

Re: Does the video card play any role in RDP/Citrix sessions?

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- *From:* doug.masters@xxxxxxxx
 - *Date:* 9 Sep 2006 14:21:20 -0700
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Wow, thanks very much for your thorough answer!

We're going to try this out first by having an engineer put AutoCAD and the other apps through it's paces by RDCing into a standalone workstation, all I know about AutoCAD is how to launch it :-). These same engineers are currently using AutoCAD 2000 via Citrix without any issue, but AC2006 is a whole new beast.

Bernhard Tritsch [MVP] wrote:

Terminal Services both on Windows Server 2003 and Windows XP include a driver that acts as the video driver within the TS user sessions. This means that the local video hardware on the server is not used. All graphical output created inside the TS user sessions is directed through the RDP video driver, which converts the GDI calls into an RDP video stream being forwarded to the network driver. As a result the quality of video hardware on the Win2003-based or XP-based Terminal Server does not directly affect graphics performance of TS user sessions. This is why the video driver of Virtual Server that is being used by Windows XP as a guest system will not directly affect graphics performance of the remote connections via RDP. Performance will only be degraded by multiple instances of Windows XP running in their VMs when they all try to access the resources on your host server—such as RAM and CPU.

Things look differently on the client side. Here good graphics hardware can make quite some difference compared to poor performing video cards. Again the reason is obvious: The RDP data stream reaches the network protocol stack on the client. It's forwarded to the RDP client application, which converts the included video information into graphics commands displayed by the local video driver + video card. Fast video card in conjunction with enough CPU power (used for RDP decompression and decryption) on the client side means better graphics performance.

As you can imagine, graphics performance is also affected by the network bandwidth available for the RDP data stream. A high-end server on one side

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and superior graphics hardware on the other side of the network won't help you if the transport of RDP video data sucks.

BUT there is a big problem regarding AutoCAD. I think AutoCAD uses OpenGL or some other 3D graphics standard, which is accelerated by good local graphics hardware. This hardware acceleration will not work using RDP. If you run AutoCAD in a TS environment, the OpenGL graphics will be converted into pixels on the server side only using the capabilities of the RDP driver. Those pixels will be transmitted to the client within the RDP data stream and displayed on the client side. As you can imagine, this is not the most effective way.

For AutoCAD users, in your Virtual Server scenario you are making things even worse: You are running Windows XP within Virtual Server, the system driver settings are not optimized for high-end graphics. Additionally you the RDP protocol stack described sooner, which is not optimized for high-end graphics applications as well. I doubt that AutoCAD will run smoothly in such an environment. For all the other standard applications, however, your scenario looks good.

Currently Citrix is working on Project Ocelot, which will be able to take advantage of OpenGL graphics accelerators in SBC scenarios. This may change the landscape of using high-end graphics in TS environments. But today, your users will not be very happy with the performance of their AutoCAD if they were used to running it on their local high-end workstations.

Benny

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Bernhard Tritsch
MVP Windows Server – Terminal Server
Author of "Windows Server 2003 Terminal Services", MS Press
<http://www.wtstek.com>

<doug.masters@xxxxxxxx> wrote in message
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I'm inclined to say "not really" but that's based on nothing, just a hunch.

To make a long story shorter.... We're looking at buying a very well equipped Dell 9-series server to run 7 virtual XP Pro systems via MS Virtual Server. Server & Virtual Server will be the 64-bit edition, the XP's guests will be 32-bit and the users will access the XP guests via RDC. The XP boxes will be running a few minor in-house developed apps, nothing exciting or demanding really except.....they will also be running AutoCAD 2006 on occasion.

The boss is concerned that the lack of video power on the server will

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cause issues with the XP systems, but I say that it all looks like host processor use since the XP systems aren't real.

Anyone able to shed any light on this?