

2009: The Year We Virtualize The Desktop (VDI)



Alan Murphy, 2009-07-01

I typically try to stay away from prediction lists – that’s not to say that I don’t think about and plan for the future, I just try to avoid saying “In the Year 2000…” (in my best falsetto) at the beginning of each new year. There are so many unknowns, things we can’t predict or even begin to imagine will happen, that interject themselves throughout the year and send things all askew. It’s the old The Butterfly Effect cliché in action; prediction lists are usually either too specific to be accurate or too broad to be applicable.

That said, however, I do think that 2009 will be the year we see the enterprise virtualization focus mostly shift away from virtual platforms and application-focused VMs towards virtualizing the desktop. Those platforms and app VMs will still be a requirement, and with the pending release of VMware’s vSphere we’ll continue to see this area grow, but not with the focus and attention that we’ve seen over the past two years. This year I think we’ll see VDI step into the spotlight and get all the attention. IT need is driving this to some degree; VDI (in theory) will help manage costs – hardware, management, headcount, etc – and will facilitate the continual growth of telecommuting (something I imagine more enterprise will embrace as they save on facility costs this year). But more than need, VDI is The Next Big Thing (TNBT) in virtualization, the next cool technology that all us engineers love playing with and seeing what cool things we can do with it. Virtual platforms are *so* 2008. :)



But there are some major challenges with VDI; some similar to the challenges we saw (and are still seeing) when virtual platforms sprang from desktop playing to data center production overnight, and some very specific to virtual desktops. In particular, there are two challenge areas that I’m concerned about with mass adoption of VDI:

1. **Delivery Performance:** The #1 challenge I see to VDI is figuring out how to optimize and deliver images stored in a massive centralized data center out to users all over the world over varying network conditions. The same challenges we see for delivering any network application over latency-heavy links will become painfully obvious when screens are continually re-drawn. The big players, VMware and Citrix, are both creating systems to optimize and segment delivery both on the wire and on the back-end (check out VMware View’s integration with ThinApp and their support for thin clients as examples). Even the LAN, for VDI solutions inside the office, will have to adapt to massive data increases on the wire with VDI.
2. **Video Performance:** One of the ongoing challenges to virtual machine clients on the desktop is video graphics performance. Rendering advanced graphics through a hypervisor is extremely expensive process-wise and not trivial to implement. On a standard local client, such as running Vista on your laptop, things like 3D image rendering happens with direct access to the video card; in other words, it’s done in hardware, not software. With virtual guests that rendering has to be done through a software layer, and we’re seeing companies every day release minor tweaks to allow incremental support for advanced graphics. [Virtual Computer](#) has [built a specialized implementation of Xen to handle 3D graphics](#). [Parallels’](#) latest Desktop 4.0 build release fixes a bug in a game manufacturer’s [facial rendering engine so players can now smile](#). Yep, A patch had to be added to show virtual happiness. :) This graphics limitation is going to severely limit who can deploy VDI: enterprise users updating XLS and DOC files, no problem; medical, design, gaming, video – any graphics-dependent industry will have to wait.

And of course there’s always management and security, but those are more fun to talk about *after* the solution has been deployed, right? ;)

Solutions exist today for #1, network performance. Many, many companies are looking at ways to optimize delivery on the software side, improving the terminal services/RDP experience, but this will take time. Tools like [BIG-IP LTM](#) can optimize the VDI experience today by managing access to and delivery of VDI images, and in fact we have a great deployment guide on [using LTM with VMware's VDI](#) products. #2, the graphics problem, well, that's going to take some time. The VDI companies will continue to work on solutions for rendering high-end graphics, but they're bound by physical hardware limitations in architecture and deployment. That will be something that needs to be overcome, and we'll need to move away from this "VDI build 0.42.1 addresses the 'mouth won't open' glitch when a character eats bacon" model and support 3D rendering out of the box.

There are still a few barriers to mass adoption, for VDI to become an "everything, everywhere, for everyone" technology. 2009 will definitely see companies pushing out VDI to the masses, either because they're immune to or solved the two challenges above, or because they want to push the envelope and test out any technology that can possibly save them money and make life easier. Until then, I'm fine running good ol' XP in a VM without any fancy bacon-eating character graphics. :)

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