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Virtual desktops: User tips from the trenches

Virtual desktops offer benefits, but it can be tricky technology, veterans say.

By Tim Greene, Network World
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Network World - The lure of virtual desktop infrastructure - less costs for endpoints, reduced power requirements, lower management costs, better security - is compelling but mastering the environment is tricky, say users that have embraced the technology.

VDI is not for everybody, customers agree, but despite its pricey initial costs and the need to tweak in order to keep performance high, interest in the technology is growing, says IDC, with sales of virtual client computing to grow from an actual $2.3 billion in 2011 to a projected $3 billion-plus by 2015, a third of that specifically VDI.

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For instance, Beaufort Memorial Hospital in South Carolina, deployed VDI to executives about a year and a half ago, and it reaped security benefits.

Rather than hundreds of hard drives distributed on workstations around the hospital that contained patient information, all that data was stored centrally. None of them was stored on the workstations themselves, says Ed Ricks, vice president of information systems and CIO at the hospital.

Since power consumption for the virtual machine hardware is less, the hospital uses less power and actually received a rebate for that savings from the local power utility.

Help call volume is down, partly because users can self-help for common problems like forgotten passwords. VDI helps bring electronic medical records to the point of service, something that has won the hospital federal and state grants to help implement the system because it promotes "meaningful use" of EMR in accordance with the American Recovery and Reinvestment Act.

He recommends that anyone entering VDI make use of their vendors to evaluate and upgrade their networks first to be sure the infrastructure can handle the traffic quickly enough to give fast response times to applications. VDI vendors have been through it before so take advantage of their knowledge, he says.

Ricks started out testing in a small clinical area to learn workflows and how nurses actually used their machines to determine what desktop image and what roaming capabilities they would need. Knowing what each class of user needs is essential to a successful deployment, he says.

Then educate them about how VDI works and how it differs from the PC terminals they used before.

VDI in medical settings is popular, say John Hoang, Solution Architect, Barbara MacKenzie, IS operations and infrastructure manager at Sydney Adventist Hospital in Australia, a 300-bed facility using VMware VDI products.

One impediment to adoption was enabling single-sign-on for doctors and other clinicians making rounds who have to use multiple different Samsung zero client endpoints per day depending on what ward they're on, Hoag says. "Clinicians don't want to be obstructed by logging in and out 60 times a day," he says. "If it takes a minute each time, that's a lot of minutes."

He's trying out a badge system made by Imprivata that allows the workers to tap the badge and call up their virtual desktop at a new location with all their apps logged in so long as they have already established a VDI session somewhere on the network.

MacKenzie says it's important as organizations deploy VDI to certify in-house expertise so routine problems can be handled quickly and economically.

Sydney Adventist is expanding to a new building that will host a teaching facility that will be used by two different organizations, so classrooms will have dual use. That seems like a perfect use of VDI, but because it is an educational setting, Hoang and MacKenzie expect it will pose unique problems so they are seeking advice from that community.

Oral Roberts University in Tulsa, Okla., started off its VMware deployment with 300 desktops in student computer labs using non-persistent Windows 7 images on Dell FX 100 zero clients with a back end of Dell servers and EqualLogic storage, says Ron Lee, senior systems engineer at the school.

About 30 or so staffers use persistent desktops as their primary work platform, he says. Another 40 or so access persistent VDI images from university-owned iPads as secondary computers. One faculty member tried to use VDI with the iPad to reach her Windows 7 desktop but found it impractical without a mouse and keyboard and with the small screen. But she found it worked well for accessing data on the go.

He says it's important to fit the endpoint hardware to its use in order to get top performance. The school is looking at Wyse (bought by Dell) P25 zero clients because they support PC-over-IP

protocol and are loaded with more RAM for client-side caching to improve application responsiveness.

He steers clear of Z50D thin client appliances because the thin client represented another layer that requires management.

Ultimately the school plans to go to 1,200 virtual desktops over the next three years - but not for everybody. Beyond computer labs, students probably won't get virtual desktops. But they can use the VMware View client on their own devices such as iPads to access generic virtual desktops from off campus. Depending on the version of View, they get the client either from a connection server at the university or at Android or Apple stores for free, he says.

He says VDI is costly but can eventually pay for itself. The school used a private grant to upgrade its Cisco/Enterasys network in preparation of deploying VDI and then to fund the virtualization software itself. While he wouldn't say the cost, he says that at the end of eight years the school will spend half what it would have had it not transitioned to VDI with the break-even point coming sometime in the fourth year.

He has several recommendations. Phase in the deployments with the simplest ones first, Lee says, because there is a learning curve.

Squeeze useful information out of the virtual infrastructure with third-party tools. For instance, he uses Xangati performance management software to get better views of virtualization metrics. Xangati gives real-time readouts of processor load on VDI server hosts, something that was available in VMware's Vcenter but without a convenient way to view it.

Be wary of creating too many virtual desktop gold images because they create more work. The more images there are, the more updates have to be applied. He recommends figuring out how to create a common-denominator base image that fits the largest number of end users. To keep down the number of images, he deems it unsuitable to use VDI everywhere.

Scripps Networks - the company behind the Food Network, the Cooking Channel and the Travel Channel - relies on VDI for its developer community, says Selene Tolbert, project manager for development operations at the company's Knoxville, Tenn., headquarters.

The company uses collaboration extensively to support its agile software development process and its developers around the world. If developers tap into a virtual desktop remotely and it goes bad, they call up a new one if the old one can't be fixed; the user continues working.

She recommends tracking what tools end users need and when time comes to upgrade gold desktop images, incorporate them.

She says it's imperative to check how licensing differs for applications when they are deployed virtually vs. being installed on PCs. The costs can differ significantly, she says. Some open source vendors don't care about the licensing but may have versions of their application that might be tuned specifically for cloud virtual desktop deployment.

When choosing how to deploy VDI, businesses should remain open to using desktop-as-a-service offerings, she says. The company chose Quest in 2011 because its DaaS service underpinned by Desktone's VDI platform supported the Citrix HDX virtual desktop protocol, and Scripps was pleased with the quality of Quest's service.

Desktop virtualization cheat sheet

It may be more expensive to host VDI in the cloud even with the costs of hardware, cooling, floorspace and staff with their benefits packages. It's worth a few hundred dollars per month extra to avoid all that and have the option to expand the infrastructure rapidly when the need arises, she says. "We didn't want to grow IT to the point where it was taking away from broadcasting," she says.

One lesson she has learned is that end users, particularly in the development community, prefer to choose the platforms they work on. Some Scripps developers want VDI but steer clear of it because they don't want to use Windows, and as a result she is seeking better VDI support for Linux.

About 50 to 80 users opted not to use VDI, so the company still maintains data center resources for them. But the 57 who do use VDI still represent a reduction in the resources needed.

At MetroHealth Hospital in Grand Rapids, Mich., VDI was embraced early and has been evolving for six years, says Aivars Apsite, technology strategist for the facility.

The hospital employs VMware View and is in the process of replacing endpoints with zero clients. Within five months it will have 1,800 zero clients and 1,000 or fewer PCs. The zero clients will be a mix of Wyse P20s and Wyse P25s OEMed through Cisco. The P25s support USB2 which is needed in some settings.

He's found that it's potentially less costly to employ pooled virtual desktops rather than static ones dedicated to each user.

The idea was to save 25% on the number of sessions the system would support. It cut its virtual desktop licenses from 4,100 static to 3,000 pooled. As it turned out, that grossly overestimated the need, Apsite says. Currently 4,200 Active Directory users use just 1,400 to 1,700 logged in sessions and just 500 to 700 of those simultaneously.

He uses the surplus sessions to give him a back-off option when deploying VDI upgrades. So if he deploys a new View version to a department and there is a problem with it, users can call up a virtual desktop from a pool of the previous version until the problem is fixed. It's as simple as logging off and logging back on, he says. He recommends having a third of the environment available in this way for migration planning.

Make sure the required applications are supported before any upgrades are made to the virtual desktop operating system, he says. The center is still migrating to Windows 7 from Windows XP, and that is being done with full support from all the required applications that must run on it.

Windows 8 is probably a long way off because all the medical applications will have to support it first. "The user interface for Windows 8 is slick," he says. "A lot of us like it but a lot of our core apps have to get their heads around it first."

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