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6.5 UPGRADE GUIDE

HOW TO HANDLE THE TRANSITION AND TO ENSURE YOUR CITRIX INSTALL RUNS SMOOTHLY.

whitehat
VIRTUAL TECHNOLOGIES

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Val has been a part of the "virtualization" community for over a decade, seeing first hand where virtualization technology has met with success or failure for customers. As a result, he has become an unofficial specialist in helping organizations turn failing virtualization implementations into successful ones. It was this insight that led to the founding of Whitehat Virtual Technologies.

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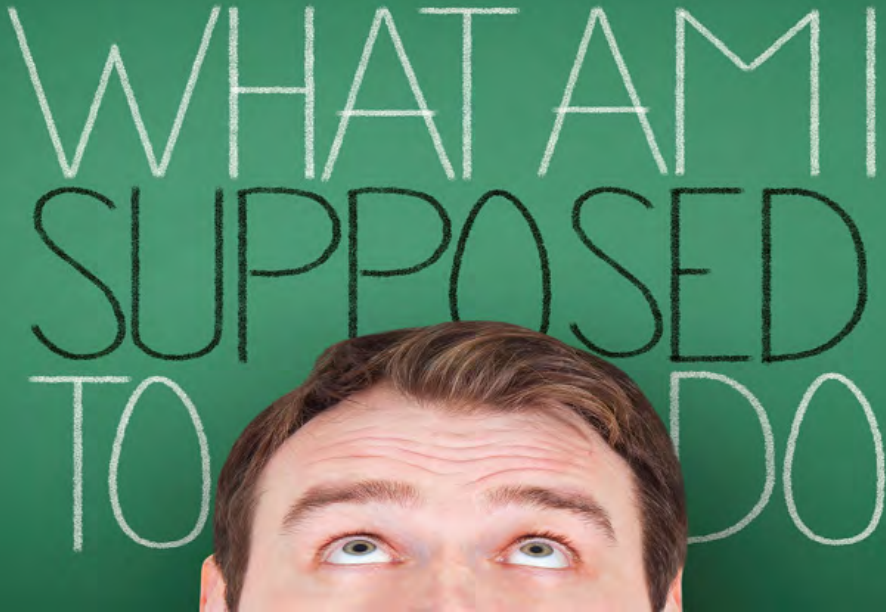
Citrix 4.5's end of life is March 31, 2013. What does this mean to your business? A good number of our customers have already made the move, but if you find yourself still standing firmly in the Presentation 4.5 camp trying to determine the best upgrade path for your company, this guide is for you.

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"
"The first and most important thing to remember is that there is no real recommended in-place upgrade from Presentation Server 4.5 to XenApp 6.5 or XenDesktop 5.6.
Plan on a parallel build (Migration) to a new farm."
"

10 Key Areas of Consideration

At a high level there are 10 key areas that you need to consider when evaluating a move from Presentation Server 4.5 to XenApp 6.5 or XenDesktop 6.5.

There are several components that can impact a Citrix Presentation Server 4.5 to XenApp 6.5 or XenDesktop 5.6 project (including the network, Active Directory, SQL, hypervisor, etc.).

Begin by completing an inventory of your applications, operating systems, and applications. If you are looking at VDI, or virtual desktops, as a possibility, you will want to complete a VDI Readiness Assessment to determine what changes will be required to support a VDI environment.

Step 1. Moving from Physical Servers to Virtual Servers

Selecting a virtualization platform (Citrix XenServer, VMware vSphere, or Microsoft Hyper-V, etc.) for your organization has likely already been decided.

a. Virtualizing your physical servers will help you consolidate space in your data center, lower utility costs, speed up installation/ implementation and add a whole new array of options for your DR/Business Continuity strategy.
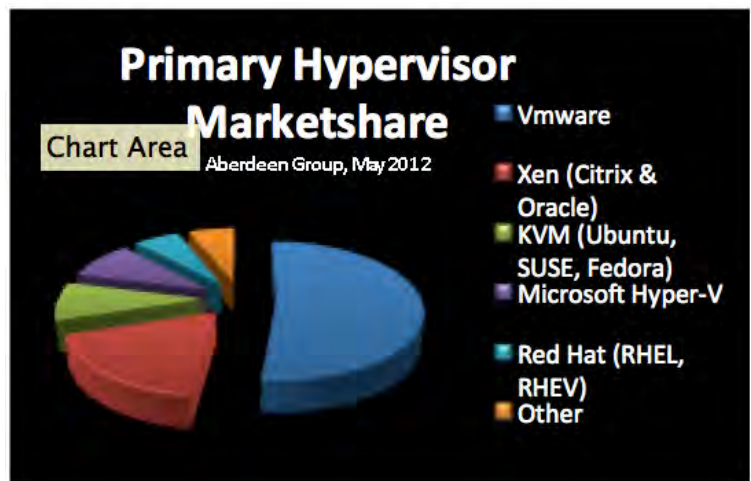
b. The flexibility and benefit a hypervisor layer brings your deployment is almost beyond discussion, however, the hypervisor also adds another layer of complexity that will cloud your ability to see what is happening inside your Citrix Presentation Server or XenApp farm and determine the inter dependencies between the virtualized servers (VMs) and Citrix and the applications running inside of Citrix.

c. In a physical environment, a problem with one server does not impact other servers necessarily. However, in a virtualized infrastructure this is not the case. A single malfunctioning virtual machine (VM) can impact the performance seen by other virtual machines on the same physical host server.

Step 2. Moving from a 32 bit Platform to a 64 bit Server Platform

Citrix XenApp 6.5 and XenDesktop 6.5 both require a 64 bit server platform. Moving from Windows Server 2000* & Windows Server 2003 to 64 bit Windows Server 2008R2 will need to be included in the planning process.

a. *If you are running Citrix on a Windows 2000 server, you are running Presentation Server 4.0 or an earlier edition. There is no direct upgrade path for Windows server 2008 from Windows 2000. You must first upgrade to Windows Server 2003 and then take the additional step of moving to Windows Server 2008R2.

b. If you are making the move from Windows Server 2003 you should be patched to at least SP2. Small Business Server 2003/2003R2 upgrades are not supported by Microsoft.

c. If your existing hardware will remain in place, confirm that your hardware is also capable of supporting 64 bit. Note that VMWare 32 bit version would work on 32 bit host but Xenserver must be 64 bit.

Step 3. Application Compatibility with Windows 2008R2

a. Check with each of your vendors and confirm that they support your application on Windows Server 2008R2 and that they support their application running on your choice of hypervisor.

b. If you have applications that are not supported or will not run in a Windows Server 2008R2 environment, you will have to maintain both a Presentation Server 5.0 32 bit farm and a XenApp 6.5/XenDesktop 5.6 farm. This is a common scenario for old legacy/homegrown applications that will increase design and management complexity but should not impact the end user experience if architected correctly.

c. Determine Application Usage Before Migration. Are your end users actually using all of the applications you have published in your existing Citrix farm? This can be done manually or you can use one of several software tools available today like AppDNA for example.

Step 4. SQL/Oracle upgrades to Your Data Store Database

With the move to Windows Server 2008, your Data Store database will likely need an upgrade as well. The following databases are supported for the XenApp data store:

- Microsoft SQL Server 2008 Express R2
- Microsoft SQL Server 2008 Express SP3
- Microsoft SQL Server 2008 R2
- Microsoft SQL Server 2008 SP2
- Microsoft SQL Server 2005 SP4
- Oracle 11g R2 32-bit Enterprise Edition

Step 5. Application Delivery Method Determination

It is a "best practice" to complete a review of your end users and how they work to determine the optimal way to deliver their applications to them. Here are the delivery methods available via Citrix FlexCast for XenApp 6.5, including XenDesktop 5.6.

[For additional details and videos on Citrix FlexCast and more detail on each delivery model, click here.](#)

Local VM - Local VM desktops extend the benefits of centralized, single-instance management to mobile workers that need to use their laptops offline. When they are able to connect to a suitable network, changes to the OS, apps and user data are automatically synchronized with the datacenter.

Streamed VHD (Virtual Hosted Desktops) - Streamed VHDs leverage the local processing power of rich clients, while providing centralized single-image management of the desktop.

Step 5. Continued

Hosted VDI - Hosted VDI desktops offer a personalized Windows® desktop experience, typically needed by office workers, which can be securely delivered over any network to any device. This option combines the benefits of central management with full user personalization.

Hosted Shared - Hosted Shared desktops provide a locked down, streamlined and standardized environment with a core set of applications, ideally suited for task workers where personalization is not needed — or allowed. Supporting up to 500 users on a single server, this model offers a significant cost savings over any other virtual desktop technology.

On-Demand Applications - Allows any Windows® application to be centralized and managed in the datacenter, hosted either on multi-user terminal servers or virtual machines, and instantly delivered as a service to physical and virtual desktops, optimized for each user device, network and location.

Thinking about deploying Virtual Desktops (VDI)? Discover the challenges you will face in your environment with a VDI Readiness Asessment
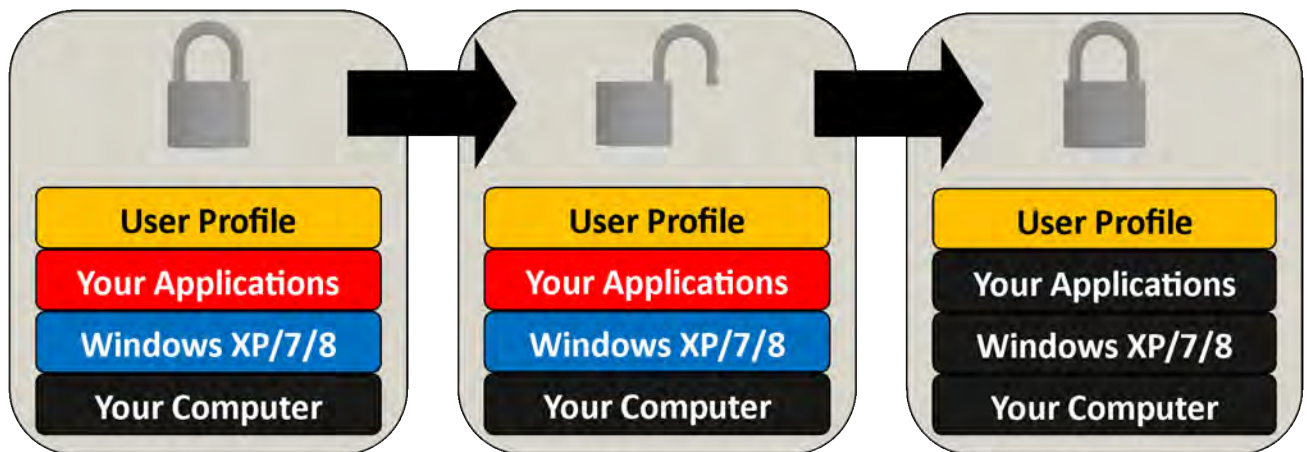
[Read More Here](#)

Step 6. Managing User Profiles

Your users have likely spent weeks, months or possibly even years building their profiles in Citrix. Their profile stores everything that is unique to the individual from settings in Microsoft Word, desktop pictures, icons, wallpaper, etc. When you move to Windows Server 2008R2 and XenApp/ XenDesktop you could erase all of your users' profile data and hack off a company full of people or you could plan to do a migration of that data.

Citrix Profile Management is a Citrix tool designed to help in this area and there are more all-encompassing tools by third party vendors like AppSense.

Profile Management allows you to separate what is unique about you from the other layers of your computer

User Profile			User Profile			User Profile
Your Applications			Your Applications			Your Applications
Windows XP/7/8			Windows XP/7/8			Windows XP/7/8
Your Computer			Your Computer			Your Computer

Hardware, operating systems and applications can change without impacting any end user personalization.

Step 7. Environmental Sizing & Capacity Planning

How many servers are you going to need? How many users will you get per VM? How many VM's will you get per host server? The answer is it depends, but there are tools from Citrix (Citrix EdgeSight for Load Testing) and other companies like our partner eG Innovations. You could also use platspin and veeam, they offer good utilities for sizing and capacity planning. Citrix Project Accelerator is also a good candidate for Sizing and Capacity Planning.

Step 8. Citrix Access Gateway Goes NetScaler

1.   Citrix Web Interface server is being retired and "best practice" today is to deploy Web Interface Server and Citrix StoreFront together in the near term until all of the functionality of StoreFront is in place from the development team.

If you are a legacy Citrix Secure Gateway customer, plan on moving to the upgraded Citrix Access Gateway. If you are being forced to manage iPads and other devices wanting to connect to your environment remotely the Universal license will let your Citrix Access Gateway (CAG) interrogate those devices before permitting entry.

Step 9. Plan for & Utilize Provisioning Server

For medium to larger environments, Citrix has completely changed how the server images get created, patched and delivered to the XenApp servers (and potentially your edge devices). Managing individual server images is so 4.5. Presentation Server helps us solve the problem of keeping XenApp servers consistent but introduce new variables when designing your new farm.

Step 10. Build a Testing Environment

A standalone test environment, or sandbox, to test your 6.5 environment in parallel to your 4.5 environment is highly recommended. Test your images, test your applications, test your documentation, and test the user experience. No matter how perfect the deployment there will almost always be minor tweaking to optimize the user experience and resolve identified issues.

CHAPTER 2:
Preparing For the Upgrade

Before you begin the upgrade, there are several prerequisites for migrating to a XenApp 6.5 environment.

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1. SQL/Oracle upgrades to your Data Store Database.

With the move to Windows Server 2008 or R2, your Data Store database will likely need an upgrade as well. The following databases are supported for the XenApp data store:

- Microsoft SQL Server 2008 Express R2
- Microsoft SQL Server 2008 Express SP3
- Microsoft SQL Server 2008 R2
- Microsoft SQL Server 2008 SP2
- Microsoft SQL Server 2005 SP4
- Oracle 11g R2 32-bit Enterprise Edition

2. Install or upgrade Citrix Licensing 11.9

Add licenses and/or verify that Subscription Advantage date is July 27, 2011, or later.

3. Install XenApp 6.5 on the first server in the farm and perform the initial configuration.

If applicable, import settings from the legacy farm using the XenApp Migration Center with settings transferred or not transferred as shown below:

Settings Transferred	Settings Not Transferred
Applications	Zones
Application and server folders	Printer management, such as driver mappings and auto-replication
Load evaluators	Configuration Logging settings
Policies	Health Monitoring and Recovery executables
Server configuration	Server registry settings
Farm configuration	Deprecated settings, such as Application Isolation Environments
Administrator accounts	
Health Monitoring and Recovery Tests	
Worker Groups (XenApp 6.x only)	
Load Balancing Policies (XenApp 6.x only)	
Pre-launched applications (XenApp 6.5 only)	

CHAPTER 3:
Upgrade Options

Now that we have shared the 10 steps let's explore your upgrades options.

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Option 1:
Extended Warranty

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Solutions   Products   Downloads   Buy   Support

Search

Global Sites   My Account (Log In)

Support

Customer Service   +

Support & Maintenance Programs   −

Software Support   −

Premier Support

Software Maintenance

Preferred Support

Extended Support

Extended Support

The Extended Support program puts customers in control of their upgrade strategy by offering technical support and maintenance beyond the Mainstream Maintenance Phase and the Extended Maintenance Phase at an additional fee.

Supported Products
- XenApp 4.5/5.0 for Windows Server 2003
- XenApp 5.0 for Windows Server 2008
- XenApp 6.0 and 6.5 for Windows Server 2008 R2

An Extended Support program for XenDesktop is under development and will be announced in a later communication. Customers should contact their Citrix representative for more information about the XenApp Extended Support program.

Purchasing an extended warranty is investing in a short term solution and is not recommended. In most situations, businesses are better served by choosing a 6.5 migration path that fits their needs and budget. Plus it is VERY expensive.

Citrix has announced pricing for Extended Support on Presentation Server 4.5:

$100,000 flat fee for a 6-month support extension....

Plus no new patches will be developed for this environment. Sounds like Citrix wants Presentation 4.5 (and XenApp 5.0 users on Windows 2003) to upgrade!

Option 2:
Upgrade to XenApp 6.5
- On Your Own Servers

This is what you have always done. In this option, you are responsible for purchasing and maintaining all the hardware and software, and staffing it to whatever level you choose with employees from your company. The hardware can be installed on your premise or in a CO-LO data center.

There may be good reasons for you to continue this, but there are capital costs for all the products, and personnel costs for the staff. This is a difficult and expensive choice for most small businesses and they only did things this way in the past since there was no other choice.

Pros:
- Manage on your own servers
- Can take depreciation on the products

Cons:
- Major capital investment
- Personnel costs and management issues
- No redundancy or DR capabilities

Option 3:
Managed Services

In this case, you would still own all the hardware and software products, but they would be managed by a professional IT management partner through an internet connection to your system.

Again, the hardware can be installed on your premise or in a CO-LO data center. This is a very good choice for a company that still has fairly new hardware and software that still has significant depreciation to be taken.

Pros:

- Solves the IT staffing issues
- Also provides Staff redundancy
- Provides a better end-user experience due to access to better tools
- Citrix expertise - professional team focused on Citrix
- Capped expenses - set an annual IT budget
- Allows you to focus on your core business
- Provides CIO quality guidance

Cons:

- Still requires capital investment for hardware /software
- Still does not include server redundancy or DR capabilities unless servers are virtualized and housed in a data center

Option 4:
Hosted Services

For a fixed monthly fee over several years, the IT partner would provide the servers, software and management of the system. You and your employees would access your system in their data center over the internet, but since Citrix products make this virtually transparent to your users, the performance will be excellent.

This is a great choice if your system is old and you need to pretty much start from scratch.

UPGRADE GUIDE CITRIX 4.5 - 6.5

Pros:
- No capital investment in hardware or software
- Hosted solutions utilize server virtualization, and will include redundancy and DR capabilities
- Solves the IT staffing issues
- Also provides Staff redundancy
- Provides a better end-user experience due to access to better tools
- Citrix expertise - professional team focused on Citrix
- Capped expenses - set an annual IT budget
- Allows you to focus on your core business
- Provides CIO quality guidance

Cons:
- None, other than completing the upgrade

Server Virtualization

Most organizations are taking this upgrade as an opportunity to move from physical servers to a virtualized Citrix environment, and regardless of which option you choose to do your upgrade , we strongly recommend that it include server virtualization. The benefits of this approach are overwhelming.

- **Hardware cost reduction.** One of our clients moved from 40 physical servers to six VMware hosts will full redundancy.

- **Savings from the electricity and hardware maintenance costs** due to a reduced number of hosts makes this a significant win.

- **Redundancy and DR** due to virtual servers being portable from one host to another instantly with no service interruption.

- **Instant capacity on demand** since additional virtual servers can be added on the fly in just minutes

What's the difference between Virtualization and "Virtualization People Love to Use?" – The End User Experience

Proactive System Management

A focus on proactive, preventative support, means healthier systems, greater IT efficiency and increased productivity across your organization, and filling the gaps in your IT resource means you're 100% covered at all times.

Monitoring and management tools are entering a new generation where **everything** (applications and Citrix sessions, host servers, hypervisors and server OSes, disk storage, internal and external network connections) can be monitored with one system and correlation can be used to automatically identify, and many times rectify, problems automatically. A tool of this kind should be a part of your upgrade regardless of the option chosen.

Want more information? Watch our on-demand webinar - **"How to ensure a great end user experience before, during and after your XenApp 6.5 upgrade"**

[View Our Webinar](#)
on XenApp 6.5

Final Note From The Author

This is a very high level guide designed to help you uncover the basic issues and constraints you are going to face as you begin to make the move from Presentation Server 4.5 to XenApp 6.5 or XenDesktop 5.6

Other Citrix technologies that did not exist when 4.5 was deployed like NetScaler, XenClient, CloudGateway, Sharefile and AppDNA may well be technologies that could have a positive impact on the design, functionality and quality of the end user experience.

In the simplest terms, you should:

Assess

Assess what you have in terms of hardware, apps and users today. There will likely be a significant requirement for new server hardware and possibly shared storage depending upon your deployment model.

Keep in mind, as part of your Assessment, that to get the benefits of Citrix you do not necessarily have to have on staff of Citrix expertise or even new hardware. Citrix Onsite Managed Services or Citrix Hosting are options that were not available a few years ago.

Plan

Determine how compatible with 64 bit and Windows 2008R2 your existing environment is and make adjustments accordingly. Money and resources spent planning properly will almost always be less expensive than money and resources spent correcting issues that could have been caught in the planning phase.

Pilot/Test

With all of the variables in making this particular move and the likely introduction of the hypervisor or virtualization layer, dedicate some hardware and time to doing adequate testing before moving to production.

Now that you have the upgrade facts, what are your next steps?

Get a Free Citrix QuickAssess Report.

Sign Up Here

If you're interested in how Whitehat can help you choose the migration path that is right for business, give us a call.

1-888-406-8719

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**Whitehat Virtual Technologies is more than IT solutions.
We are the driving force behind IT transformations that provide long-term business growth.**