



Rapidly Deliver
Microsoft Office 2007
with Citrix XenApp

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Introduction

Microsoft® Office is the application most frequently delivered with Citrix XenApp™. In fact, in 2006, Microsoft named Citrix its “Office System Deployment Partner of the Year” for its ability to rapidly deploy Microsoft Office. There are many reasons why XenApp is so frequently used to deliver Office, including the popularity of the Office suite, the challenges companies face installing the Office suite on user’s workstations and the benefits received when delivering the Office suite through XenApp. This paper will examine those migration challenges and explain how XenApp can reduce, or even eliminate those challenges and enable you to deliver the new Office suite immediately and at a fraction of the cost of a traditional deployment.

Challenges of Installing Microsoft Office

Many organizations delay deploying the latest Microsoft Office suite to their users for many reasons. Often there is the desire to wait until the product has been out for a period of time to ensure that all major issues have been resolved before introducing the application to users. Now that the 2007 Microsoft Office system has been available for over a year and the major issues have been addressed, companies are beginning to plan their migration strategy. Many factors are driving the move to Office 2007:

- Compatibility with third-party applications that may require Office 2007 for interactivity.
- Mitigation of risk factors of running older, non-supported or versions of Office with limited support.
- The new features of the 2007 Microsoft Office system such as additional cells available within Microsoft Office Excel® 2007 and integration with Microsoft Office SharePoint® Server 2007.
- File sharing, internally and externally, with users who have standardized on the new Office 2007 Open XML file formats.
- Take advantage of Microsoft Software Assurance.

While companies would ideally like to roll out the new Office suite immediately, they are faced with many deployment challenges including:

- Meeting minimum system requirements
- Regression testing
- File compatibility
- Software distribution
- User training
- Deployment timeframe

These are just a few of the many challenges that arise when planning a Microsoft Office upgrade onto workstations and laptops in an organization. The remainder of the paper will examine the methods and benefits XenApp offers to deliver Microsoft Office. It will also examine how Citrix XenApp can help reduce, if not eliminate the challenges of installing Office onto workstations, enabling users to begin using the new 2007 Microsoft Office system as quickly as possible.

Delivering 2007 Microsoft Office System with Citrix XenApp

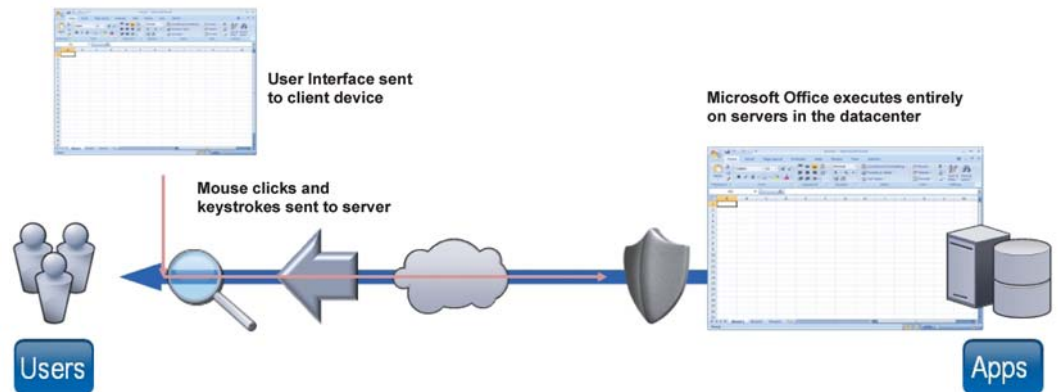
Citrix XenApp is the only solution that provides an end-to-end application delivery system that enables the best access experience for any user, with any device, working over any network. With the Citrix XenApp architecture, organizations can centralize applications and data in secure datacenters, reducing costs of management and support, increasing data security, and ensuring fast, reliable performance.

XenApp offers two methods of delivering applications, server-side application virtualization and client-side application virtualization, as illustrated below.



Server-side Application Virtualization

Server-side application virtualization is the application delivery method Citrix XenApp is known for. With server-side application virtualization, Microsoft Office runs on a server in the datacenter and the user interface is virtually delivered to the end user device by passing only screen pixels, keystrokes and mouse actions between the client and server over the network.



Citrix's server-side application virtualization technology, combined with both client and server components running together in the datacenter, results in lower bandwidth use and faster application performance. Since Office is not installed or executed on the end-point device, you gain broad compatibility with client devices, networks, and operating systems, as well as eliminating the headaches of application compatibility and lockdown on the end point.

Benefits

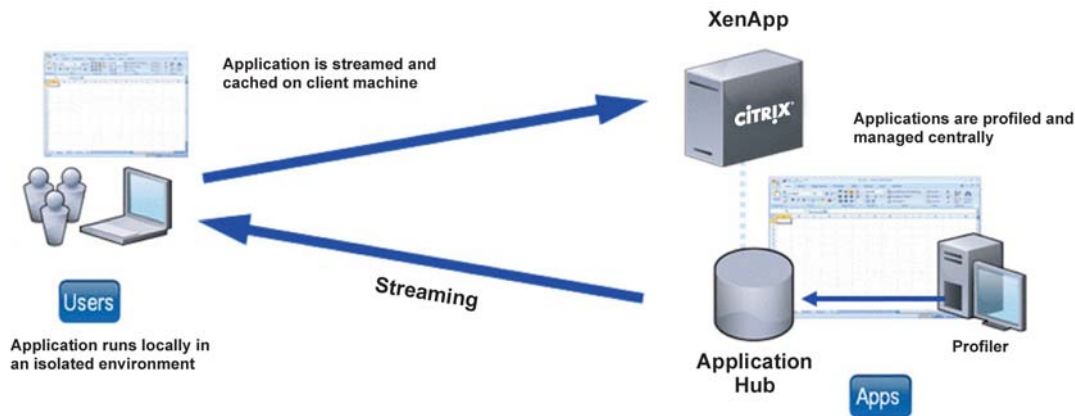
There are many benefits of deploying Microsoft Office with server-side application virtualization, including:

- Ability to rapidly deliver the new 2007 Microsoft Office suite to users.
- Increased performance when running over slow network connections.
- Ability to run multiple versions of Office at the same time, without conflict. This can ensure that users are able to move at their own pace while they learn the new user interface of Office 2007.
- Look and feel as if Microsoft Office is running locally on the workstation. User is able to interact with applications as if they were installed locally including the ability to alt-tab between applications, copy and paste within and between applications, print to local printers, and access local hard drives.

Client-side Application Virtualization

Citrix recognizes there are times when a user requires Microsoft Office to execute locally on the workstation, such as when they are disconnected from the network. Client-side application virtualization extends the value of XenApp to applications running on desktops and laptops.

Applications are streamed to the client and cached locally on the workstation in an isolated environment, rather than installed on the device. This eliminates application conflicts and the need for extensive regression testing. Users get the flexibility of working offline, and IT administrators get the benefits of centralized application management.



Benefits

Benefits of delivering Microsoft Office with client-side application virtualization include:

- Ability to run Microsoft Office either online or when disconnected from the network.
- Elimination of application conflicts and operating system instability resulting from installing applications on the desktop.
- Reduced costs associated with regression testing, deployment, maintenance, updates and de-provisioning of applications running locally on users' machines.
- Availability of Microsoft Office applications as an on-demand service.
- Lowered application support costs from automatically updating and repairing applications every time they are used.
- Ability to begin to work with applications quickly while the application streams down to the workstation in the background.

Dual-mode Virtualization

Citrix XenApp combines server-side application virtualization and client-side application virtualization, giving IT the flexibility to dynamically define how to deliver Microsoft Office under various scenarios. Because user needs change depending on the application, the device or the network, XenApp offers a policy-based virtual fallback for streamed applications. This feature enables Microsoft Office to be run from a virtual environment on the client device by default or on the server-side when certain conditions exist. For instance, if the Streaming Client is unavailable, the client IP address is not within a certain range or the client operating system is not supported by the application, the application will automatically be launched and run on the server instead of the client. With dual-mode virtualization, users enjoy the best application experience, no matter the circumstances.

XenApp Eliminates Installation Challenges

Now that you have an understanding of application delivery with Citrix XenApp, let's examine how delivering the 2007 Microsoft Office system with XenApp can reduce or even eliminate the major challenges of installing Microsoft Office onto workstations, including:

- Meeting minimum system requirements
- Regression testing
- File compatibility
- Software distribution
- User Training
- Deployment timeframe

Challenge: Meeting Minimum Requirements

One of the first things that has to be done in migrating to Office 2007 is determining if currently deployed workstations have the hardware and software requirements needed to support the 2007 Microsoft Office system. While there are many tools available, such as Citrix EdgeSight™ (<http://www.citrix.com/edgesight>), which can help collect and analyze workstation hardware and software status, the bigger challenge comes when deciding how to handle those workstations that do not meet the minimum requirements. According to Microsoft, the 2007 Microsoft Office system requires the following minimum system components:

The two major requirements which will be the biggest challenge to remediate are operating system and hard disk space.

Computer and Processor	500 Megahertz (MHz) Processor or Higher
Memory	256 megabyte (MB) RAM or higher ¹
Hard Disk	From 1.5 gigabyte (GB) to 3 gigabyte (GB), depending on edition
Drive	CD-ROM or DVD drive
Display	1024x768 or higher resolution monitor
Operating System	Microsoft Windows XP with Service Pack (SP) 2, Windows Server 2003 with SP1, or later operating system
Internet Explorer	Internet Explorer 6.0 or later, 32-bit browser only

Operating System Requirement

By requiring a minimum of Windows® XP SP2, you may be faced with having to not only install Microsoft Office, but also a service pack or even an upgrade to the workstation's operating system. This would lead to additional regression testing with all the applications on a user's workstation. This challenge is eliminated when delivering Microsoft Office with Citrix XenApp's server-side application virtualization. Microsoft Office is installed on the Windows Server 2003 server in the datacenter so the only change to the client environment is the XenApp client required.

Citrix offers the XenApp client on any operating system including all 32-bit or 64-bit Windows operating systems, Macintosh, Linux, mobile operating systems and others. A complete list of available clients can be found at <http://www.citrix.com/clients>.

Hardware Requirement

Once you determine the current status of the hardware, you will be faced with upgrading any hardware that does not currently meet the minimum requirements of Office. With a minimum disk space requirement between 1.5 gigabytes to 3 gigabytes, depending on the edition you deploy, there will most likely be many workstations without enough disk space available to run Office 2007.

With Citrix XenApp server-side application virtualization, Office can be delivered to all users, even those who do not meet the minimum requirements to run Office. As Office is executed on the server in the datacenter, the workstation will only need to run a lightweight client with minimal hard disk requirements, in order to run Office 2007 applications. For workstations that meet the minimum requirements with the exception of hard disk space, client-side application virtualization could also be an option. As files are streamed to the client as-needed, users can have all the Office 2007 applications available to them on-demand and only use the disk space for the parts of the applications they run.

Challenge: Regression Testing

One of the most difficult and lengthy phases of migrating to a newer version of Microsoft Office is regression testing the Office system with the other applications running on user workstations. As many applications integrate with Office, all applications will need to be tested to ensure compatibility. During regression testing, you may find that you are required to upgrade additional applications due to application incompatibilities, which can lead to additional licensing costs.

Citrix XenApp eliminates the need to perform extensive regression testing. When delivering Microsoft Office through server-side application virtualization, applications execute on the server in the datacenter and interact with the other applications installed on the server. The only item required on the client is the lightweight Citrix XenApp client, which can be deployed with little to no regression testing. If you currently have Citrix XenApp within your organization, there is a good chance that the Citrix client is already installed on workstations.

If you desire to run Office locally on the workstation, XenApp's application streaming feature can be used to stream Office into an isolation environment on the client. By isolating the streamed application on the workstation, client-side virtualization enables Office applications to run in their own sandbox, without interfering with other applications running on the workstation. The Office applications will have visibility to other applications installed on the workstation, but the other applications will not have visibility to Office. This ensures that applications such as Microsoft Outlook® will be able to launch attachments with applications currently installed on the workstation. By utilizing the File Type association feature of XenApp, Office file extensions can be automatically associated with the streamed version of Office, ensuring that users will continue to be able to work with their Office files as they do today.

As both XenApp application virtualization technologies enable Office to be run without affecting other applications installed locally, you can be confident in rolling out Office to all your users without the regression testing needed when installing Office locally on the workstation.

Challenge: File Compatibility

Unlike the last few releases of Microsoft Office which maintained a standard file format, the 2007 Microsoft Office system has changed the default file format to an Open XML format for Office Word 2007, Office Excel 2007, Office PowerPoint 2007 and Office Access 2007. According to Microsoft's TechNet Web site, the new XML format provides the following benefits:

- Enables more rapid document creation from different data sources
- Enables easier data mining and content reuse
- Reduces the size of Word, Excel, and PowerPoint files
- Improves data recovery in corrupted files

While Microsoft has taken steps to enable users to continue to exchange files between old and new versions of Office, many of those steps require additional user training. They can also result in the loss of much of the new functionality of Office 2007 when saving down to previous file formats, or even require the deployment of Office 2007 converters to workstations running older versions of Office. In their article "How to Deal With Microsoft Office 2007 Compatibility", Gartner states:

“Office compatibility has been relatively good with Office 2000, XP and 2003. Gartner believes Office 2007 will be more problematic, and many organizations will be better off moving everyone at once, rather than supporting a mix of Office versions, which is currently the norm. This is partly because of the very different user interface that will make supporting a diverse mix more difficult, but also because some of the new Office 2007 capabilities could be lost as documents are exchanged between versions.”

While the idea that Gartner suggests moving all users to Office 2007 at once sounds ideal, in reality, this may be challenging for many organizations. Citrix XenApp makes it much easier.

With Citrix XenApp's server-side application virtualization, Office 2007 can be installed onto XenApps in the datacenter. When you are ready to give users access, you simply publish the application to the users and they are immediately able to access the new Office 2007 applications. If the users are running the Program Neighborhood Agent client, they will immediately see the icons for the Office applications appear in their Start Menu. You can even configure application icons, such as Outlook, to appear on the Desktop. When a user launches the application, a connection is made to the XenApp and the application is launched, acting and feeling as if it is running locally on the workstation. If the user is not currently running the XenApp client, Citrix Web Interface, a component of XenApp, can be used to provide access to the Office applications. A user would simply logon to the Web Interface site and the required client can be automatically installed for the user.

With client-side application virtualization, Office 2007 is profiled and stored on the Application Hub, or file share. The Office applications are then published to users, who will immediately have access to launch the new Office applications locally on their workstation without having to worry about the new applications breaking currently installed applications. If the applications are set for offline use, all files for the applications will be downloaded and cached locally on the workstation upon launch. This will enable the applications to be centrally managed while being available offline. Each time a user launches an Office application while connected to the network, the client will check to ensure that the user is

running the latest version of the application and will pull down any updated files and registry keys. This enables administrators to simply update the application profile centrally, ensuring that users are always running the latest version of the software.

With all users running the 2007 Microsoft Office system, an organization can immediately set the standard of saving all files in the new format, ensuring users are able to utilize all new functionality of the new Office suite.

Challenge: Software Distribution

Another major challenge of installing Office 2007 locally onto workstations is the method of deployment. Microsoft Office applications may conflict with other locally installed applications and the failure rate for installing Microsoft Office through electronic software distribution (ESD) infrastructure can be higher than expected as a result. This can require additional time and resources to troubleshoot the installation issues. With the increasing number of users working remotely or from branch offices, the challenge to deploy software will only continue to increase.

With Citrix XenApp, these issues are reduced significantly because only the small Citrix client(s) need to be deployed to workstations. For server-side application virtualization, the only client required is the XenApp client. This client can be deployed in many ways, including electronic software distribution or by simply having users logon to the Citrix Web Interface and enabling the auto client deployment mechanism. Once the client is installed on workstations, and Microsoft Office has been installed and published on XenApps in the datacenter, users are able to access Microsoft Office on-demand, without any additional changes to the workstation.

For client-side application virtualization, the XenApp client and the Citrix Streaming client are required. Both clients can be deployed in the same way as The XenApp client. Citrix also offers the Citrix streaming clients package, which will install both clients from one package. Once workstations have the proper clients installed, and the Office suite has been profiled and published from XenApp, users are able to begin to stream the Microsoft Office from the Application Hub.

For applications which are set for offline use, Citrix provides tools, such as RADEDEPLOY, to enable companies to download the application files from the Application Hub at off-peak times. For workstations located at branch offices, the Alternate Package Locations can be defined to enable the streaming clients to pull the files from an Application Hub on a local LAN.

Office compatibility has been relatively good with Office 2000, XP and 2003. Gartner believes Office 2007 will be more problematic, and many organizations will be better off moving everyone at once, rather than supporting a mix of Office versions, which is currently the norm. This is partly because of the very different user interface that will make supporting a diverse mix more difficult, but also because some of the new Office 2007 capabilities could be lost as documents are exchanged between versions.

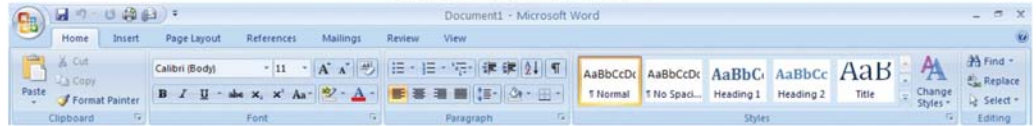
Challenge: User Training

Unlike past versions of Microsoft Office, which include Microsoft's traditional menu and toolbars, the new 2007 Microsoft Office system introduces a new ribbon interface. The ribbon is an area across the top of the screen that is divided into tabs, with commands organized within each tab. While Microsoft expects that this change will greatly improve the ability to find and use features in the 2007 Office release, user education is required to ensure a smooth transition between versions.

Microsoft Office 2003 Menu and Toolbars

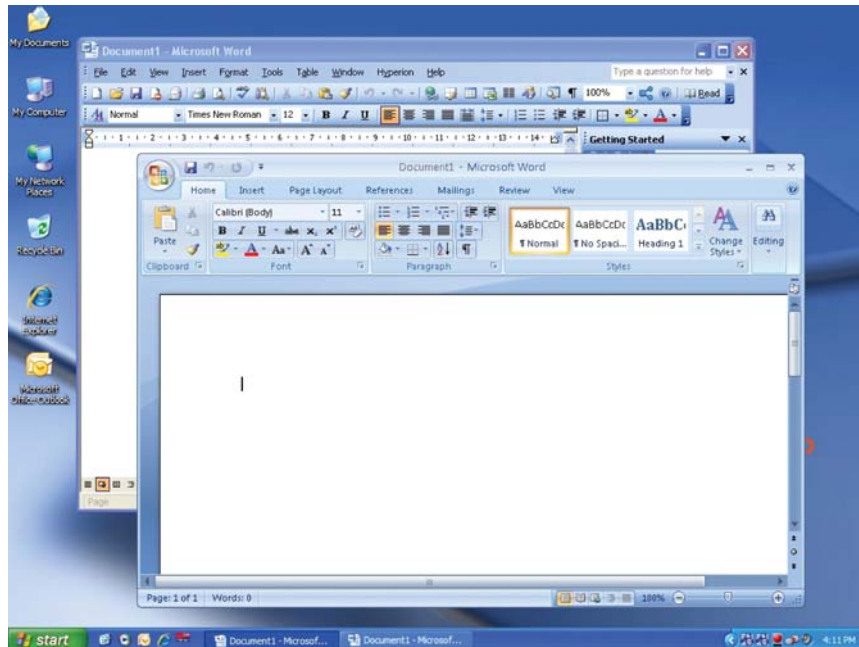


Microsoft Office 2007 Ribbon



With traditional installation of Microsoft Office, the timing of training is key. If training occurs prior to upgrading users to the new Office system, users may not retain all the information as they will not be able to immediately use what they learned. If users are trained after being upgraded, they may get frustrated by the new ribbon interface.

When delivering the new Office system with XenApp, locally installed applications are not affected. Because of this, users' previous version of Microsoft Office remains available to them. This enables users to learn the new ribbon interface at their own pace, ensuring less frustration and greater satisfaction. The following figure illustrates how users can work with multiple versions of Microsoft Word on the same workstation, with the look and feel as if both applications are installed locally.



Challenge: Deployment Timeframe

Due to the challenges discussed above, including meeting minimum system requirements, regression testing, software deployment and user training, upgrading users to the new 2007 Microsoft Office system can be a lengthy process. While with previous versions of Microsoft Office, the timeline to deploy new versions of Microsoft Office could be spread out over time due to the common look and feel and file formats, the new Open XML file formats and interface of Office 2007 makes a quick transition important. In their article "How to Deal With Microsoft Office 2007 Compatibility", Gartner states: Additionally, a long migration plan can be costly as it will require IT resources, which could be utilized for other business critical projects. Users may also be affected while their system is upgraded.²

² Top migration issues in the 2007 Office system, <http://technet2.microsoft.com/Office/en-us/library/9a753419-726c-422b-9863-7dfaf2f522c21033.mspx?mfr=true>

By delivering the new Office system with XenApp, the deployment timeframe is greatly reduced. Once the XenApp is installed and Microsoft Office is either installed onto the XenApp or profiled and stored

“ Although, in the past, many organizations have moved to new versions of Office as they deployed new PCs or operating systems, the new user interface and document exchange problems mean that even organizations planning to migrate to Windows Vista through hardware attrition as they buy new PCs will need to consider a fast, forklift/mass migration to Office 2007 to minimize the issues.”

on the Application Hub (file share), Microsoft Office can be immediately published to all your users. Once published, users can immediately begin using the new Office applications, on-demand.

Conclusion

When planning your migration to the new 2007 Microsoft Office system, the challenge of a traditional deployment of Office needs to be considered. The issues of meeting system requirements, regression testing, software distribution, user training and a lengthy deployment timeframe can be greatly reduced, and often eliminated, by delivering Microsoft Office with Citrix XenApp. With server-side application virtualization, users can have on-demand access to their Office applications, from any workstation, even those which do not meet the minimum system requirements to run the new Office system. With the addition of client-side application virtualization in XenApp, users can now take their Office applications offline, while IT benefits from the ease deployment and central management XenApp provides. Organizations should consider XenApp as a key part of any Office 2007 migration strategy.³

Although, in the past, many organizations have moved to new versions of Office as they deployed new PCs or operating systems, the new user interface and document exchange problems mean that even organizations planning to migrate to Windows Vista through hardware attrition as they buy new PCs will need to consider a fast, forklift/mass migration to Office 2007 to minimize the issues.

³ Michael A Silver, *How to Deal With Microsoft Office 2007 Compatibility* (Gartner ID Number: G00145072, 2007)

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