Reference and Capacity Planning for Citrix Presentation Server in a VMware ESX Server Environment

Technical Product Management
Feb. 2005
Reference & Planning for Virtualizing Citrix

Overview

• Introduction to Citrix Products
  • How they work together

• Introduction to Virtual Infrastructure
  • VMware ESX Server & Terminologies
  • VMware ACE and Citrix

• Benefits to Virtualize The Citrix MetaFrame Suite

• Implementation Guidelines
  • Planning, Sizing, Performance, Manageability, Availability

• Summary
  • Where to get additional content
Introduction to Citrix Products
How they work together

Citrix MetaFrame Access Suite

Data Center
- Citrix MetaFrame Presentation Server for Windows
- Citrix MetaFrame Presentation Server for Unix
- Citrix MetaFrame Secure Access Manager
- Citrix MetaFrame Conferencing Manager
- Citrix MetaFrame Password Manager

Single Point Access

Secure LAN/WAN Access

Secure Access

Internet

Secure Remote Access
Introduction to Virtual Infrastructure

VMware ESX Server & Terminologies

• Virtual Infrastructure – simulation of hardware or a total computer environment other than the one in which the software is actually running

• VMware ESX Server - runs directly on the hardware
VMware ESX Server
Citrix using ESX Server Features

• Virtual machines may be administered centrally.
• Virtual machines are isolated.
• Virtual machines can be configured to use specific hardware resources.
• Virtual machines are easily copied and deployed.
• Virtual machines can be moved between physical machines.
• Machines can be consolidated.
VMware Assured Computing Environment (ACE) 
Differences with Citrix

• VMware ACE - an enterprise solution for IT desktop managers who want to provision secure, standardized environments throughout the extended enterprise.

• VMware ACE and Citrix Metaframe server are complementary

<table>
<thead>
<tr>
<th>Task</th>
<th>ACE</th>
<th>Citrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Distributed</td>
<td>Centralized</td>
</tr>
<tr>
<td>Data</td>
<td>Runs as a virtual machine on user desktop</td>
<td>Pulled from server typically in a data center</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Online or offline</td>
<td>Online only</td>
</tr>
<tr>
<td>Shared Instance</td>
<td>No, dedicated to user</td>
<td>Yes, shared by number of connected users</td>
</tr>
<tr>
<td>Administration Policies</td>
<td>Virtual machine controls</td>
<td>Server controls</td>
</tr>
<tr>
<td>Security</td>
<td>Virtual machine security</td>
<td>Server connectivity security</td>
</tr>
</tbody>
</table>
Benefits to Virtual Infrastructure
Citrix MetaFrame Suite with ESX Server

• Scalable
  • Avoid some operating system limitations
  • Efficient use of multiprocessor systems

• Isolation
  • Operates independently in virtual machine
  • Protects users from monopolization of resources

• Convenience
  • Growth easier to manage and afford
  • Runs on the heterogeneous hardware
Implementation Guidelines
Planning

- Selecting the Correct Hardware
  - Disk and Memory Requirements
  - Processor, Bus and Memory
  - Hard Disks, SAN
  - Network Interfaces
- Understanding Storage in Virtual Machine with Citrix
- ESX Server Guidelines
  - Networking Requirements in Virtual Machines with Citrix
  - Efficient Resource Use
- Virtual Machines, Guest Operating Systems and Applications
  - Guest Operating Systems Resource Requirements
Implementation Guidelines

Sizing

• Citrix MetaFrame Sizing in a Virtual Machine
  • increased flexibility with single-CPU virtual machines using ESX Server
  • Redundancy improvements with VMware ESX Server implementations
  • Ability to segment high load processes

• Sizing based on the applications and the number of users to be supported

• Understand the user loads, types of applications for deployment
Implementation Guidelines
Performance

• Properly Configure Guest Operating System
  • Install Vmtools
  • Disable CD-ROM
  • Disable Visual Effects

• Performance Monitoring
  • Citrix performance varies, depending on what is run on the Citrix client
  • Test applications prior to deploying in production

• VMware Testing Methodology
  • Using Citrix Server Test Kit (http://www.citrix.com/cdn)
  • Results vary based on specific environmental characteristics
Implementation Guidelines
Manageability

• Management Tools
  • VMware VirtualCenter and the Virtual Infrastructure Node (VIN)
  • Microsoft Operations Manager (MOM)

• Data Management
  • Backup and Recovery - ESX Server, Virtual Machines
• Setting Expectations: What availability: Single point of failure, Quality of Service, etc.

• Increasing Virtual Machine Availability Using a SAN
  • Multiple path for redundancy
  • Automatic Path Failover
  • High-Availability Cluster Support

• High Availability in Citrix Secure Gateway Services
  • Understanding product changes in Citrix and what that means to the deployment
Summary

- Virtualization offers Benefits over Physical Deployments
- Know The Deployment Environment for Success
- Mileage May Vary. Test Virtualization with Citrix Prior to implementing in a Production Environment
- Additional Information: http://www.vmware.com/pdf/esx21_Citrix.pdf - Note: New ESX Server 2.5 version soon to be published replacing this link.