



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