



Technical Guide for Upgrading/Migrating to XenApp™ 6

Citrix released XenApp 6 for Windows Server 2008 R2, on March 24, 2010.

This document provides a brief technical overview of new XenApp 6 functionality to help you determine which features are applicable to your environment. It primarily focuses on easy-to-follow installation steps and will serve as a companion technical guide for Citrix administrators and partners.

Table of Contents

Introduction	3
Upgrade vs. Migration	3
XenApp Feature Set by Edition	4
Which Features Should Be Implemented?	4
What's Included with XenApp 6?	5
Upgrade/Migration Steps	7
Sequential Installation Order for Core XenApp 6	7
Documentation	7
Citrix License Server 11.6.1 Build 10007	8
XenApp 6 for Windows Server 2008 R2	9
Citrix Policy Administration	9
XenApp 6 Migration Tool	10
Web Interface 5.3	13
Secure Gateway 3.2	13
VM Hosted Apps	14
HDX WAN Optimization	17
Load Testing Services 3.6.1	18
Provisioning Services 5.1 SP2	19
Service Monitoring 5.3 (formerly EdgeSight)	20
EasyCall Voice Services 3.0	20
Single Sign-On 4.8 (formerly Password Manager)	21

Introduction

On March 24, 2010, Citrix released XenApp 6, which was purpose built expressly for the Windows Server 2008 R2 x64 platform. In addition to core XenApp, this release includes enhancements to numerous Platinum Edition component features. For the purposes of this document, XenApp Platinum Edition is assumed; however, the XenApp feature set is licensed based on specific editions, as well as the Enterprise and Platinum editions of XenDesktop.

XenApp 6 includes a streamlined installation process and centralized management. Migration to this new XenApp version is necessary because mixed farms and in-place upgrades from previous versions are not supported. However, Citrix provides the XenApp 6 Migration Tool to facilitate exporting Presentation Server 4.5/XenApp 5 farm settings and importing these settings into the new XenApp 6 farm. The XenApp 6 Migration Tool is explained later in this document.

Many of the XenApp Platinum features, such as Web Interface, Service Monitoring (EdgeSight), and Application Streaming, can be upgraded to their respective XenApp 6 versions. Details of how to upgrade these components are discussed within this document.

This technical guide addresses the installation steps associated with the XenApp 6 Platinum feature set. Detailed information regarding planning and installation is available through Citrix eDocs (<http://www.citrix.com/edocs>).

To facilitate the implementation of XenApp 6, this document contains the following sections:

- What's included with XenApp 6?
- Upgrade/Migration Steps

Upgrade vs. Migration

Within this document, there is a distinction between the terms upgrade and migration as defined below:

- **Upgrade:** installing a newer version of a feature or release item over an existing version
- **Migration:** a clean, new installation of that feature or release item

Migrations are typically preferred from a technical standpoint to avoid potential software conflicts.

This document will discuss each of the new features and the associated installation steps; however, in all cases, active Subscription Advantage as of March 17, 2010, is required.

XenApp Feature Set by Edition

XenApp features can only be implemented based on availability by edition. XenApp is offered in four editions and feature set entitlement is based on the specific edition licensed. This document discusses new and updated items incorporated into the Platinum feature set. For more information regarding the complete feature set, please see the XenApp Features by Edition matrix at <http://www.citrix.com/English/ps2/products/subfeature.asp?contentID=2300381>. Note that this matrix is always based on the latest version of XenApp.

In addition, XenApp is included with the Enterprise and Platinum editions of XenDesktop. For example, an organization licensed for the XenDesktop Enterprise or Platinum Edition may choose to present applications hosted on XenApp through XenDesktop virtual desktops. For more information regarding the XenDesktop feature set, please see the XenDesktop Features by Edition matrix at <http://www.citrix.com/English/ps2/products/subfeature.asp?contentID=2300383>. Note that this matrix is always based on the latest version of XenDesktop.

Which Features Should Be Implemented?

Because there are numerous new features and related components that have been released as part of or in conjunction with XenApp 6, administrators and architects should review the functionality of each one in order to determine which ones to implement.

To assist you with learning about XenApp 6 and the new feature set, Citrix offers evaluation options that can be accessed free of charge from <http://www.citrix.com/tryxenapp>:

- A pre-configured virtual machine to evaluate XenApp in your own data center
- Download software and evaluation licenses to create your own XenApp environment

Once the appropriate features have been identified, use the steps or references from this guide to implement them. It's that easy!

What's Included with XenApp 6?

XenApp 6 includes not only a purpose-built version based on Windows Server 2008 R2, but also new components and features. Many of the new components and features also support Windows Server 2008 R2.

Performance improvements for XenApp 6 include 15% or more users per server. A streamlined installation and a unified management console are two new features that administrators will also appreciate, as well as:

- HDX RealTime for Microsoft Office Communicator 2007 and softphone support, as well as CD quality audio
- HDX MediaStream for Flash with server-side media content fetching
- Enhanced color and monitor support, including DirectX/Direct3D hardware acceleration/32-bit graphics and improved multi-monitor functionality
- Windows 7 smart card support

Please note that the Citrix Online Plug-in 12.0 or higher is required to experience the full array of HDX functionality.

XenApp 6 Platinum Components and Features

As part of the XenApp 6 release, the following components and features were updated:

Feature	New Functionality	Use Case
License Server 11.6.1 Build 10007	Dashboard and administrative functionality that provides detailed status information	An administrator wishes to track the number of user licenses available during a peak period.
License Server Monitoring and Reporting	License monitoring data available for all XenApp editions through Track Usage reports (EdgeSight)	An administrator uses the license monitoring functionality to determine licensing compliance.
Application Streaming 6.0	Supports isolation of Windows services into streaming profiles	An administrator profiles and streams Microsoft Office 2010 to user desktops.
Web Interface 5.3	Adds support for XenApp 6 and Windows Server 2008 R2	A user accesses hosted applications from a XenApp 6 farm via a Web Interface site.
Power and Capacity Management	Supports XenApp 6 for Windows Server 2008 R2	An administrator configures Power and Capacity Management to shut down XenApp 6 servers after business hours.
SmartAuditor 1.3	Adds support for XenApp 6 for Windows Server 2008 R2, Windows 7, and SQL Server 2008	An administrator configures SmartAuditor 1.3 based on SQL Server 2008 to record sessions running on XenApp 6.
Profile Management 3.0	Profiles streamed for faster session startup	To address profile requirements for XenApp and XenDesktop, an administrator employs Citrix Profile Management.

Service Monitoring 5.3 (formerly EdgeSight)	Adds support for XenApp 6 for Windows Server 2008 R2	An administrator enables Service monitoring for a new XenApp 6 farm
Provisioning Services 5.1 SP2	Adds support for Windows Server 2008 R2	An administrator within an environment that is transitioning all servers to Windows Server 2008 R2 incorporates Provisioning services 5.1 SP2 to stream the operating system.
Single Sign-On (formerly Password Manager)	Adds support for Windows 7, Windows Server 2008 R2, and x64-based operating systems	A user accesses XenApp 6 hosted applications and credentials are submitted automatically by the Single Sign-On Agent.
Secure Gateway 3.2	Adds support for Windows Server 2008 R2	In an environment wherein Windows Server 2008 R2 is required, an administrator deploys Secure Gateway 3.2 to allow for secure, external user connections.
Merchandising Server/ Receiver 1.2 for Mac and Windows/ Dazzle 1.1.1	Supports 32-bit and 64-bit versions of Windows 7, XP, Vista, Server 2003, and Server 2008, the 32-bit and 64-bit Intel versions of Mac OS X 10.5 (Leopard) and Mac OS X 10.6 (Snow Leopard), and App-V Plug-in	An administrator enables a self-service enterprise “app store” for employees.

Note: This list focuses only on the major enhancements included with this release. The Dazzle feature has since been superseded by the Self-Service Plug-in. For the latest information on the components and features included with XenApp, please refer to the Citrix eDocs site at www.citrix.com/edocs.

Upgrade/Migration Steps

As with all upgrades or migrations, a thoroughly documented and tested design should be part of the project plan. The design should incorporate input from all stakeholders, and a segregated lab environment should be used to systematically test the planned implementation. For example, if the XenApp 6 Migration Tool is used to import settings from the XenApp 5 farm, the farm settings should be verified within a lab environment before rolling out to production.

Sequential Installation Order for Core XenApp 6

When migrating a XenApp farm, the following sequence should be followed:

1. Install or upgrade Citrix Licensing Server 11.6.1 Build 10007 (optional but **strongly** recommended)
 - a. Add licenses and/or verify that Subscription Advantage date is March 17, 2010, or later
2. If using Microsoft SQL Server or Oracle for the Data Store database, install and configure it. SQL Server Express 2008 is installed automatically if selected.
3. Install XenApp 6 on the first server in the farm and perform the initial configuration.
 - a. If applicable, import settings from the XenApp 5 farm using XenApp 6 Migration Tool
4. Install XenApp 6 on member servers and perform additional configuration as necessary.
5. Install or upgrade Web Interface server(s)*
6. Install or upgrade other features/components

*Some upgrade situations warrant Web Interface installation earlier.

Documentation

For a more detailed explanation regarding any of the installation steps presented, please see the eDocs site at <http://support.citrix.com/proddocs/topic/xenapp/xenapp6-w2k8-wrapper.html>.

Citrix License Server 11.6.1 Build 10007

Citrix License Server 11.6.1 has had three iterations: Build 9019, Build 9010, and Build 10007, all of which can be used to support XenApp 6. Citrix **strongly** recommends that the build 10007 release, or newer, be used because it incorporates a new dashboard and administrative functionality.

The latest Citrix License Server is not based on IIS or Java, thus an in-place upgrade of an existing Citrix License Server has no new prerequisites. Prior to upgrading, ensure upgrade eligibility by confirming the Citrix License Server version currently in use. To do so, access the following location in the registry: HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\LicenseServer\Install.

After installation, ensure that the built-in administrative user account “admin” (all lower case) is used for login. The admin account, as well as other accounts created, are case sensitive.

Upgrade/Migration Steps for Citrix License Server 11.6.1 Build 10007	
Upgrading from Citrix License Server 11.3 or higher to Citrix License Server 11.6.1 Build 10007	Migrating to Citrix License Server 11.6.1 Build 10007
<ol style="list-style-type: none">1. Install CTX_Licensing.msi2. Go to Start→Programs→Citrix→Management Console→License Administration Console to open the Dashboard and verify Subscription Advantage date of March 17, 2010, or later	<ol style="list-style-type: none">1. On a Windows Server 2003, 2008, or 2008 R2 server, ensure that the .NET Framework 2.0 or higher is installed2. Install CTX_Licensing.msi3. Install license file(s)

XenApp 6 for Windows Server 2008 R2

In addition to a unified management console, XenApp 6 includes several technical changes:

- All XenApp 6 prerequisites are automatically installed during the installation process (if using the wizard-based XenApp Server Role Manager). As such, only the base Windows Server 2008 R2 operating system must be installed on the server. Note that automatic reboots may occur during the phases of the XenApp installation process.
- The Data Store database can be hosted on SQL Server 2005/2008/2008 R2, SQL Server Express 2008/2008 R2, or 32-bit Oracle 11.2. Refer to <http://support.citrix.com/article/CTX114501> for the latest information on supported database platforms.
- Citrix policies and farm settings are configured and applied universally as Group Policy Objects (GPOs) that have precedence over other local machine policies.

Note: It is possible to store Citrix policies in either the IMA Data Store or in Active Directory as GPO objects.

XenApp 6 implementations must be based on clean Windows Server 2008 R2 operating system installations as Citrix does not support operating system upgrades. Thus, there is no path for upgrading existing XenApp 5 servers, even if based on Windows Server 2008 x64. In addition, a XenApp 6 farm can only encompass XenApp 6 servers; mixed farms are not supported for XenApp 6.

Upgrade/Migration Steps for XenApp 6 for Windows Server 2008 R2	
Upgrading to XenApp 6 from an earlier version of the product	Migrating to XenApp 6 from XenApp 5 or Presentation Server 4.5
No direct upgrade path exists. The operating system and components need to be installed clean.	<ol style="list-style-type: none">1. Install Windows Server 2008 R2.2. Initiate the XenApp 6 installation via autorun.exe. Note that all prerequisites will be installed automatically.3. Use the XenApp 6 Migration Tool to bring in data from the legacy farm.

Citrix Policy Administration

When configuring Citrix policies and farm settings, Citrix recommends the following order of preference based on administrative rights:

Preference	Policy Configuration Location	Applies to	When to Use
1	Group Policy Management Console	All or subset of servers (as configured)	Admin has rights to modify Citrix resources within respective Active Directory OUs and other Group Policy functionality such as inheritance are required
2	Delivery Services Console	All or subset of servers (as	Admin has no rights to modify Citrix resources within respective Active Directory

		configured)	OUs but has full administrative rights within the Delivery Services Console
3	Local Group Policies	Local server only; must manually propagate to other servers	Admin has no rights to modify Citrix resources within respective Active Directory OUs nor full administrative rights within the Delivery Services Console. Local Group Policies are typically not recommended.

While not required, it is recommended to use a consistent policy configuration approach. For example, if a policy is applied through the Group Policy Management Console while another administrator is configuring a similar policy through the Delivery Services Console, unexpected issues may result. As such, care must be taken when using both the Group Policy Management Console and Delivery Services Console to configure policies. Citrix also recommends enabling Microsoft RSoP (Resultant Set of Policies) logging mode and/or Citrix Configuration Logging to track administrative changes.

XenApp 6 Migration Tool

To initiate the transition to XenApp 6, administrators must migrate to a new farm and thus have the following options:

- Create a new XenApp 6 farm and configure all settings manually
- Create a new XenApp 6 farm and migrate settings from an existing XenApp 5 or Presentation Server 4.5 farm

When using the XenApp 6 Migration Tool, administrators are encouraged to review all settings to ensure that they are desired in the new farm; automatically applying the same settings may not be optimal based on environmental changes that have occurred since the legacy farm was installed. The Migration Tool provides options for excluding or modifying settings prior to importation into the new farm.

The XenApp 6 Migration Tool can be used to export settings from the legacy farm and import them into the new XenApp 6 farm. Consider the following table outlining the settings that are and aren't supported:

Settings Transferred	Settings Not Transferred
<ul style="list-style-type: none"> • Applications • Application and server folders • Load evaluators • Policies • Server configuration • Farm configuration • Administrator accounts 	<ul style="list-style-type: none"> • Zones • Printer management, such as driver mappings and auto-replication • Configuration Logging settings • Health Monitoring and Recovery executables • Server registry settings • Deprecated settings, such as Application Isolation Environments

Note: The Zone Preference and Failover policy within XenApp 5 and Presentation Server 4.5 is converted to a Load Balancing Policy in XenApp 6. Previously, many customers implemented additional zones in order to configure failover, whereas XenApp 6 addresses this more efficiently through the use of Worker Groups.

The originating farm from which settings are pulled can only be based on XenApp 5/Presentation Server 4.5 for Windows Server 2003 HRP5 or higher or XenApp 5 for Windows Server 2008. If using an older version, it is necessary to upgrade to the aforementioned releases prior to using the XenApp 6 Migration Tool.

Transferring settings from the legacy farm is best performed by installing the XenApp 6 Migration Tool on a XenApp 6 server and directly importing the settings by pointing at a server in the legacy farm. It is possible to import all settings or be selective. If the existing farm is based on server or application folders, these settings can be exported and designated so that they will be identified as Worker Groups within the new farm. Additional command-line entries are available to include, exclude, or modify specific settings. The administrator must have full administrative rights in the target XenApp 6 farm and a minimum of view-only rights in the source legacy farm. Please refer to Citrix eDocs for additional details on the requirements.

Prior to initiating the migration of settings, Worker Groups should be designated so that server and application silos can be assigned appropriately. This provides administrators with additional flexibility and enables a significant number of new servers to be added to the new XenApp 6 farm at once using a tool such as Citrix Provisioning services.

To transfer farm settings directly using the XenApp 6 Migration Tool, the administrator should do the following:

Transferring Farm Settings Directly with the XenApp 6 Migration Tool

1. On a XenApp 6 server, install the XenApp 6 Migration Tool (Citrix.XenApp.Migration.Install_x64.msi), including the option to set the PowerShell execution policy to AllSigned
2. On the XenApp 6 server, access the tool via the Start->All Programs->Citrix->XenApp Migration Tool menu or open a new PowerShell prompt and execute:
 - a. `Import-Module citrix.xenapp.migration` (if PowerShell was launched directly)
 - b. `Set-ExecutionPolicy RemoteSigned` (if the execution policy option wasn't selected during the install)
 - c. `Set-XAMigrationOption -RemoteServerName [servername] -passthru` to designate a server in the legacy farm
 - d. `Add-XAServerMapping [servername] [worker group name]` to map a server in the legacy farm to a worker group in the XenApp 6 farm (a worker group will be created if it doesn't already exist)
 - e. `Start-XAMigration` to transfer all settings
3. Perform post-migration steps

Please see <http://www.citrix.com/tv/#videos/2510> for a demonstration of the above steps.

Alternatively, an administrator can export settings from the legacy farm into several XML files and then import those settings via the tool. This is ideal for situations where there are different administrative accounts between the farms and/or no direct network path. Perform the following steps to complete an indirect migration:

Transferring Farm Settings Indirectly with the XenApp 6 Migration Tool	
Exporting Settings from the Legacy Farm	Importing Settings to the XenApp 6 Farm
<ol style="list-style-type: none"> 1. Ensure that the .NET Framework 3.5 SP1, MSI 3.0, and PowerShell 2.0 are installed on a the server in the legacy farm 2. Install the XenApp 6 Migration Tool (MigrationToolInstall_x64.msi or MigrationToolInstallx86.msi) on the legacy server 3. Within PowerShell, execute: <ol style="list-style-type: none"> a. <code>Import-Module citrix.xenapp.migration</code> b. <code>Start-XAMigration -ExportOnly</code> 	<ol style="list-style-type: none"> 1. Install the XenApp 6 Migration Tool (MigrationToolInstall_x64.msi) 2. Within PowerShell, execute: <ol style="list-style-type: none"> a. <code>Import-Module citrix.xenapp.migration</code> b. <code>Start -XAMigration -ImportOnly</code> 3. Locate the XML files created by the export process and replace the corresponding files on the XenApp 6 server 4. Perform post-migration steps

Please see <http://www.citrix.com/tv/#videos/2511> for a demonstration of the above steps.

Post-migration steps include the following. Refer to Citrix eDocs for details.

- Attaching load evaluators to servers
- Associating applications folders with worker groups
- Associating servers or OUs with worker groups
- Assigning zones
- Configuring printer settings
- Initiating Configuration Logging within the new farm
- Configuring Health Monitoring settings

For additional details on the XenApp 6 Migration Tool, refer to <http://support.citrix.com/proddocs/topic/xenapp6-w2k8/ps-migrate-xa6-wrapper.html>.

Web Interface 5.3

Web Interface 5.3 adds support for XenApp 6 farms and Windows Server 2008 R2. As in the past, Web Interface can be used to consolidate XenApp published applications, XenDesktop virtual desktops, and published content from multiple Citrix farms. In addition, Web Interface can facilitate the transition to XenApp 6 by hiding duplicate resources with identical names and folder locations making the transition to XenApp 6 as seamless as possible. To hide such items, modify the WebInterface.conf file as follows:

- SuppressDuplicateResources=On
- Farm<N>Groups=<domain>\<Group1>;<domain>\<Group2>

Please note that within Web Interface 5.1 and earlier, the \Clients folder structure differed. When upgrading from version 5.1 and earlier, you must adapt to the new \Clients folder structure in order to continue to install client software by means of Web Interface.

Upgrade/Migration Steps for Web Interface 5.3 on IIS	
Upgrading from Web Interface 4.5 or higher to Web Interface 5.3	Migrating to Web Interface 5.3
<ol style="list-style-type: none">1. Remove any centrally configured sites2. Install Web Interface 5.3	<ol style="list-style-type: none">1. Install Windows Server 2003 SP2, Windows Server 2008 SP2, or Windows Server 2008 R2<ol style="list-style-type: none">a. Windows Server 2003 requires IIS6b. Windows Server 2008 R1 and R2 require Web Server (IIS) role, including IIS6 Management Compatibility2. Install the following:<ol style="list-style-type: none">a. .NET Framework 3.5 SP1b. Visual J#.NET 2.0 Second Editionc. ASP.NET 2.03. Install Web Interface 5.3

Secure Gateway 3.2

Secure Gateway 3.2 adds support for the Windows Server 2008 R2 platform. It includes no new functionality.

Citrix Merchandising Server 1.2/Receiver 1.2

Citrix Merchandising Server 1.2 Admin Console enhancements are included as well as several new plug-ins such as App-V. Receiver for Windows 1.2 is now available in eight languages, and Receiver for Macintosh 1.2 addresses OSX-based devices. Both Merchandising Server and Citrix Receiver should be based on version 1.2.

Dazzle can optionally be used to present users with access to a resource storefront so that they can pick and choose applications needed. Dazzle 1.1.1 requires Merchandising Server 1.2.

Upgrade/Migration Steps for Citrix Merchandising Server 1.2	
Upgrading from Citrix Merchandising Server 1.0 or higher to Citrix Merchandising Server 1.2	Migrating to Citrix Merchandising Server 1.2
<ol style="list-style-type: none">1. Download and save Merchandising Server 1.2 virtual machine RPM file2. Open Merchandising Server console and access Configurations→Upgrade Server and point to the saved location3. Load new plug-ins through Citrix Update Service4. Modify Merchandising Server deliveries as appropriate; Receiver and plug-ins upgrade automatically on client devices	<ol style="list-style-type: none">1. Download and import Merchandising Server 1.2 virtual machine into your XenServer or VMware environment2. Load new plug-ins through Citrix Update Service3. Configure Merchandising Server deliveries4. Deploy Receiver on client devices via your SMS system or download page

VM Hosted Apps

VM Hosted Apps enables an application to be hosted and delivered from centralized Windows XP, Vista, or Windows 7 virtual desktops or physical systems and is a compliment to traditional XenApp application delivery. It uses XenDesktop technology to host a single application which can be ideal for applications that require a desktop operating system or have certain licensing requirements. With the exception of support for XenApp 6 for Windows Server 2008 R2, the functionality of VM Hosted Apps has not changed in this release.

Profile Management 3.0

Profile management 3.0 adds support for Windows Server 2008 R2 and streamed profiles. This means that the user profile is streamed to the computer, and the computer is able to process the logon with only a minimal portion of the profile loaded. Hence, user sessions initiate faster. It also synchronizes the profile during the session so the logoff process is faster.

While it is technically possible to update the existing Profile management ADM template, there is the risk that a minor change will be overlooked. The new ADM template has several new settings, and thus Citrix recommends installing the new Profile management ADM template in a new GPO and transitioning the settings within the previously used Profile management ADM template to the new GPO prior to being deleted.

Upgrade/Migration Steps for Profile Management 3.0	
Upgrading from Profile Management 2.x to Profile Management 3.0	Migrating to Profile Management 3.0
<ol style="list-style-type: none">1. On each managed computer, install the Profile Management MSI:<ol style="list-style-type: none">a. On x86-based systems, install profilemgt3.0.0_x86.msib. On x64-based systems, install profilemgt3.0.0_x64.msi2. Create a new Active Directory GPO and import the ctxprofile3.0.0 adm template3. Compare settings in the previously used GPO and copy and/or modify settings in the new GPO4. Replace assignment of the old GPO with the new GPO and delete the old GPO	<ol style="list-style-type: none">1. On each managed computer, install the Profile Management MSI:<ol style="list-style-type: none">a. On x86-based systems, install profilemgt3.0.0_x86.msib. On x64-based systems, install profilemgt3.0.0_x64.msi2. In a new or existing Active Directory GPO, import the ctxprofile3.0.0.adm template3. Configure GPO policy rules

SmartAuditor 1.3

SmartAuditor 1.3 provides support for XenApp 6 for Windows Server 2008 R2 farms, as well as Windows Server 2008 R2 for server-side components. In addition, the SmartAuditor Policy Console and Player are now supported on Windows 7.

Please note that the instructions below are based on installing all administration components on a single server. Commonly, the SQL Server database requirement is addressed on a distinct server, which may be based on Windows Server 2008 R2, Windows Server 2008, or Windows Server 2003 SP2.

Upgrade/Migration Steps for SmartAuditor 1.3	
Upgrading from SmartAuditor 1.x to 1.3	Migrating to SmartAuditor 1.3
<ol style="list-style-type: none">1. There is no upgrade path	<ol style="list-style-type: none">1. To install all administration components on a single Windows Server 2008 R2 server, install the following:<ol style="list-style-type: none">a. SQL Server 2005 SP2 or SQL Server 2008b. .NET Framework 3.5c. Microsoft Message Queuing (MSMQ) with Active Directory integration disabled and HTTP support enabledd. IIS6 Metabase Compatibilitye. SmartAuditor from the XenApp 6 media autorun2. On each XenApp 6 server, install:<ol style="list-style-type: none">a. MSMQ with Active Directory integration disabled and HTTP support enabledb. SmartAuditor Agent from the XenApp 6 media autorun3. On the device to be used as the SmartAuditor Player, install:<ol style="list-style-type: none">a. .NET Framework 3.5b. SmartAuditor Player from the XenApp 6 media autorun

Power and Capacity Management

Power and capacity management provides an effective power management solution for XenApp servers by automatically turning on and off servers based on a pre-defined configuration, thus reducing energy consumption.

When installing Power and Capacity Management, Citrix recommends that you do not install the database or concentrator on a XenApp server as the functionality of Power and capacity management may shut down those servers. Do not create the database manually because it will be automatically created during the Power and capacity management database installation. In addition, .NET Framework 3.5 is required prior to installing any of the components.

Upgrade/Migration Steps for Power and Capacity Management	
Upgrading to Power and Capacity Management	Migrating to Power and Capacity Management
Not applicable	<ol style="list-style-type: none">1. Install or make available a SQL Server or SQL Server Express database; SQL Reporting is optional but recommended<ol style="list-style-type: none">a. .NET Framework 3.5 required2. On the same or two distinct servers, install Concentrator and the Management Console<ol style="list-style-type: none">a. .NET Framework 3.5 requiredb. On the console, MMC 3.0 or higher required3. Install the Power and capacity agent on each XenApp server4. Configure session capacity and define a schedule before enabling power control and/or load consolidation

HDX WAN Optimization

HDX WAN Optimization, previously known as ICA Acceleration, is incorporated within XenApp 6 for Windows Server 2008 R2. No changes are required from the XenApp server to enable ICA acceleration with Branch Repeater. WAN Optimization requires Branch Repeater as either a virtual or physical appliance.

Application Streaming 6.0

Application Streaming 6.0 adds support for XenApp 6 for Windows Server 2008 R2 and isolation of Windows services. In particular, isolation of Windows services is an important feature because it allows administrators to stream applications that install and depend on their own Windows services such as Microsoft Office 2010. When profiling applications that contain Windows services, it is necessary to designate trusted servers for streamed services (see <http://support.citrix.com/proddocs/topic/xenapp-application-streaming-edocs-v6-0/ps-stream-profile-trust-servers.html>).

Rather than upgrading the Citrix Streaming Profiler, Citrix recommends migrating to the new version. Because the Profiler computer should be based on the operating system most commonly used as the streaming target, a clean installation of Windows Server 2008 R2 is recommended for applications to be streamed to XenApp 6 servers.

The Streaming Profiler 6.0 should be used in conjunction with the Offline Plug-in 6.0, and the Citrix Offline Plug-in can be distributed by means of Citrix Receiver.

Upgrade/Migration Steps for Application Streaming 6.0	
Upgrading from Application Streaming 5.0 to Application Streaming 6.0	Migrating to Application Streaming 6.0
<ol style="list-style-type: none">1. Remove any previous version of the Citrix Streaming Profiler.2. Install CitrixStreamingProfiler.exe on the Profiler computer3. To upgrade a profile, open an existing profile package, make a minor change, and save	<ol style="list-style-type: none">1. Install Windows operating similar to target device2. Install the Application Streaming Profiler 6.0

Load Testing Services 3.6.1

Load testing services, formerly known as EdgeSight for Load Testing, now includes support for Japanese, German, French, Spanish and Simplified Chinese. It is an effective tool for estimating XenApp user loads and resource requirements based on physical or virtual servers.

Upgrade/Migration Steps for Load Testing Services 3.6.1	
Upgrading from Load Testing Services 3.x to Load Testing Services 3.6.1	Migrating to Load Testing Services 3.6.1
<ol style="list-style-type: none">1. Back up any existing scripts2. Install EdgeSight for Load Testing.msi on the server to be designated the controller3. Install EdgeSight WI Support.msi on each Web Interface server (optional)	<ol style="list-style-type: none">1. Install EdgeSight for Load Testing.msi on the server to be designated the controller2. Install EdgeSight WI Support.msi on each Web Interface server (optional)

Provisioning Services 5.1 SP2

Provisioning Services enables XenApp workloads to be streamed on demand to physical or virtual machines. The Service Pack 2 release adds support for Windows Server 2008 R2, as well as minor updates.

Upgrade/Migration Steps for Provisioning Services 5.1 SP2	
Upgrading from Provisioning Services 5.0 or higher to Provisioning Services 5.1 SP2	Migrating to Provisioning Services 5.1 SP2
<ol style="list-style-type: none">1. Backup the existing Provisioning Services database2. Uninstall Provisioning Services and reboot the server3. Install Provisioning Services 5.1 SP2 to upgrade the existing installation (select farm already configured)4. On the XenApp servers, install the Provisioning Services target device software:<ul style="list-style-type: none">• Automatic upgrade (recommended): run the Provisioning Services Upgrade Wizard, which includes:<ol style="list-style-type: none">a. Provisioning Services Upgrade Managerb. UpgradeConfig.exe• Manual upgrade: uninstall target device Provisioning Services software, reboot the target device, and install Provisioning Services 5.1 SP2 target device software5. Boot into private mode of newly updated vDisk and run XenApp Server Configuration tool to rejoin the XenApp farm6. Shut down server and move disk back into standard image mode	<ol style="list-style-type: none">1. On Windows Server 2003 SP2, Windows Server 2008 or Windows Server 2008 R2, install Provisioning Services 5.1 SP2, which includes:<ol style="list-style-type: none">a. Provisioning Services installation wizardb. Provisioning Services console wizard2. Utilize an existing Microsoft SQL Server 2005 or 2008 (or Express) instance or create one3. Configure Provisioning Services4. On the XenApp server, install the Provisioning Services target device software, which includes the target device installation wizard5. Run XenApp Server Configuration tool and rejoin the XenApp farm6. Build the vDisk using XenConvert tool7. Shut down server and move disk back into standard image mode

Service Monitoring 5.3 (formerly EdgeSight)

In addition to new report functionality, Service monitoring 5.3 incorporates the EdgeSight Agent 5.3 for XenApp 6.

In addition, Citrix License Server monitoring and reporting has been incorporated in this release and is available for all Citrix products. This feature does not require an agent because the license servers are polled. However, the instructions below are based on the full Service monitoring capabilities offered with Platinum licensing.

The instructions for upgrading or migrating the server-side components to Service monitoring (EdgeSight 5.3) are the same whether the installation is based on XenApp Platinum or XenApp Enterprise licensing. As with the previous versions, when installing the agent on the XenApp servers, designate Advanced functionality (Service monitoring) for Platinum licensing and Basic functionality (Resource Manager) for Enterprise licensing.

Upgrade/Migration Steps for EdgeSight 5.3	
Upgrading from EdgeSight 5.x to EdgeSight 5.3	Migrating to EdgeSight 5.3
<ol style="list-style-type: none">1. Backup the existing EdgeSight database<ol style="list-style-type: none">a. If SQL Server 2000, must upgrade to SQL Server 2005 or 20082. Install EdgeSight 5.3 on the existing EdgeSight 5.x console server3. Install the EdgeSight 5.3 agent on each XenApp 6 server and reboot	<ol style="list-style-type: none">1. Install Windows Server 2003 SP1 or higher or Windows Server 2008 (including IIS 6 or higher, MSMQ, and .NET Framework 3.5 SP1), SQL Server 2005 or 2008 (must install Database Services, Reporting Services, and Workstation components), and EdgeSight 5.32. Install the EdgeSight agent on each XenApp server and reboot

EasyCall Voice Services 3.0

EasyCall voice services is a virtual server that integrates with your in-house telephony system and Active Directory. It now incorporates call forwarding, a secondary conference access number, and a Macintosh plug-in.

Upgrade/Migration Steps for EasyCall Voice Services 3.0	
Upgrading from EasyCall Voice Services 2.2 (virtual appliance) to EasyCall Voice Services 3.0	Migrating to EasyCall Voice Services 3.0
<ol style="list-style-type: none">1. Download the EasyCall 3.0 virtual appliance upgrade image from MyCitrix and install onto a XenServer host2. Restart the EasyCall appliance3. Install or upgrade client devices to the EasyCall 3.0 plug-in	<ol style="list-style-type: none">1. Download the EasyCall 3.0 virtual appliance from MyCitrix and install onto a XenServer host2. Connect to your in house phone systems3. Configure integration with Active Directory4. Install or upgrade client devices to the EasyCall 3.0 plug-in

Single Sign-On 4.8 (formerly Password Manager)

Single Sign-on 4.8, formerly known as Password Manager, now includes support for Windows 7, Windows Server 2008 R2, and x64-based computers. In addition, improved web page definition criteria and AES encryption are offered.

Please note that the Application Definition Tool and central store media should be accessed from the XenApp 6 media. From the XenApp autorun, select Manually install components→Server components→Miscellaneous→Single sign-on.

As with previous versions, the Single Sign-on Service and Single sign-on Plug-in should not be installed on the same computer, and Single Sign-on should not be installed on a domain controller.

Upgrade/Migration Steps for Single Sign-On 4.8	
Upgrading from Single Sign-On/Password Manager 4.6 to Single Sign-On 4.8	Migrating to Single Sign-On 4.8
<ol style="list-style-type: none">1. Upgrade the Single sign-on Service (Citrix Password Manager Service.msi)2. Upgrade the Single sign-on component within the Delivery Services Console (ASC_PasswordManager.msi)3. If used, upgrade the Application Definition Tool4. Upgrade the central store5. Upgrade the Single sign-on plug-in on user computers and/or XenApp servers	<ol style="list-style-type: none">1. Create the central store in Active Directory or NTFS file share2. Install the Single sign-on component within the Delivery Services Console (ASC_PasswordManager.msi)3. Install the Single sign-on Service (Citrix Password Manager Service.msi)4. Install the Application Definition Tool5. Install the Single sign-on plug-in on user computers and/or XenApp servers

Workflow Studio Orchestration 2.0.1

Workflow Studio orchestration provides a rich interface for designing Citrix Delivery Center workflows. Release 2.0.1 includes new activity libraries for XenDesktop and Provisioning services.

When upgrading Workflow Studio, the workflows stored in the database and workflow job history data in the user profile are not removed as part of the uninstall process. Thus, no data is lost when following the upgrade steps defined below.

Upgrade/Migration Steps for Workflow Studio 2.0.1	
Upgrading from Workflow Studio 1.0 to Workflow Studio 2.0.1	Migrating to Workflow Studio 2.0.1
<ol style="list-style-type: none">1. Backup the existing Workflow Studio database2. Uninstall Workflow Studio 1.03. Ensure that the following are installed on the Workflow Studio server:<ol style="list-style-type: none">a. .NET Framework 3.5 SP1b. PowerShell 1.0c. Microsoft Authorization Manager4. Install the Workflow Studio 2.0.1 designer console and runtime; select the option to upgrade when the database is detected5. Upgrade Workflow Studio 2.0.1 remote runtime on at least one XenApp server (usually Zone Data Collector)	<ol style="list-style-type: none">1. Install or make available SQL Server 2005 database instance2. Install the following on the Workflow Studio designer console and runtime servers (if segregated):<ol style="list-style-type: none">a. .NET Framework 3.5 SP1b. PowerShell 1.0c. Microsoft Authorization Manager3. Install designer console and Workflow Studio runtime on same or different server4. Install Workflow Studio remote runtime on at least one XenApp server (usually Zone Data Collector)

Revision History

#	Change Description	Author	Date
1.0	Original Version	Jo Harder	05/01/2010
1.1	Adjusted formatting, updated links, updated the upgrade and migration steps, updated Migration Tool info and various sections	Allen Furmanski	08/22/2011

Citrix Worldwide

Worldwide headquarters

Citrix Systems, Inc.
851 West Cypress Creek Road
Fort Lauderdale, FL 33309
USA
T +1 800 393 1888
T +1 954 267 3000

Regional headquarters

Americas

Citrix Silicon Valley
4988 Great America Parkway
Santa Clara, CA 95054
USA
T +1 408 790 8000

Europe

Citrix Systems International GmbH
Rheinweg 9
8200 Schaffhausen
Switzerland
T +41 52 635 7700

Asia Pacific

Citrix Systems Hong Kong Ltd.
Suite 3201, 32nd Floor
One International Finance Centre
1 Harbour View Street
Central
Hong Kong
T +852 2100 5000

Citrix Online division

5385 Hollister Avenue
Santa Barbara, CA 93111
USA
T +1 805 690 6400

www.citrix.com

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