

WHY DOES VDI REQUIRE ITS OWN MONITORING TOOLS?

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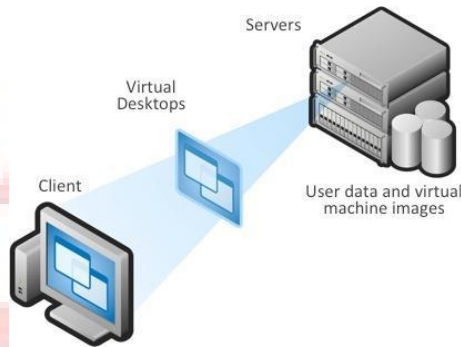


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This article considers end-user expectations in terms of experienced performance of applications or desktops delivered by a technology variously called VDI, Desktop Virtualization, Remote Desktop, App Virtualization ... you name it.

However, one of the main reasons VDI implementations often don't make it off the ground is that users don't like the performance of virtual machines.

Performance Stumbling Blocks in Desktop Virtualization



There are a lot of marketing names out there for a technology which basically separates the presentation layer (GUI) of an application from the processing logic. There are also a large number of different protocols and products on the market to achieve this split and assist in building manageable, user-friendly environments.

Where are the stumbling blocks to delivering good and acceptable performance as perceived by the end-user?

At the end of the day the end-user gets either the GUI of an application or a complete desktop including the application GUI which are delivered via a remote protocol. From an end-user performance point of view this application or desktop should perform equal to or better than could be expected from a locally installed application or desktop.

Login: When starting a remote desktop or a remote application a complete login into the environment must be performed. For a desktop it is generally accepted that a login takes 15 to 30 seconds. Since login is usually performed only once a day in most environments, login to desktops (if configured and optimized correctly) is not a significant issue.

however, the same login process (up to 30 seconds) becomes a problem if this time is needed to start up each remote application where the user would expect the application to start instantaneously. Advanced VDI products include support for a technique called prelaunch, which performs a hidden login and pre-launches a session context in which

remote applications can then start as quickly as local applications.

Logoff: with the advent of the sleep and hibernate functions in modern operating systems, users are not used to performing logoff actions frequently. VDI, however, relies on freeing resources (because resources are shared) therefore logoff must be performed. The time it takes to logoff could be hidden from the end-user by disconnecting the screen first and then performing the logoff actions in the background. Most of this logoff duration is determined by the time needed to copy roaming profiles.

Roaming Profiles: A VDI environment is most likely built on some kind of roaming profile. Since the user's session context is built on random, least-used resources, roaming profiles are key for a consistent user experience. Unfortunately, even modern software does not entirely support roaming (Microsoft OneDrive cache, for example, is stored locally in non-roaming %Appdata%\local). Since profiles must be copied in during login and copied (synched) out during logoff, a small profile and folder redirection is recommended.

Device remoting: USB, pervasive use of resource-heavy webcams, and softphones make support of peripherals for virtual desktops a moving target.

Supporting peripherals is key to the virtual desktop user experience. Without access to their familiar printers, cameras, USB ports and other peripherals, users won't be as accepting of desktop virtualization. As an administrator, you need to know which peripherals are out there and how to support them in a virtual desktop environment, and most of all you need to know what the end-user performance experience is with these devices once the VDI solution is in place.

Remote Access: If the VDI environment is accessed over a WAN connection there are several parameters to consider. At first, everybody thinks about bandwidth constraints.

Limited bandwidth used to be the predominant source of network issues impacting user experience. But latency, or the connection's quality (i.e. packet loss), is usually more crucial.

For today's mobile worker the biggest issue is spectral interference. In a downtown office building, there are Wi-Fi networks on the floors above and below you and across the street. They are all creating constructive and destructive interference patterns that result in dead zones, high packet loss and degraded interactivity. End-user performance is heavily influenced by this packet loss, even when the end device shows strong network signal levels and sufficient bandwidth is available.

Latency on long distance connections (e.g. a datacenter in US supporting a user in China) adds another problem to the VDI user experience scenario. By definition there is a protocol in place which separates the presentation layer (GUI) from the processing layer, so it is easily understood that when the user is on a WAN connection with high latency (>150ms) the user will notice delays while typing even in simple programs like editors or data entry masks of CRM tools. Latency caused by distance cannot be influenced but one can work on some of the symptoms which are inherent in the TCP/IP protocol. Here WAN optimization products do help.

Why does VDI require its own monitoring tools?

You can't use your server monitoring tools for VDI performance monitoring. The goal of monitoring virtual desktops must be to assess the user experience, while most monitoring tools on the market are generally documenting resource usage. Further, virtual desktop workloads change significantly more often than those of traditional PCs or servers, so you have to monitor them more closely and more frequently. Look for a tool that monitors end-to-end (frontend to the backend servers) connectivity and offers metrics about the

network, the physical machines and the virtual machines.

A monitoring solution designed with end-user transactional performance in mind provides IT Ops with application and virtual desktop performance monitoring that is correlated to user productivity. Armed with this data, IT Ops can rapidly investigate users' complaints of poor app performance, determine other impacted users and the likely root cause. Then they can resolve the issue before workforce productivity is impacted. For that reason, IT organizations will increasingly be using performance metrics such as application and transaction response times. These end-user experience indices allow IT to monitor the speed of applications and to evaluate the quality of the end-user experience.

Passive end-user application performance measuring systems, combined with solutions supported by plenty of CPU resources, spare network bandwidth, affordable storage space and Big Data analyses are able to provide a seamless, end-user, desktop virtualization experience.

Tired of Finger Pointing?



After more than 20 years of experience with Citrix application delivery, myself and most of my customers are tired of taking the blame for sluggish application performance and the finger pointing every time there is an issue with application performance.

Today, success of Citrix deployments is crucial to many of my customers, because they are designing their entire IT delivery around Citrix technology. Nothing shines a light on an IT team's success or failure as much as the application performance and availability does. High uptimes were IT's priority in the past, however, today they need to adopt a more

holistic approach to performance management and decision analytics. New tools entering the market can help companies leverage IT investments made. There is a need to discover, interpret and respond to the myriad of events that impact IT operations, security, compliance and competitiveness. Frankly speaking, IT cannot depend on the help desk to be its eyes and ears for keeping systems running at their best, they need to have bulletproof data to prove meeting their SLA obligations.

Monitoring solution designed with end-user transactional performance in mind, will provide IT Ops with application and virtual desktop performance correlated to user productivity. Armed with this data, IT Ops can rapidly investigate users' complaints of poor app performance, determine other impacted users and the likely root causes, thus resolving the issue before workforce productivity is impacted. For that reason, organizations will increasingly be using performance metrics such as application and transaction response times and end-user experience indices that allow them to monitor the speed of applications and to evaluate the quality of the end-user experience. Plenty of CPU resources, spare network bandwidth, affordable storage space and Big Data analyses will help to build passive monitoring systems and solutions which are able to deal with the huge amount of data gathered by the monitoring sensors installed.

We at X-Tech believe that AppEnsure offers a monitoring solution as described above. The unique technology was promising when introduced to us a couple of years ago, which is why we partnered with AppEnsure and continued to work closely with them to fine tune the solution as THE end-user centric performance monitoring tool for all Citrix deployments.

