

IMPLEMENTING A VIRUTAL SOLUTION IN A HIGH DEMAND ENVIRONMENT

Challenges

Hoping to avoid the costly renewals of private leased lines and meet the challenges of ever increasing market data volume, a leading proprietary trading firm wanted to investigate thin client technologies and a potential replacement with VDI. As a company where the average trader is utilizing four monitors at high resolution with a lot of real-time graphics, they have a very demanding desktop computing environment and a need for a low latency and feature rich user experience, characteristics of a 'worst-case' environment for VDI initiatives. Upcoming leased line renewals in five office locations created the additional requirement of a hard deadline for implementation and training.

Selection Criteria

As heavy users of real-time trading programs, the company needed a VDI solution that was able to handle time and latency sensitive applications. Due to these requirements, user experience on the VDI solution had to be comparable to the existing solution where the trading application was run on a local desktop and market data was distributed via leased lines to all of the offices. A proof of concept was needed to show how Citrix could work within their environment and handle their applications.

Solution

Citrix XenDesktop was chosen to deliver desktops within their environment. While most VDI solutions are based upon a hypervisor running virtual copies of desktop operating systems, they required a solution that provided the same number of resources to each user desktop and ensured that no user's resource consumption could impact another user's session. All users needed unfettered access to system and market data resources during peak market activity without slow down or compromise. To accomplish this, we utilized XenDesktop's FlexCast technology to stream the operating system to HP Blade Workstations which users can access via the Citrix HDX protocol.

A normal virtual desktop uses a hypervisor because CPUs have become so powerful that the average user doesn't need a dedicated CPU and memory to do their work. Due to this increase in power, it is typical for a 2 CPU multi core server, with Task Works, to support 50-75 virtual desktops. However this environment was unique where the trading applications would begin exhausting resources and degrading user experience beginning at 8 virtual desktops.

This taxing environment would have required a significant investment in CPU servers to accommodate for all traders. A less expensive and more effective solution for this environment was to utilize HP Blade Workstations. With the blade workstations in place every user gets their own CPU and memory so resource saturation by one user won't affect the rest. To further reduce costs and management requirements, a master OS image is managed centrally and deployed to each blade daily.

To help optimize the Citrix traffic and create a better user experience, Vandis installed an HA pair of Citrix Branch Repeaters at their data center and one at each branch location. These appliances reduced the amount of bandwidth being used by up to 40% and lowered the users' perceived latency by caching duplicate parts of the ICA stream and redistributing it locally instead of having to fetch duplicate data over the WAN.

To help implement the solution by the required deadline, Vandis engineers were brought on site for technical support. Vandis engineers worked with their engineering team to design and architect the solution, carry out the POC, implementation, and the cut-over to the new solution.

Results

The Citrix VDI solution was brought online into the cloud alongside the leased lines so that a switchover could be made with no downtime. With Citrix XenDesktop and branch repeaters in place, they no longer have slowdowns during peak trading times and they have no delay in pushing out market data to their remote locations. Remote traders are now able to freely move between branch offices while maintaining the same user experience and desktop they are accustomed to

Without having to pay high monthly leased line fees they expect to reach an ROI within 10 months. They now also have the ability to centrally manage their environment, giving them more control over their network. They are also now able to deliver and update in-house trading applications to all desktops in a matter of seconds from this central location, freeing up technical resources that previously had to manually manage these applications. Other added bonuses of the VDI solution include increased security, due to data remaining within the data center, and ability to create a more efficient DR solution.