



Virtual desktop infrastructure: Garnering real productivity and enhanced security

Healthcare is changing at a quick clip. Clinicians and other staff members are demanding access to patient information on the go – anytime, anyplace, anyhow. At the same time, organizations are looking to achieve greater clinical productivity as they continually seek to not only improve outcomes but meet the industry’s ever present do-more-with-less challenge. Not surprisingly, then, healthcare organizations face pressing information technology challenges, as they typically need to maintain and keep hundreds or thousands of PCs and devices updated, secure and running to accommodate the digital needs of their staff members.

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CMIO
Edward Hospital

End User Computing (EUC), which combines virtual desktop infrastructure (VDI) – technology that hosts a desktop operating system on a centralized server in a data center – with mobile device management and security, could be the answer to many healthcare organizations’ IT prayers. Instead of working with a locally bound infrastructure that requires users to access or save files to a local drive on computers, with VDI the user’s desktop preferences, set-ups and files are on a server housed on a central server in a datacenter. As a result, a physician or nurse can opt out of using a PC with applications and data stored on it. Instead, VDI makes applications and data accessible, securely through a modern browser or a thin client – a machine, with no local operating system.

An improved clinical game

Perhaps most importantly, VDI improves the quality of the user experience, according to John Lee, MD, CMIO of Naperville, Ill.-based Edward Hospital, which is part of Edward-Elmhurst Health, one of the larger integrated health systems in Illinois.

Indeed, Lee pointed out that “being able to sit down with the same desktop at three locations is extremely helpful.” This is possible as files saved to the user drive are available in the same location regardless of how the system is accessed. “When I log in remotely and access my hospital system through a desktop, it’s essentially the same workspace, the same experience,” he said.

This centralized desktop services empower clinicians to significantly enhance patient care by allowing access to medical applications at any time and from any location. “A doctor in his office might have a large-screen monitor with a full keyboard and a mouse. However, if he wants to see a patient in the hospital, he can show the patient information or x-rays via a mobile device. The patient doesn’t need to get out of the bed or move,” said Tony Dancona, vice president of services for the Technology Solutions Group at Connection. “That’s the advantage of being able to get all of your information and apps on both a stationary device and a convenient mobile device.”

In addition, clinicians benefit from reduced log-in times through single sign-on, session continuity between different endpoints and “follow-me” desktop capabilities.

Easy upkeep

The maintenance of traditional PCs – upgrading the hardware and software, delivering updates, addressing hard-drive failures and troubleshooting downtime – is time-consuming and costly. For example, upgrading from Windows 7 to Windows 10 can be cumbersome, especially for hospitals or clinics with multiple locations and thousands of physical desktops. As such, maintaining traditional PCs can cost more than twice what it takes to manage virtual desktops using modern built-in image management, application delivery, and persona management functionality.

VDI also brings a bevy of benefits to healthcare IT departments. With VDI, the IT department can become more efficient as technicians deliver updates across the enterprise centrally, eliminating the old process of manually installing updates on every desktop. With a virtual desktop environment, the upgrade can be accomplished within the datacenter. As a result, the IT department no longer has to worry about individual staff members using an older version of a software or not having the latest software patch. Perhaps most important, though, the use of VDI enables IT professionals to focus on more strategic initiatives, according to Dancona.



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David Dimond
CTO
Dell EMC’s Global
Healthcare Business

Safe and secure

While mobility increases the risk of protected health information being exposed, especially with the prevalence of BYOD (bring your own device) by clinicians, EUC provides the needed counteraction. With virtual desktops, clinicians can quickly access the medical applications and patient data through secure endpoints that support role-based information delivery and multi-factor authentication. Security is, therefore, improved because the sensitive data, including protected health information, stays in the data center and does not reside on the mobile devices.

VDI also enhances data security through simplification. Indeed, with VDI, the computer or device cannot be loaded with unapproved software that could introduce a security risk or cause the machine to crash. Instead, with virtual desktops being built from a single master image in the datacenter, that master image is then updated with the latest patches and hardened security, which then allows new PCs to be built from the updated master image. “VDI’s ability to instantly deliver the latest and greatest hardened and patched operating system to the user is incredible,” Dancona said.

A comfortable start

To properly assess where and how VDI will best fit into an organization’s environment, it’s important to examine the overall workflow, according to David Dimond, CTO for Dell EMC’s Global Healthcare Business, which has developed Dell Wyse endpoint devices to help healthcare providers gain greater clinical efficiency, secure access to sensitive data and accelerate IT productivity.

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To truly understand such computing needs, clinicians and other staff must be involved in initial planning stages. These front-line professionals can provide answers to crucial questions such as: Will the technology make their jobs easier? Will their peers embrace the technology? What business drivers will the technology support?

Most importantly, however, a thorough assessment enables healthcare organizations to understand what’s needed to produce a good experience. “Preparing for a VDI implementation is about really understanding the users, the use cases, the applications they use and how intensive those applications are in compute memory and graphics,” Dancona said.

More specifically, the assessment makes it possible to understand the graphics intensity, CPU, graphic memory and applications the users need. For example, for a clinician looking at electronic images such as an MRI or an X-ray, there is a need for extensive graphic capability, whereas clinicians who are simply putting in data such as blood pressure numbers and dialysis machine numbers have little need for advanced graphics.



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Services, Technology
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Making VDI a reality

After assessing exactly where to start and what’s needed to succeed, projects should launch with a comprehensive rollout plan. To best meet the needs of end-users while also addressing the need for change, VDI implementation should be rolled out in stages. Bundles of technology exist that allow a project to progress from “proof of concept” (POC) to initial implementation to scaling the project up. Working with partners such as Connection can help, as the company’s knowledge and healthcare experience can be leveraged at each stage.

A POC can serve as the initial stage of the rollout. During this phase, the healthcare organization puts together the criteria necessary to prove what the technology can do for the healthcare organization. From there, the POC criteria are tested in the healthcare organization’s environment.

VDI then is installed through a POC appliance, according to Dancona. Within an hour, the POC device is up and running with all the software and everything the healthcare organization needs. With VDI installed, the Connection engineer gives the healthcare system’s IT department customized training so they can prove out the technology according to the acceptance criteria previously developed jointly. The engineer teaches them how to create master images, inject applications, do patches, create graphics-intensive and non-graphics-intensive desktops, and monitor and troubleshoot. The engineer stays for two or three days and spends that time working with the IT staff. Then the engineer leaves and the IT people continue exploring and learning how the VDI works for 45 to 60 days. During that time, they determine whether the technology works with the way they work in their environment or if it changes the way they work. Connection is available to help the organization during this time period.

A conversation about infrastructure and networks is required. It is vital to ensure that the infrastructure the health system has decided on is easily scalable. If the healthcare organization is using VDI for multiple devices, the wireless infrastructure must be able to support that. The infrastructure must also support a security framework around that, plus patching, applications and access to applications.

A possible next step is a pilot in the hospital that involves more sophisticated users, and a following step would be remote users coming in through a remote security gateway.

“What we do is create a journey for the customer so they incrementally learn how to use and manage the VDI. It’s important that the user has a good experience. If you’re doing things too fast, and the user has a bad experience, then they’ll go back to PCs and won’t want to hear the word ‘VDI,’” Dancona said.



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