

Virtual Desktop Infrastructure Using Hyper V and XenDesktop

**A Scalability and Usability testing for
Microsoft Hyper V and Citrix solutions for
delivering Virtual Desktops**

Solution Whitepaper

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1. Introduction

This document reflects the scalability of XenDesktop delivered desktops based on the Hyper V architecture. The Scalability is expressed over three prevailing architecture types listed here:

1. Desktop Virtualization based on XenDesktop and Hyper V
2. Desktop Virtualization XenDesktop/Hyper V utilizing Application Virtualization from App Virt.
3. Desktop Virtualization XenDesktop/Hyper V utilizing Presentation Virtualization from Xenapp \

This document will describe the testing environment and will display the results based on Vista and XP on Hyper V.

2. Testing Environment

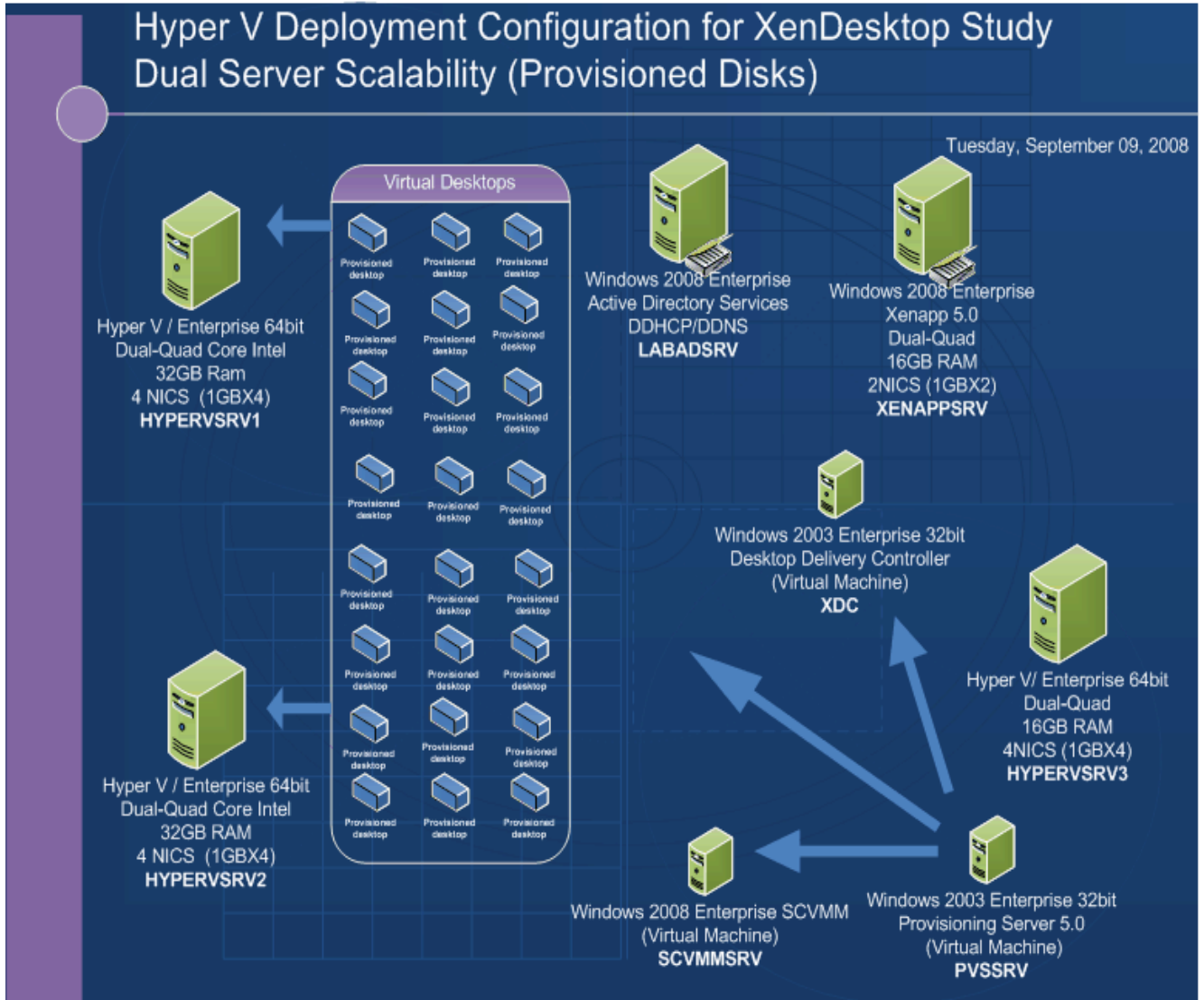
All testing was conducted on a pair of C3000 Blade infrastructure. The Blade infrastructure housed all components for the Testing

All testing was done on XP and Vista utilizing Ranging Memory Sizes to provide User Density based on the Solution architecture.

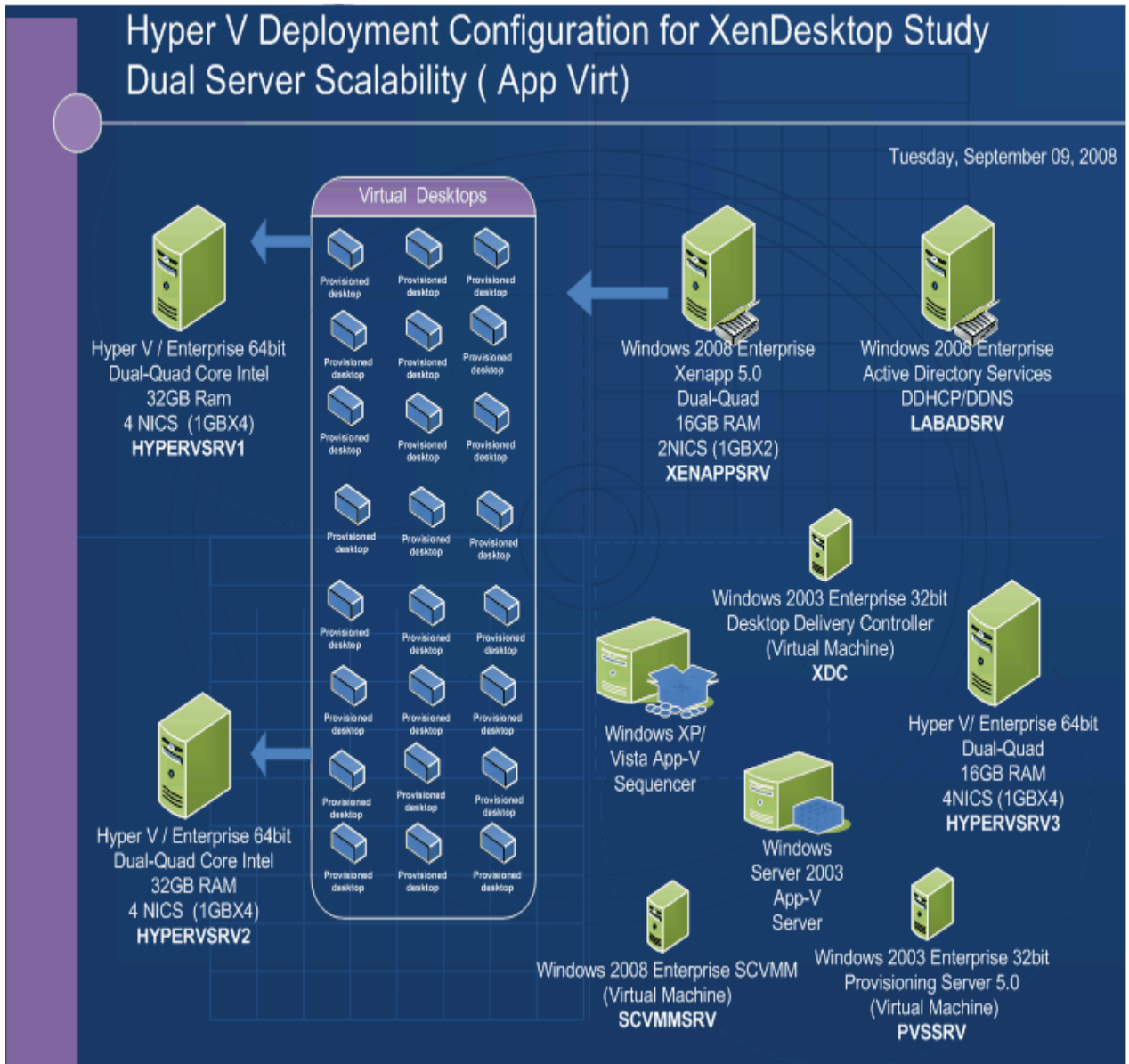
All Virtual Machines were deployed on the iSCSI SAN, with LUNs only visible to single hosts. Templates for the Hyper V virtual machines were stored in ISCSI with the other Virtual Machines. Citrix Provisioning Server disk images were stored on a virtual disk directly attached to the server. The write cache for the disk images were written to the same disk.

A script was run across the Virtual Machines to create a User experience. The user executing the script should end in a 3:19 minutes timeframe as an unencumbered user as a standard baseline. The Script will be executed in a standard time frame of 3:30 minutes any deviation of the start and stop time based on increased time of execution of the script will be considered a degraded user performance of more than 10% (3:36) will be removed from the counting .

2.1.1.1 Solution Architecture: One



2.1.1.2 Solution Architecture Two



2.1.1.3 Solution Architecture: Three

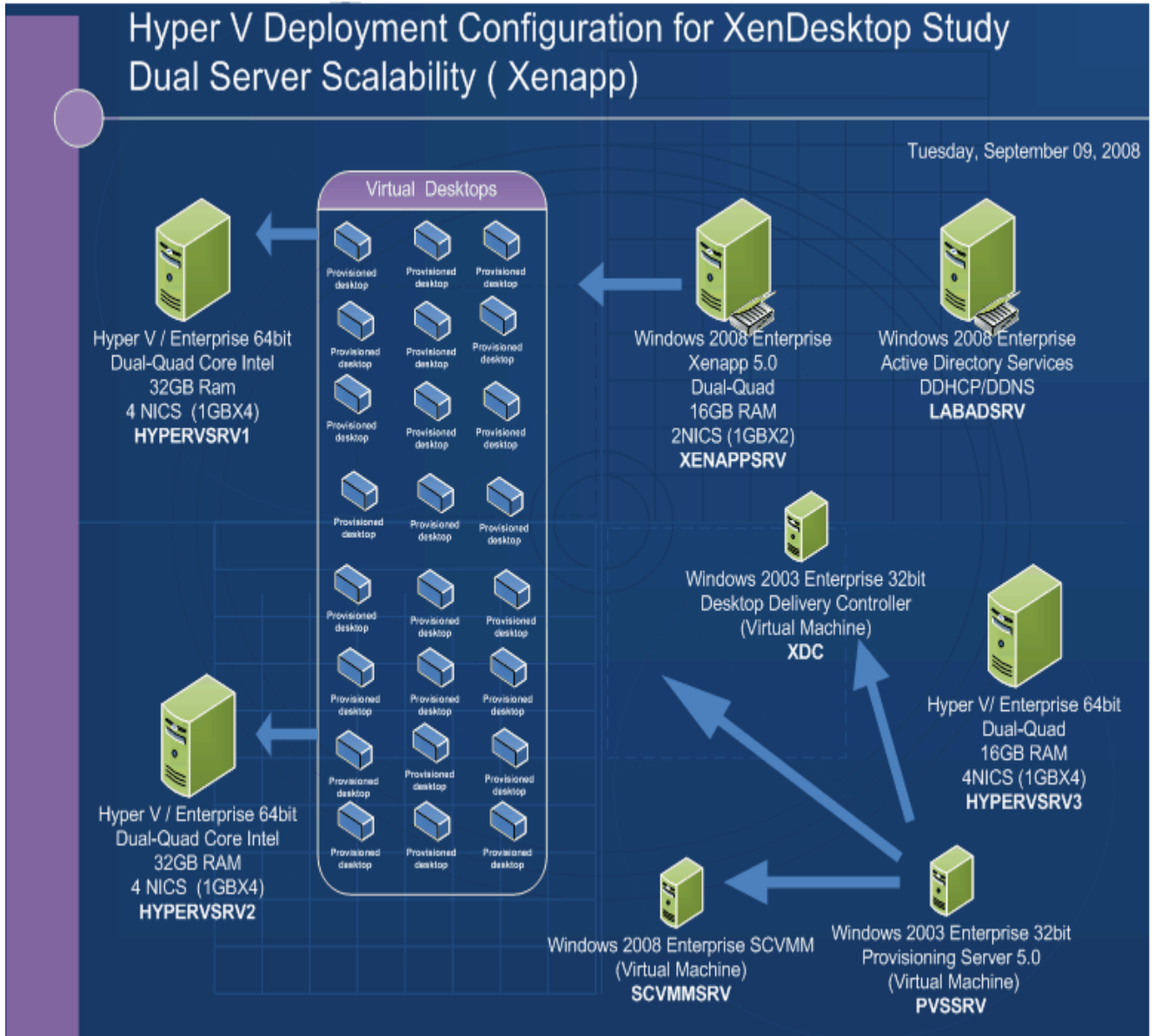


Figure 1

3. Architecture Analysis

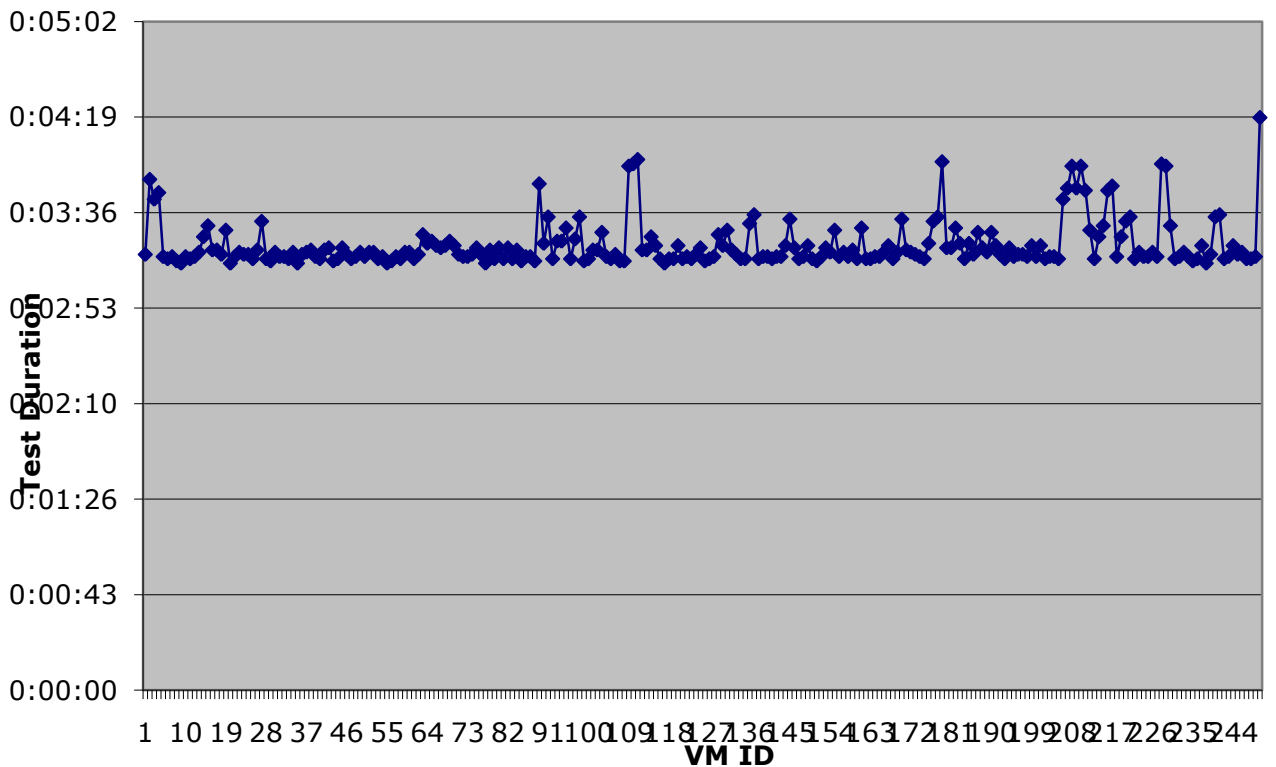
Solution Architecture One: The solution Architecture one was based using Hyper V as the Virtualization platform and SCVMM2008 as the management platform for the Xendesktop Architecture.

Results: This solution architecture for windows XP is a has high user density for executing the Script we found it can do 45 XP machines based on 512MB of Memory that it could execute within the controlled time frame with ut user degradation.

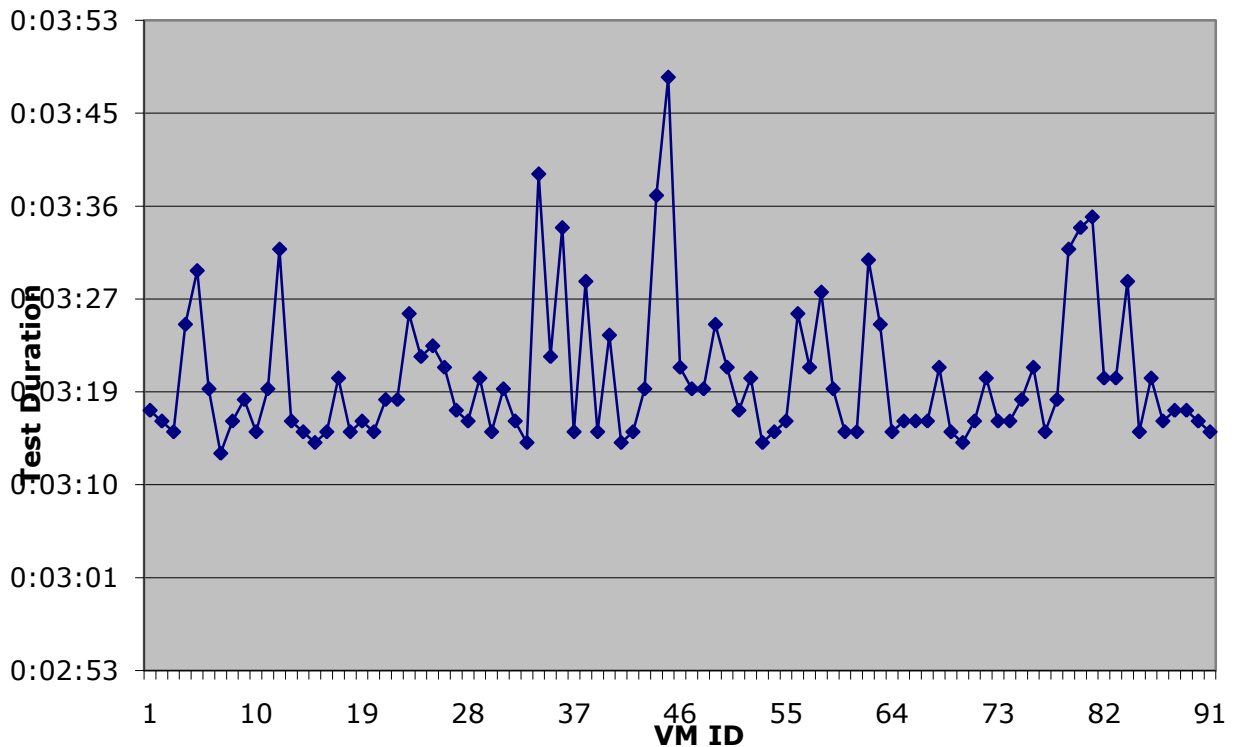
Under the same conditions using Windows Vista we found 28 Vista machines with 1GB of Ram could be run before user degradation of the executed script.

From the Host perspective when the script was executed we found the Host to be at CPU at 65% spiking to 90% and memory at 85%.

Scenario A Test Completion Times



Scenario A Vista Test Completion Times



Solution Architecture Two: The solution Architecture one was based using Hyper V as the Virtualization platform and SCVMM2008 as the management platform for the Xendesktop Architecture and using Application Virtualization.

Results: This solution architecture for windows XP is a has high user density for executing the Script we found it can do 45 XP machines based on 512MB of Memory that it could execute within the controlled time frame without user degradation. Based on the increased overhead of App virtualization we found app startup and execution in the initial testing less then desirable. The timeframes were outside of the baseline time so timing for this exercise was based on a 4:13 minute timeframe and was unpredictable at times for the testing

Under the same conditions using Windows Vista we found 26-28 Vista machines with 1GB of Ram could be run before user degradation of the executed script.

From the Host perspective when the script was executed we found the Host to be at CPU at 85% spiking to 95% and memory at 85%.

Solution Architecture Three: The solution Architecture one was based using Hyper V as the Virtualization platform and SCVMM2008 as the management platform for the Xendesktop Architecture and using Presentation Virtualization from Xenapp 5.0.

Results: This solution architecture for windows XP is a has high user density for executing the Script we found it can do 48 XP machines based on 512MB of Memory that it could execute within the controlled time frame without user degradation. Using Presentation Virtualization and minimizing the Memory requirements for Vista we found we could gain increased user density for the Vista platform by lowering the memory. Time deviation based on degradation was less then 11%

Under the same conditions using Windows Vista we found 34-38 Vista machines with 768 MB of Ram could be run before user degradation of the executed script.

From the Host perspective when the script was executed we found the Host to be at CPU at 65% and memory at 85%.

