

XenApp Scalability with Hosted Desktops and XenDesktop

One of the more important topics that should get much attention during any XenApp environment planning is that of scalability, whether it be planning for a new infrastructure or even an upgrade of an existing one. There are a couple of different ways to think about how to examine scalability in your environment, and in this article, we'll go over some of things to consider in that planning.

Over the years of software releases of XenApp by Citrix, their developers have evolved the product to be more highly scalable in just about any environment. From MetaFrame 1.8 up to today's XenApp 6.5, being able to scale the host environment out and up when needed was a high priority in the development and engineering process. 2013 will usher in a whole new XenApp, with even more scalability features and architecture, in the Project Avalon release that will most likely be announced at this year's Synergy conference. The two included sub-projects under Avalon, Excalibur and Merlin, could prove out to be the best XenApp offering yet.

Given that those projects are still considered vapor until their release, and more important, adoption by the XenApp community at large, let's take a look at some of the things we should consider for our existing XenApp version 6.0 and 6.5, including XenDesktop, environments when we need to plan for scalability. Of course, XenApp and XenDesktop should be considered separately on these points, but in inevitability of the future of cloud based infrastructures, they will most likely come together as one heterogeneous environment, especially if you are considering the XenApp Hosted Desktop as a solution, either along with XenDesktop or by itself.

I've gone through some of the written postings from Citrix on scalability factors and, while I agree on most of what is talked about, some of it just does not seem to fit in my "real world" situations that I have experience with. For example, [this recent Citrix Professional Services blog posting](#) points out that CPU is "always" the primary bottleneck for XenApp 6.5. I disagree as I have seen more times than I care to count that disk I/O has been the primary bottleneck, especially with Hosted Desktops and/or XenDesktop implementations. RAM has been a close second (sometimes first), with CPU picking up the back. The author does not explain his testing scenarios, so I cannot compare them truly one-for-one with my experiences. I am curious on how he came up with those conclusions. In the [second posting](#), he does offer quite a bit of information on formulas and how some of the scalability numbers have been taken from those formulas, but again, these are not what I consider to be very "real world" examples or scenarios that he is describing, at least not very real in the world of Citrix that I live and breathe every day. Also in the second posting, he does introduce the idea that Disk I/O plays a part, and even adds a more complete section of it in [his third posting](#). I'm still debating his findings, especially since he uses a PVS image for deployment, so I'll have to do some more head banging on that

and post on my findings. I'm not saying he is wrong in any way, I'm just saying that his findings don't necessarily match up in kind with a consultants' experiences.

While Citrix has published the [Design and Scalability Considerations for Enterprise XenApp Deployments whitepaper](#), it does not directly address the impact of scalability on hosted desktops or XenDesktop implementations, along with having not been updated since 2011 which is considered "old data" in today's technology terms.

There are several other analysis whitepapers out there for different types of hosting environments, including Infrastructure as a Service (IaaS) providers that provide a wealth of theories, scenarios, and formulas for creating a scalability baseline for your environment and your situation. I suggest you create some more space in the "tech" lobe of your brain and start consuming all that you can! Here is a listing of papers and such that I have found that can get you started. Some are newer than others, so always take into account the age of the data and its relevance.

[Andy Baker's Blog postings on Scalability \(the series links are at the top\)](#)

[Amazon EC2 XenApp Scalability Analysis](#)

[Scalability and Economics of XenApp on Amazon Cloud \(not from Amazon, and pretty interesting reading\)](#)

[Designing a Scalable XenDesktop Farm](#)

[XenDesktop Scalability Guidelines](#)

[Scalability Analysis for Intel Nehalem processors](#)

[Autodesk AutoCAD XenApp 4.5 Performance Analysis \(outdated big time!\)](#)

[AMD Scalability with AMD processors \(REALLY old stuff. Surprisingly, some of it is still relevant. C'mon AMD, time to update!\)](#)