Reviewer's Guide
XenDesktop 7.5

CITRIX

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Introduction

The Reviewer's Guide is designed to help you quickly install and configure XenDesktop 7.5 for evaluation. It guides you through a XenDesktop 7.5 deployment scenario to help you better understand how the applications and desktop delivery capabilities work in the FlexCast 2.0 unified architecture. The instructions in this section are meant to provide you with an evaluation method to the three common use cases: hosted-shared desktops, hosted-shared apps and VDI desktops.

The assumptions for target audience of this document are:

- familiarity with previous versions of XenApp or XenDesktop
- good knowledge of virtual machine management and Windows server infrastructure
- experience in a system administration or technical reviewer role

At the end of this guide, reviewer will be able to deliver applications and desktops using XenDesktop 7.5 and access those resources using Citrix StoreFront and Receiver. Please see the **Reviewer's Guide for XenApp 7.5** for instructions on delivering apps and desktops from Server OS

Important: Please follow the instructions in the Reviewer's Guide for XenDesktop 7.5 in the order they are presented. Do not skip topics. The Reviewer's Guide for XenDesktop 7.5 experience is designed to build from topic to topic. If steps are skipped or not completed as described, the expected outcome of the scenario may fail to occur.

The guide will highlight the following new features in XenDesktop 7.5:

1. FlexCast Management Architecture (FMA)
2. Intuitive Workflows
3. Support for Windows 8/ Windows Server 2012
4. Realtime Configuration Validation
5. StoreFront
6. Director Dashboard
7. HDX Mobility end-user enhancements

For a more in-depth evaluation or more details on the release, please see the Administrator's Guide

What is XenDesktop 7.5?

Transforming apps and desktops delivery, XenDesktop 7.5 allows customers to select, configure and scale more mobile use cases more quickly, easily and economically than ever before. It allows delivery of apps and desktops from both desktop OS and server OS platforms. The latter functionality (delivering apps and desktops from server OS) is also available as a standalone product called **XenApp 7.5.** Unlike the XenApp 6.5 product based on Independent Management Architecture (IMA), both XenApp 7.5 and

XenDesktop 7.5 are based on the new, more-scalable FlexCast Management Architecture (FMA). One of the major changes you will find in this release is the concept of a unified architecture and management for XenApp and XenDesktop. Unlike previous deployments requiring separate infrastructure for XenApp and XenDesktop, the unification of the architecture enables administrators to design and deploy a single delivery infrastructure for delivering applications (XenApp) and desktops (XenDesktop).

So what does this mean to existing XenDesktop and XenApp customers?

If you have an earlier XenApp deployment (before version 7.5), build a new environment. You cannot upgrade or migrate to the current version. If you have a XenDesktop 4.x deployment, first build a new environment, then use the Migration Tool to transfer data and settings to the new Site. For details, see *Migrate XenDesktop 4*. If you have a XenDesktop 5.x or later deployment, you can upgrade to the latest version. For details, see *In-place upgrade*.

For the evaluation guide, please create a new deployment starting with freshly installed operating systems (OS).

Here's an overview of the unified infrastructure components:

- **Citrix Receiver**. Receiver provides users with self-service access to resources published on XenDesktop servers. Receiver combines ease of deployment and use, and offers quick, secure access to hosted applications, desktops, and data. Receiver also provides on-demand access to Windows, Web, and Software as a Service (SaaS) applications.
- **Citrix StoreFront**. StoreFront authenticates users to XenDesktop 7.5 sites and manages stores of desktops and applications that users access using Citrix Receiver.
- **Citrix Studio**. Studio enables you to configure and manage your XenDesktop deployment. Studio provides various wizards to guide you through the process of setting up your environment, creating your desktops, and assigning desktops to users.
- **Citrix Director.** Director is a Web-based tool that enables IT support and help desk teams to monitor a XenDesktop environment, troubleshoot issues before they become system-critical, and perform support tasks for end users.
- **Delivery Controller**. The Delivery Controller is responsible for distributing applications and desktops, managing user access, and optimizing connections to applications. Each site has one or more delivery controllers.
- **Server OS Machines.** VMs or physical machines based on Windows Server operating system used for delivering applications or hosted shared desktops to users.
- **Desktop OS Machines.** VMs or physical machines based on Windows Desktop operating system used for delivering personalized desktops to users or applications from desktop operating systems.
- **Virtual Delivery Agent**. The Virtual Delivery Agent has to be installed on the virtual or physical machines (server or desktop OS'es) to which your users will be connecting for applications and desktops. It enables the machines to register with the Delivery Controllers and manages the HDX connection between the machines and Citrix Receiver.

Getting Started

Part 1: Download the software

Please download the free evaluation software from http://www.citrix.com/tryxendesktop. For this evaluation, we assume the reviewer will perform the necessary steps to put the ISO on a DVD or mount it as a virtual disk.

This guide is developed using the free XenServer, available from www.citrix.com/xenserver/download. XenDesktop 7.5 can also be installed on physical servers as well as virtual machines running on Microsoft Hyper-V and VMware vSphere. ***Note:*** *If Hyper-V will be used to support the XenDesktop 7.5 environment, Microsoft's System Center Virtual Machine Manager is also required. See the systems requirements for details.*

Part 2: Network design

The Reviewer's Guide for XenDesktop 7.5 leads you through a detailed scenario to a planned outcome. Each of the tasks contained here build toward that outcome. Once you have concluded this series of exercises, you will have an environment on which you can explore XenDesktop 7.5's full features and scalability. Not every component, feature, or configuration is addressed here.

The instructions in this section are meant to provide you with an evaluation method. For convenience in evaluating, components are installed on fewer servers[1] than are recommended for a production environment. An ***Active Directory*** infrastructure with DNS and DHCP services is required (for this evaluation, we recommend an isolated active directory and DHCP for the test environment.)

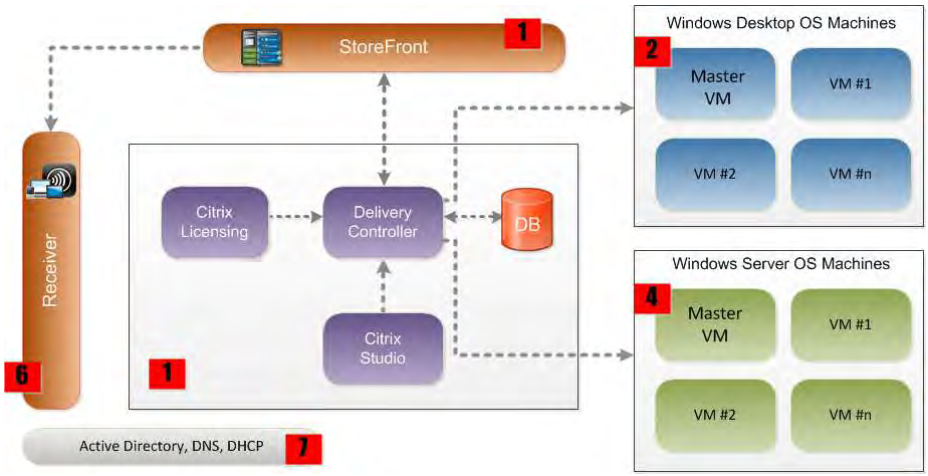


Figure 1 Simplified network design for XenDesktop 7.5 evaluation

[1] The inset numbers in Figure 1 correspond to the virtual machines listed in Table 1

Tip: While not recommended for production deployment, all virtual machines for this evaluation may be run on a single physical server – both infrastructure and client machines. We used server hardware with 8 CPU cores and 64GB RAM for the test load.

Part 3: Prerequisites

We shall perform installation and configuration of the XenDesktop 7.5 software, running through the 3-step wizard to perform initial configuration. The installation and configuration (excluding the pre-requisites) is expected to take around 2.5 hours.

Before we begin, please complete these prerequisite tasks.

1. Create a group *CitrixEval* in the active directory. Add users (*user1, user2,* etc.*)* to the *CitrixEval* group. These accounts must have local administrator privileges and be domain administrators in the Active Directory.

2. Create the virtual environment using your hypervisor of choice. XenDesktop 7.5 is supported on Microsoft Hyper-V Server 2012, VMware vSphere 5.5[2], and Citrix XenServer 6.2. This guide was created using **Citrix XenServer 6.2**. Please refer to vendor documentation for setting up the hypervisors for desktop virtualization.

3. You need a VM template for each operating system under test: Windows 7, Windows 8, Windows Server 2008 R2, and Windows Server 2012 R2. Create virtual machine templates as follows: define the VM specifications as (2 vCPU, 2GB RAM, 24GB vDisk) for Desktops and (2 vCPU, 4GB RAM, 24GB vDisk) for Servers. Assign a single network interface to all VMs. Install the operating system and activate. Convert to template. (Refer vendor documentation for details)

Here's the list[3] of VMs we require for the setup, as seen in Figure 1.

Table 1 Virtual Machine assignments

VM#	Operating System	Purpose
1	Windows Server 2012R2	Citrix Studio, Director, StoreFront, SQL Database, and License server
2	Windows 8.1	Windows 8 master image
3	Windows 7 SP1	Windows 7 master image
4	Windows Server 2012R2	Windows Server 2012 master image
5	Windows Server 2008 R2 SP1	Windows 2008 R2 master image
6	Windows 7 SP1	End-point client with Citrix Receiver
7	Windows Server 2008 R2 SP1	*(Optional)* Either create new Active Directory domain and run DNS and DHCP services, or reuse existing
8-12	--	*Auto-created VMs by Machine Creation Services (MCS)*

[3] VM #3 and #5 are optional for evaluation purpose because the process to create and deliver desktop OS (Windows 8 or Windows 7) and server OS (Windows Server 2012R2 or Windows Server 2008R2) is similar across the operating system versions.

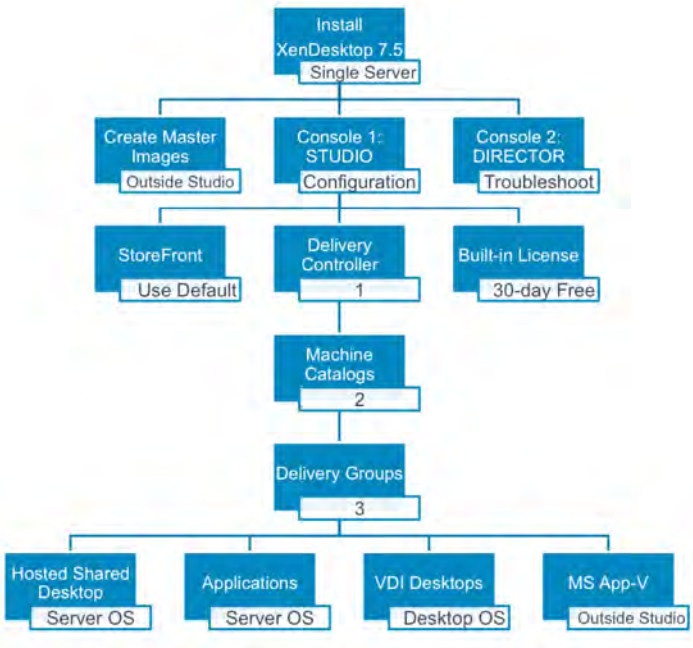
Using these templates, create VM's 1 through 7 as per Table 1. Take *snapshot* of the "clean state" for each VM before installing any software other than the operating system (helpful if you ever wish to go back to square one). Join all VMs to Active Directory domain. Using these VMs to create base image is explained later, in *Step 1.1: Creating the master image*

Part 4: Activity scenario

The example scenario is to deliver two VDI desktops, one hosted shared desktop, and two sets of applications.

1. One desktop with Windows 7 operating system
2. One desktop with Windows 8 operating system
3. One desktop based on Windows Server 2012 R2 operating system
4. Two Microsoft applications (Wordpad, Calculator) published from Windows Server 2008 R2
5. Two Microsoft applications (Notepad, Paint) published from Windows Server 2012 R2

During this evaluation, our server-side activity flowchart will look something like this.



After we download and install the software, getting to your published desktops and apps is a 3-step process, driven through a user-friendly wizard in **Citrix Studio**. There is only one task that need to be performed outside of the wizard-based Studio console, and that is creation of the **master images**. This involves setting up Windows machines with the required OS and other applications, then installing Citrix **Virtual Delivery Agent** on them to enable communication with the controller.

The FlexCast 2.0 architecture offers multiple ways of delivering desktops and apps to your users. In this guide, we shall see two examples under step-3 (Creating delivery groups). Throughout the document, we will highlight some of the key new technologies that are highly anticipated by the Citrix community, such as the Intelligent Configuration Validation, Inline Context-Aware Help, or the ability to deliver latest Microsoft technologies.

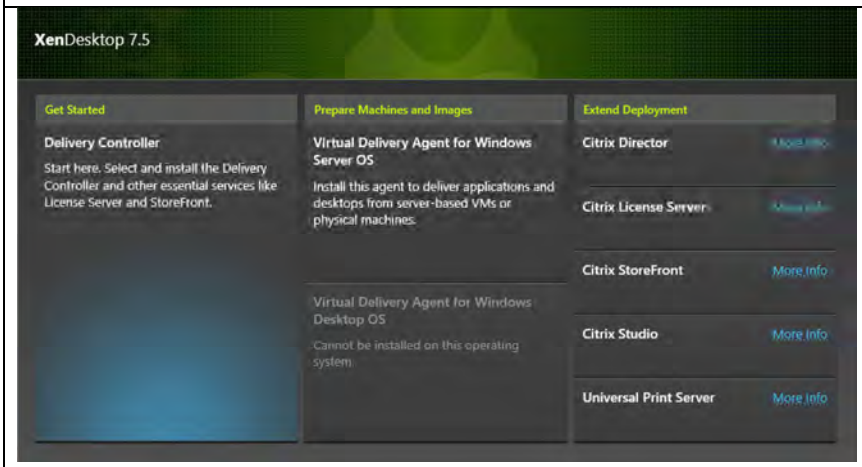
At the end-point, we will launch **Citrix Receiver** from a client device and connect to the virtual desktop infrastructure to review the experience as an end-user. During this time, we will use the second console in XenDesktop 7.5, called Director, to view real-time session information and analytics. **Citrix Director** is a web-based console that offers a context-aware dashboard to empower the IT help desk and Citrix specialists to quickly identify and resolve issues before they negatively impact end user. Director now integrates with NetScaler performance monitoring engine (HDX Insight) to provide end-to-end visibility: from network-layer all the way up to the application layer. Please visit http://edocs.citrix.com for more details.

Step 1: Installation

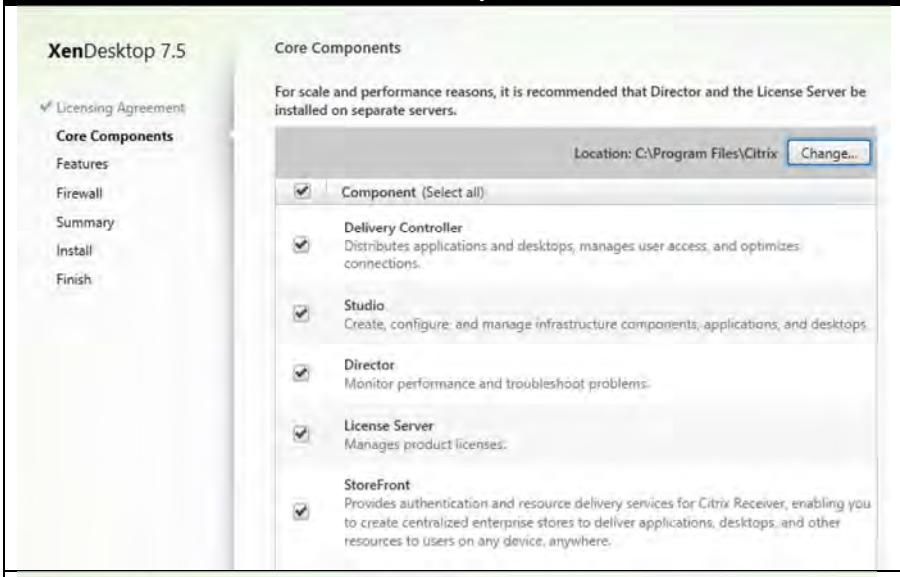
We assume that pre-requisites (previous section) are in place, and the software has been downloaded to a DVD (or mounted on a virtual DVD). Also, create VM1 and install Windows Server 2012 R2 (as per Table 1), and add the computer to active directory domain. This chapter describes the process for installing various components[4] of XenDesktop 7.5 and first-run of the Delivery Studio.

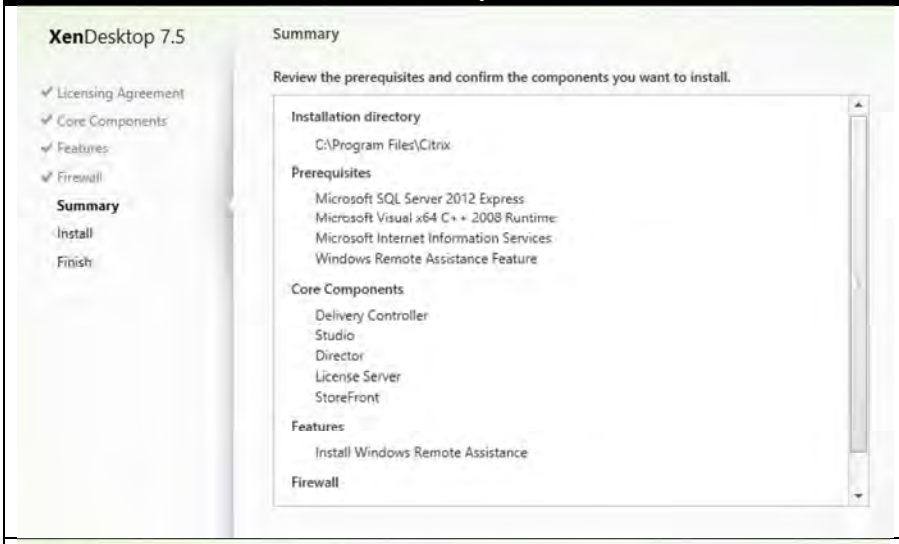
Install the core components on VM1

VM1 is the Windows Server 2012 that will host the core components of XenDesktop 7.5.

Screen capture	Instructions
	Insert the XenDesktop 7.5 DVD into VM1 and launch the Autorun Wizard. Click **Start** on the XenDesktop option to enter the *Installation Wizard*. ✓ A <u>fresh installation</u> of the Operating System, updated with latest patches before starting the evaluation, will provide the best results. Avoid installing any unrelated software on these test VMs.
	Select the **Delivery Controller** under *Get Started*. ✓ The Installation Wizard automatically detects the Operating System and displays only *compatible* installation options. The Wizard UI has been redesigned with helpful descriptions for the different installation options.

[4] <u>Note:</u> As a rule of thumb, we will select the default option for most configuration settings. Where a different option is recommended, or there is interesting information to help you perform a better evaluation, such comments are indicated with a ✓ sign.

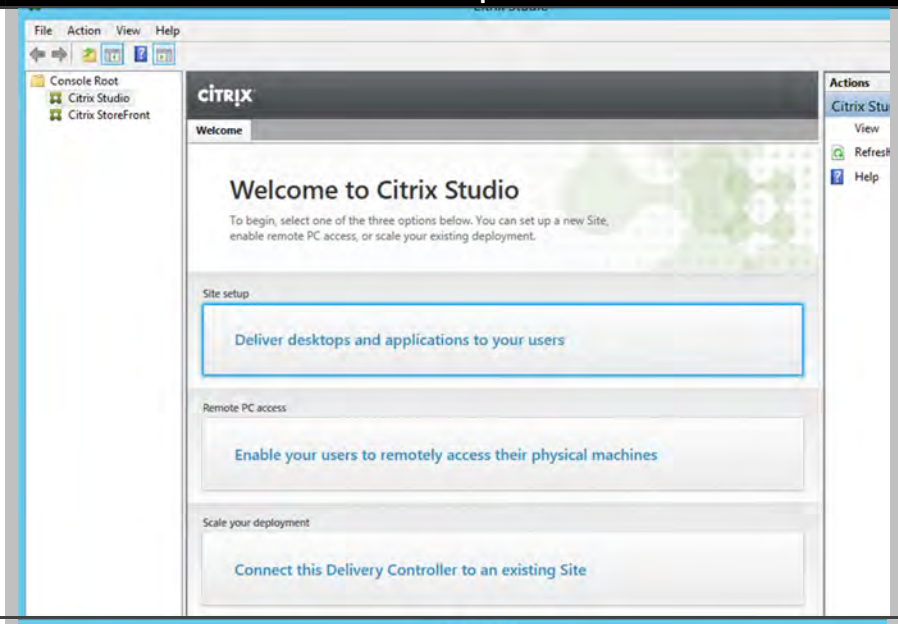
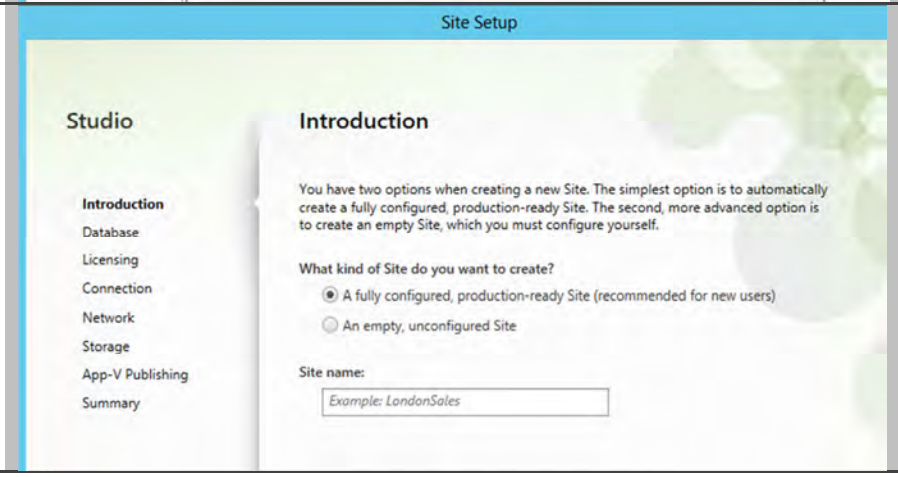
Screen capture	Instructions
	For the purpose of this evaluation, we will install all the core components on a single server. Accept the default values and click **Next** ✓ In a production environment, it is best practice to install the core components on separate and multiple servers for high availability and resource scaling. See the XenDesktop 7.5 *Administrator Guide* for more details.
	For this evaluation, we will use the built-in SQL Server Express to store desktop and app settings. Accept the **default** value and click **Next**.
	Allow the Installer to automatically configure Windows Firewall. Accept the **default** value and click **Next** ✓ If you are using a non-Windows Firewall, the Installer may be unable to configure it automatically. For this exercise, manually ***disable*** any non-Windows Firewall or security apps.

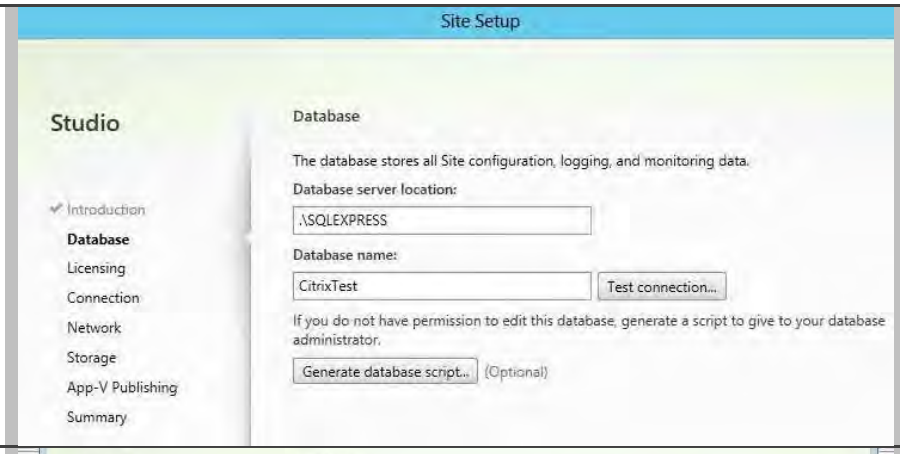
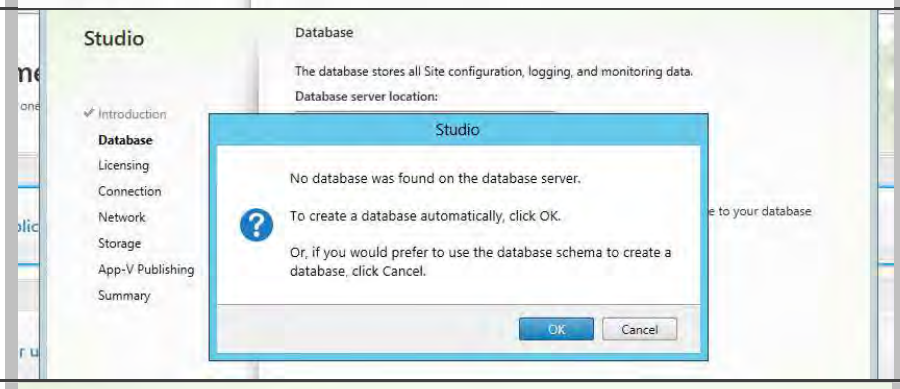
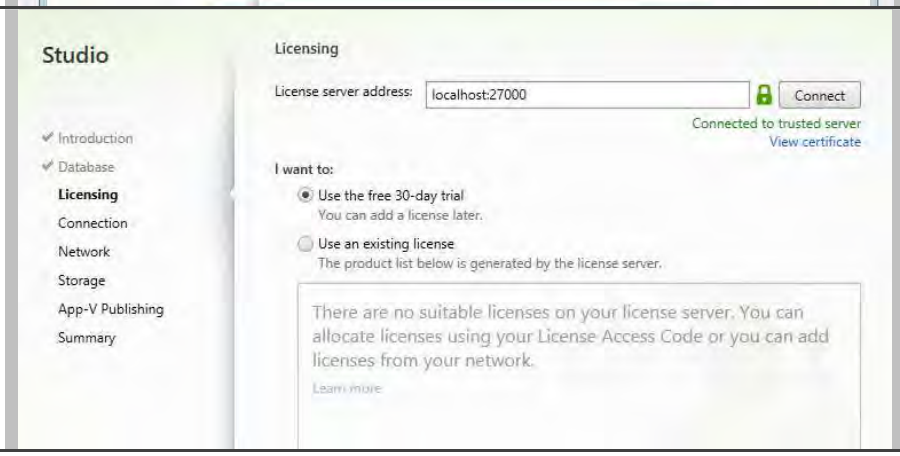
Screen capture	Instructions
	That's all the information the Wizard needs to install the core components. Verify the information for accuracy, and click **Install**
	All the components are installed automatically, including any missing pre-requisites. The process takes 20-30 minutes. You may opt to *Launch Studio* when you click **Finish.** ✓ Citrix Studio is the unified management console that will be configured next.

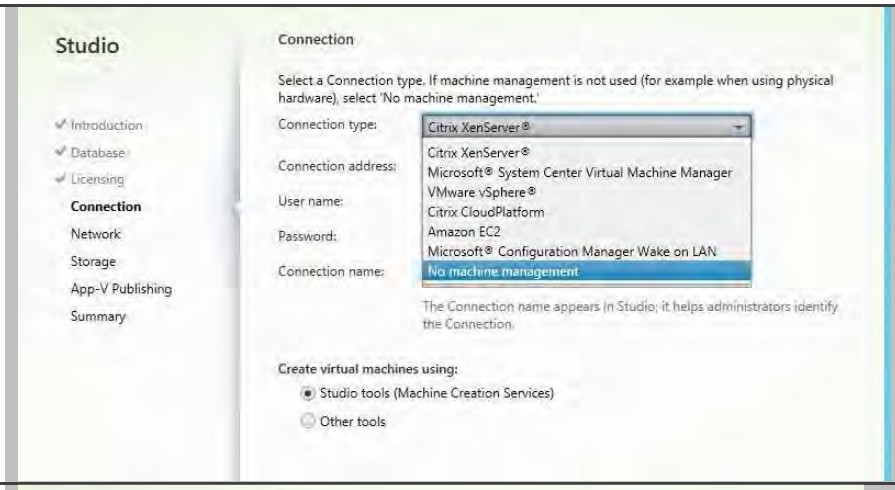
First run of Citrix Studio

The first run wizard of the Citrix Studio helps you quickly build a new site, create pool of desktops and servers (machine catalog), and assign users to those desktops and applications (delivery groups). Alternatively, you can enable Remote PC Access to physical machines and add the virtualized deployment later, or add this controller to an existing deployment. These latter steps are not in scope of this guide.

On subsequent runs, individual wizards may be invoked from the Studio console to accomplish any of the same tasks, such as creating machine catalog or assigning users to a delivery group.

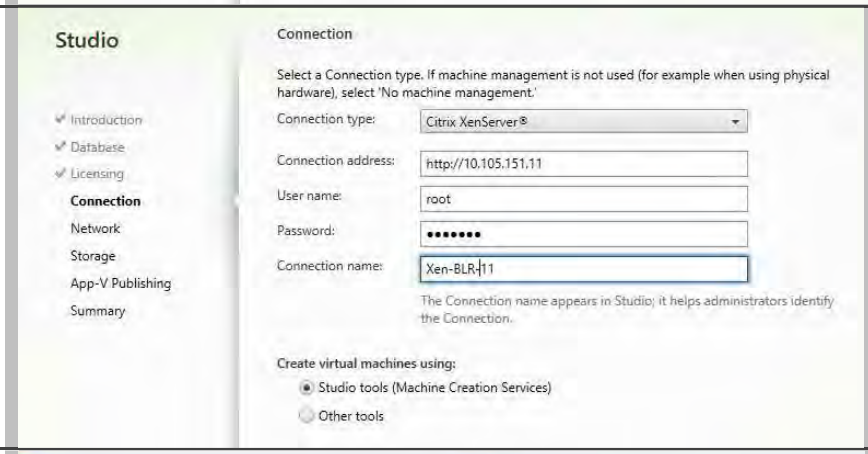
#	Screen capture	Instructions
		Select the **Full Deployment** wizard on the first-run welcome screen. This wizard creates the initial configuration, database tables, and site environment. Select the *Full Deploy* option for this evaluation, and click **Start**
		The first step is to create a site, which is the container for everything else we do today. For this example, select the *default option,* give a name Click **Next**

		Provide the database details to store configuration and logging information. If using bundled SQL Express, the default address is ".\SQLEXPRESS". Configuration user should be a domain administrator. Provide a **name** for the Database and click **Next**
		At the prompt to create a database automatically, click **OK** to continue
		Accept the default licensing selection for a 30-day free trial. Click **Next** ✓ If you have a separate license server and wish to use existing XenDesktop 7.5 licenses, you would make that selection at this time.



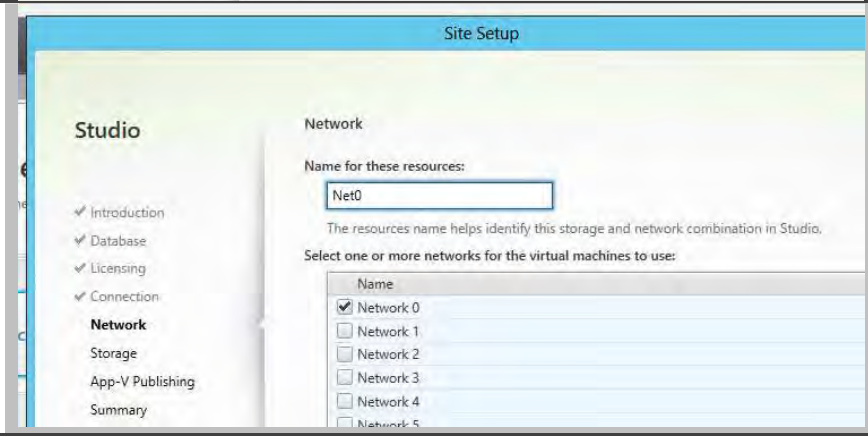
Provide connection details for the **hypervisor** that will host virtual machines created by MCS (Machine Creation Services)

✓ This guide uses *Microsoft Hyper-V Server 2012* but all major hypervisors are supported.



✓ It is a pre-requisite to have the SCVMM Console installed on the same machine as the delivery Controller.

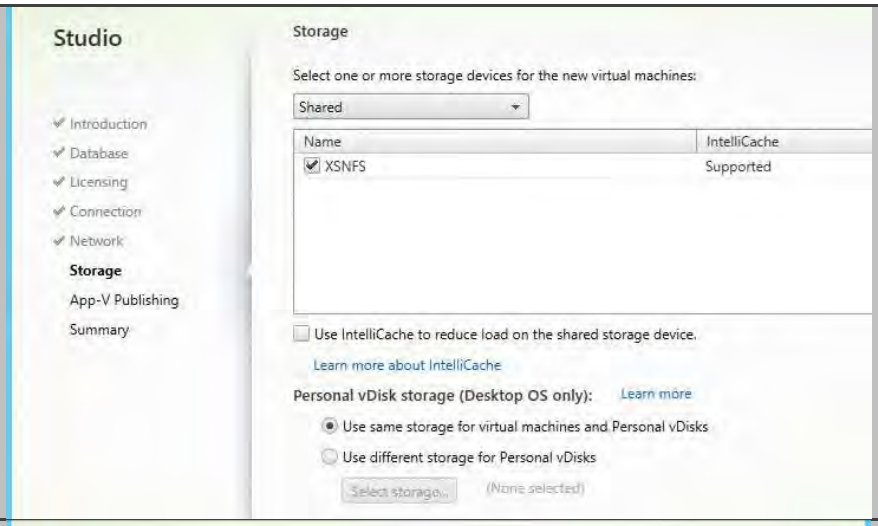
If you get this error, please follow SCVMM guide to complete the installation and return to this wizard



Select the server (or Hyper-V cluster) and network interface that all the virtual machines should use.

✓ For the evaluation, we recommend using **one and the same** *network interface* for all VMs.

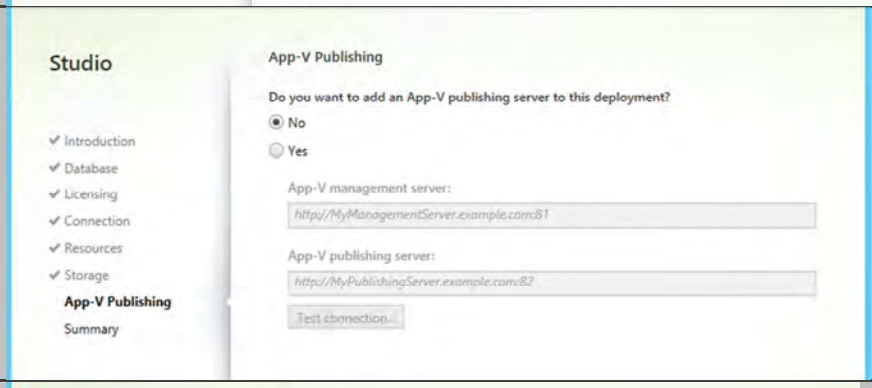
Click **Next**



The last step is to specify the storage for the VMs.
For evaluation purpose, select the ***local*** storage

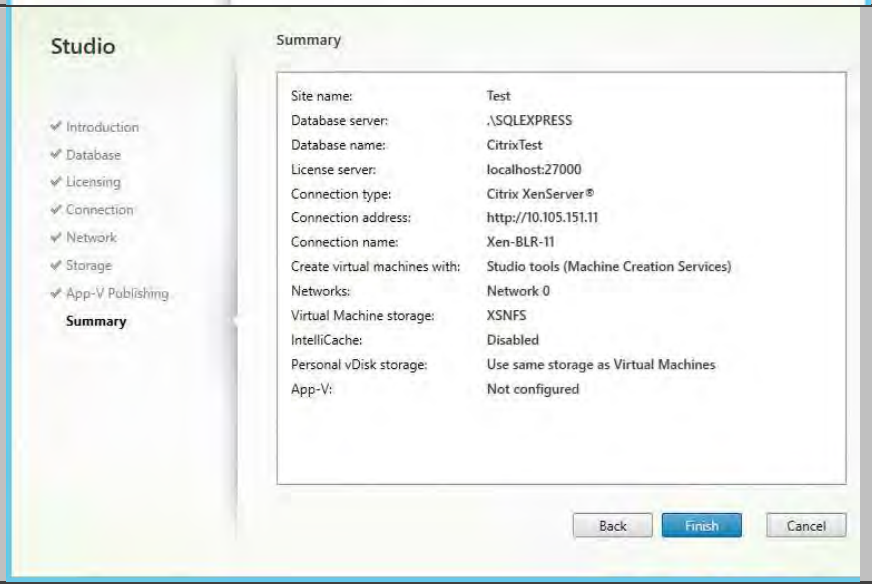
If ***shared*** storage is available, you may select that option.

Leave the other options ***default*** and click **Next**



XenDesktop 7.5 provides streamed apps with integrated App-V publishing in a few simple steps.

For this evaluation, accept ***default*** option and click **Next**



Verify the settings on the Summary page and click **Finish** to complete the configuration.

✓ Before moving to Step 2 of the first run Wizard, we must perform some tasks outside the Studio workflow.

We do that in Step 1.1, and return to Studio in Step 2

Step 1.1: Creating the master image and an app-store

Before we move on to step 2 of the Wizard and configure Desktops or Apps, it is necessary to create the master images that will be used by Machine Creation Services (MCS) to create further VMs. This is also known as a Golden Image or a Base Image.

XenDesktop 7.5 creates a default store in Citrix StoreFront; once Delivery Groups are created, the environment is available for access without any additional steps unless you wish to customize the store. The StoreFront configuration is available via the Studio console as well as its own standalone console.

Install Delivery Agent on the Master Image (Desktop OS)

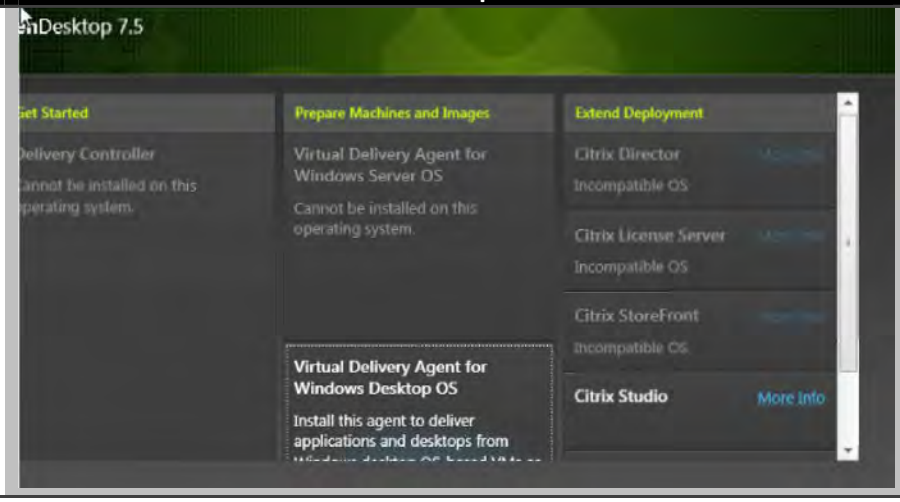
In the section on *Getting Started*, one prerequisite is to create the virtual machine (VM) templates. This means you define the VM (vCPU, RAM, Disk space), install the operating system (OS), install the apps, and make any configurations you want to be part of your user's desktops.

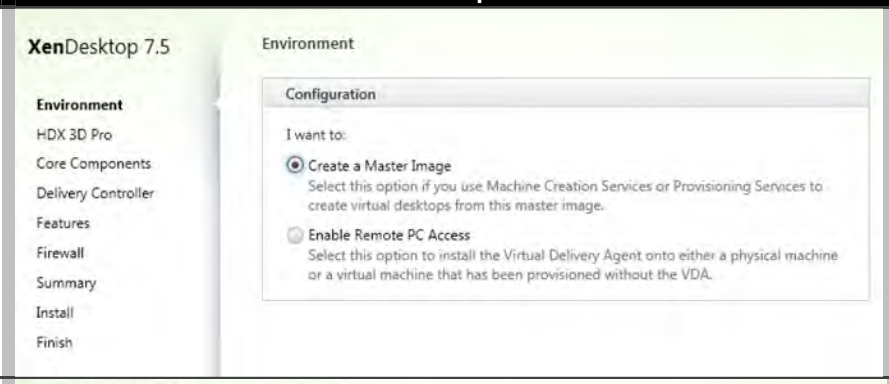
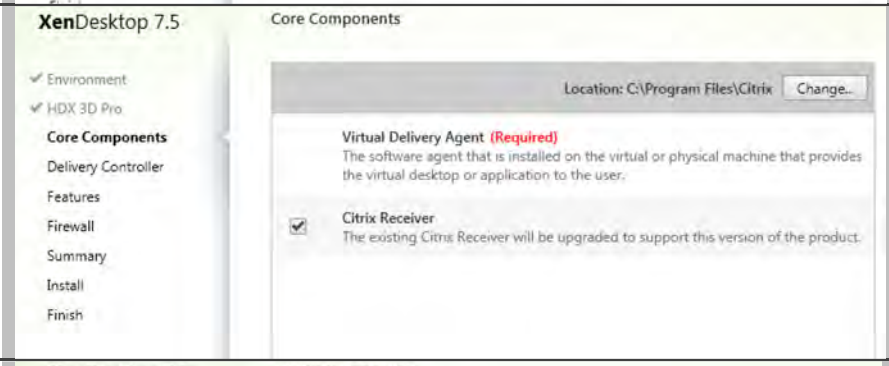
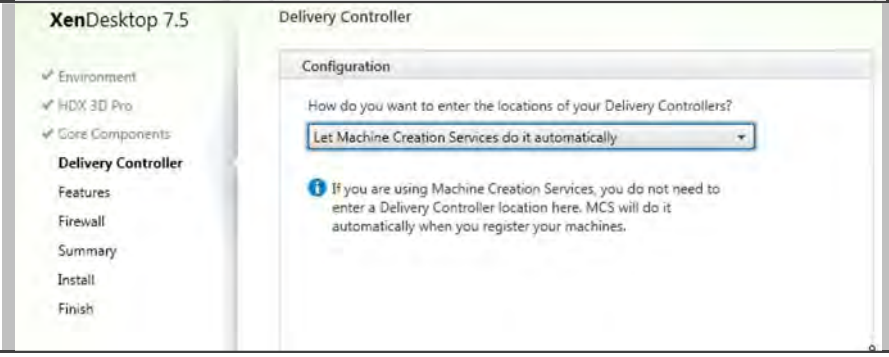
Your account must have local administrator privileges and be a domain administrator in the Active Directory.

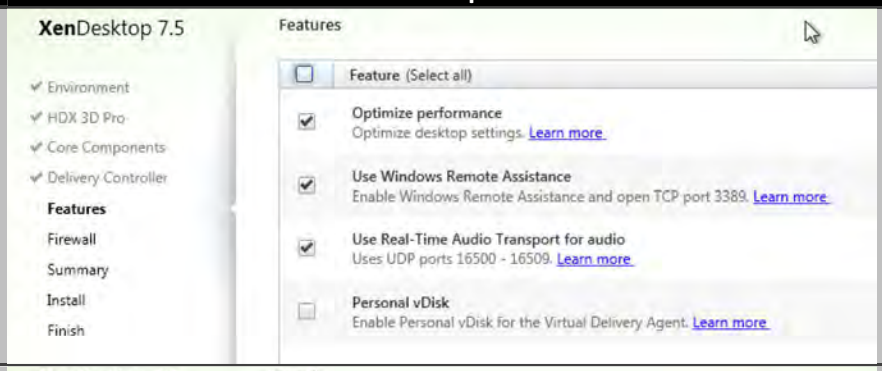
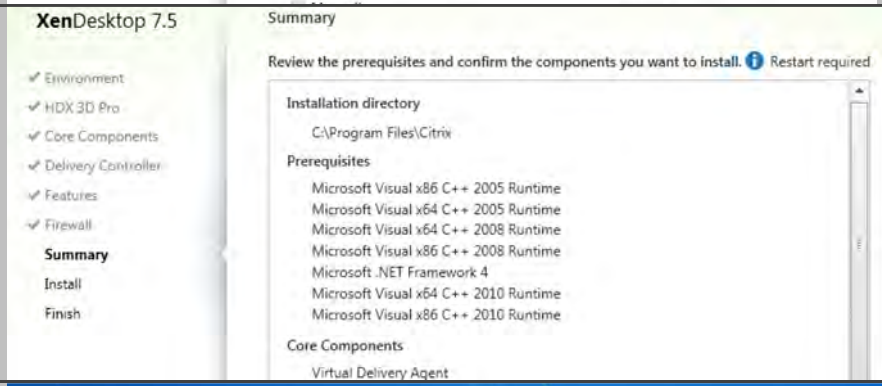
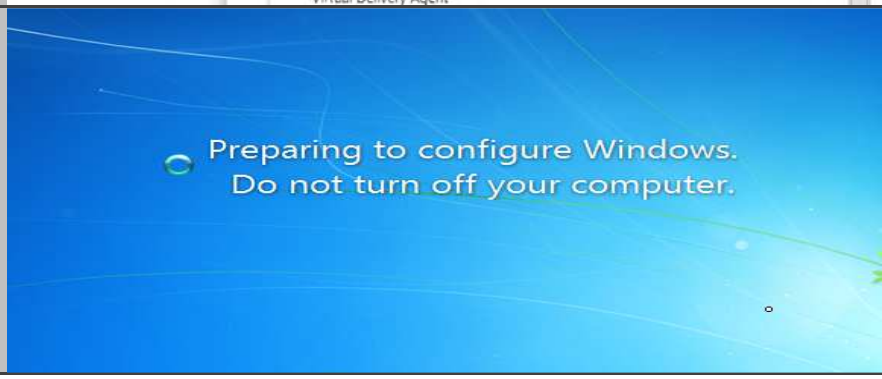
Use a client OS template to create VM for desktop delivery master image, as follows:

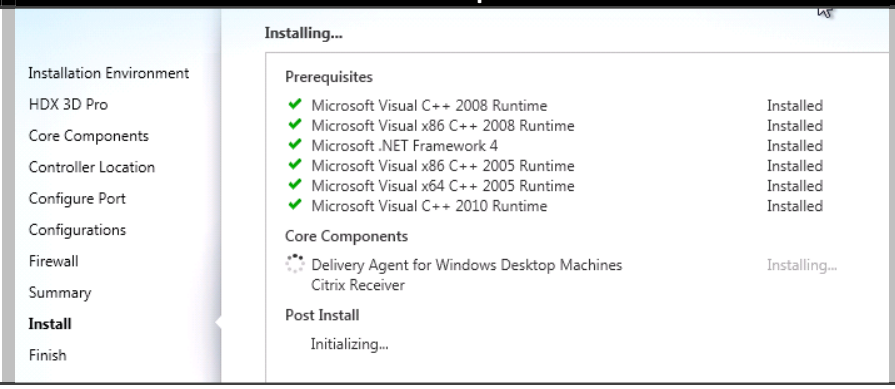
- Freshly installed Windows 8 or Windows 7 OS
- Joined to the domain and activated
- DHCP assignment for IP address to cloned VMs

Note: You may choose to repeat the process, once for Windows 8 and another time for Windows 7, if you want to deliver both types of desktops. The instructions remain the same.

#	Screen capture	Instructions
		Insert the XenDesktop 7.5 DVD in VM2 (Table 1, Windows 8 client meeting pre-requisites above) and launch the Installation Wizard. It automatically detects the OS type and shows relevant options. Select **Virtual Delivery Agent for Windows Desktop OS** and click **Next**

#	Screen capture	Instructions
		Accept the **default** selection and click **Next**. We select the first option (default value), because we will create cloned VMs using this master image.
		Accept the **default** selection and click **Next**. We skip the HDX 3D Pro VDA for purpose of this guide.
		Accept ***default***, click **Next**. Virtual Delivery Agent allows this desktop to communicate with the broker (Controller) and the end user (Receiver). Citrix Receiver on master image is optional
		If using MCS, the Controller address is auto-configured. Click **Add,** and **Next** ✓ Enter the complete hostname (FQDN) for the Controller address, if enter manually.

#	Screen capture	Instructions
		Accept the **default** selection and click **Next**. This installs all the necessary components for the Delivery Agent.
		Accept the **default** selection and click **Next**. Windows Firewall is configured automatically. For this exercise, manually ***disable*** any non-Windows Firewall or security apps.
		Click **Install** to start the installation. The machine needs to reboot after some of the components have been installed. The installation continues automatically after reboot.
		Please wait while the machine configures Windows and reboots. Do not turn off the computer.

#	Screen capture	Instructions
		Installation continues automatically after reboot. After installation succeeds, do the following: 1. *Restart* the machine 2. *Install* necessary user apps, if any 3. *Shut* down virtual machine

Install Delivery Agent on the Master Image (Server OS)

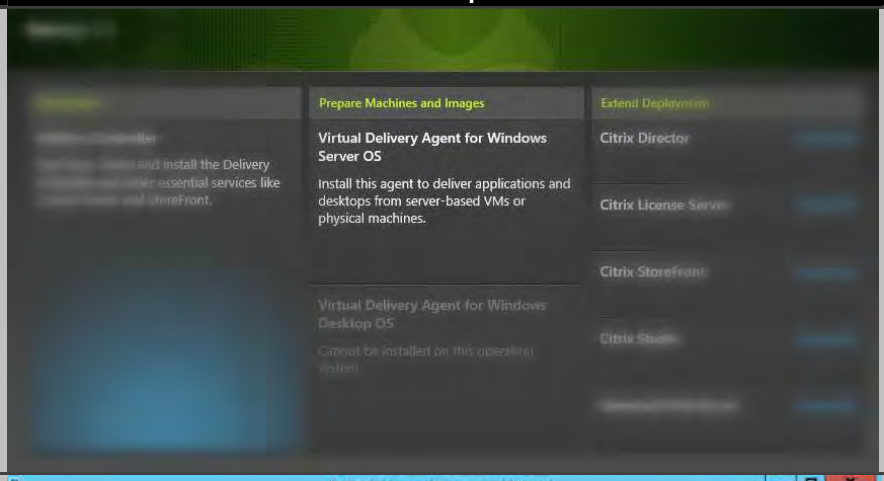
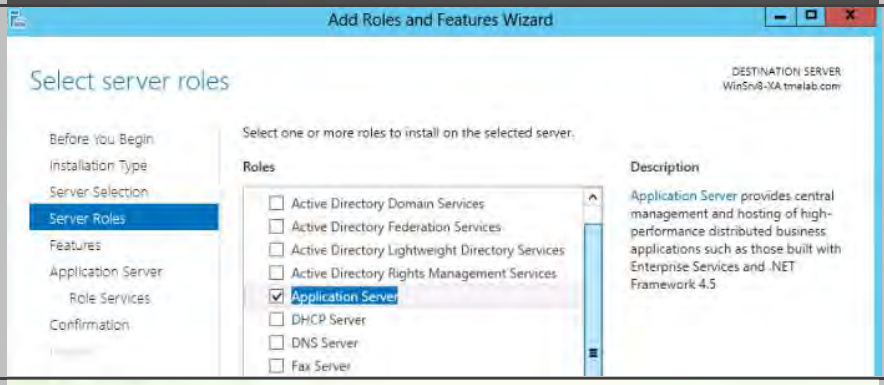
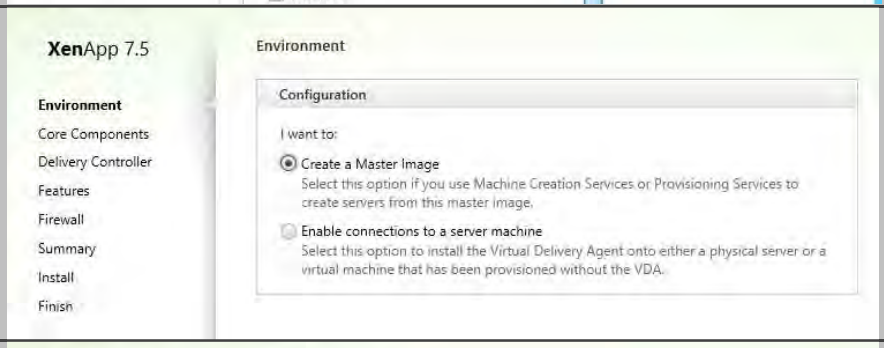
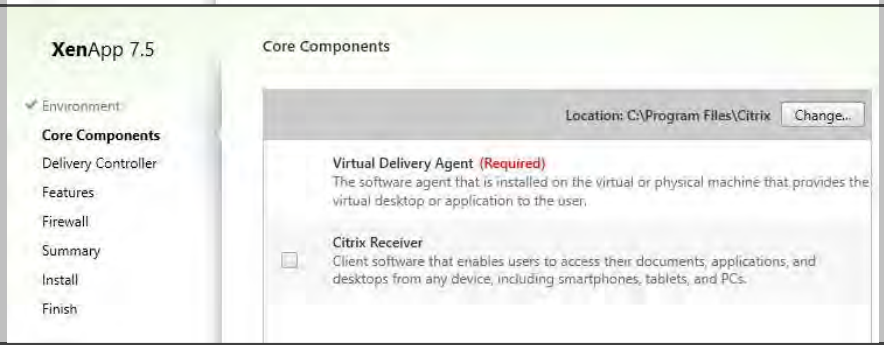
Before we publish applications or hosted-shared desktops, we must prepare a Windows Server with the necessary applications installed. The Delivery Agent is installed on this server to create a Master Image. Depending on the end-user requirements, you install the Delivery Agent in one of two modes: to deliver applications from the server itself (no replication) or to be replicated (by MCS) into server VMs that deliver apps.

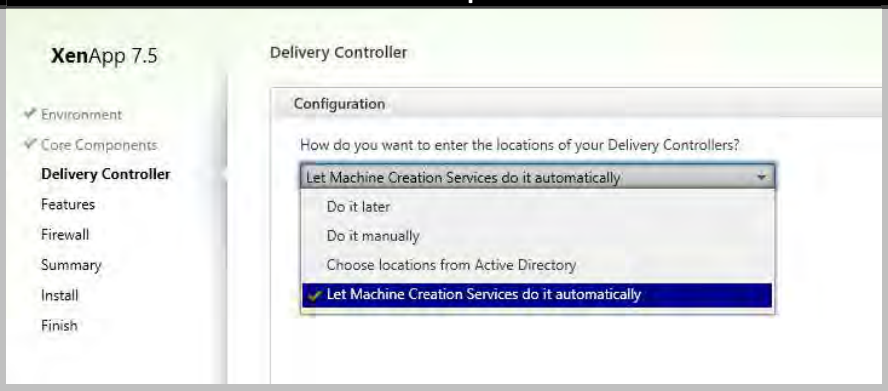
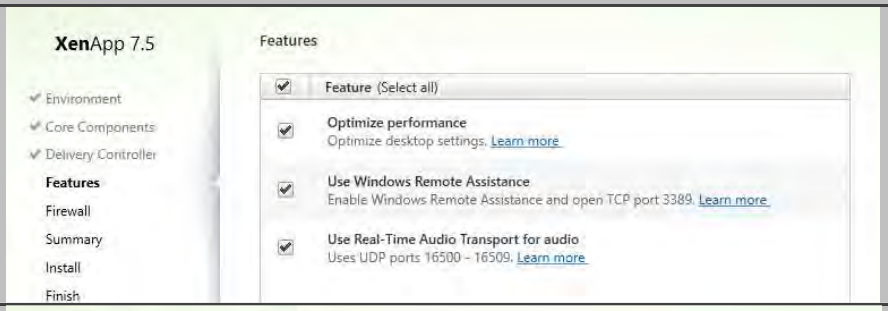
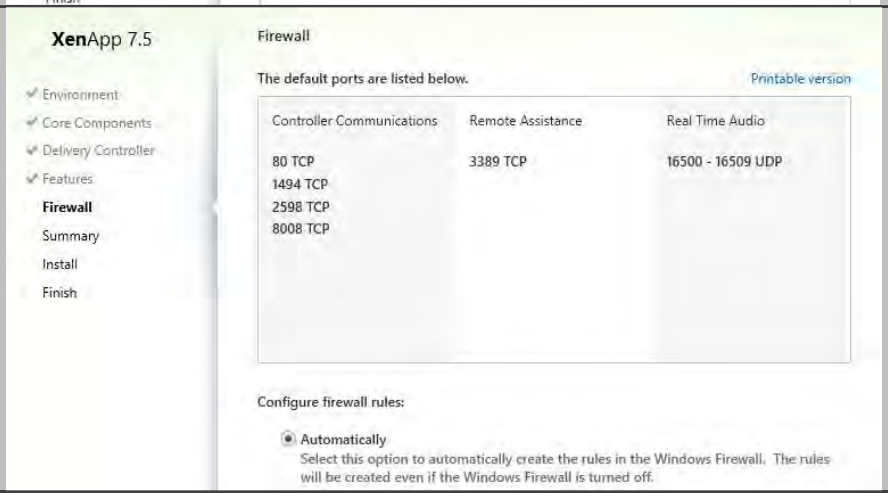
Your account must have local administrator privileges and be a domain administrator in the Active Directory.

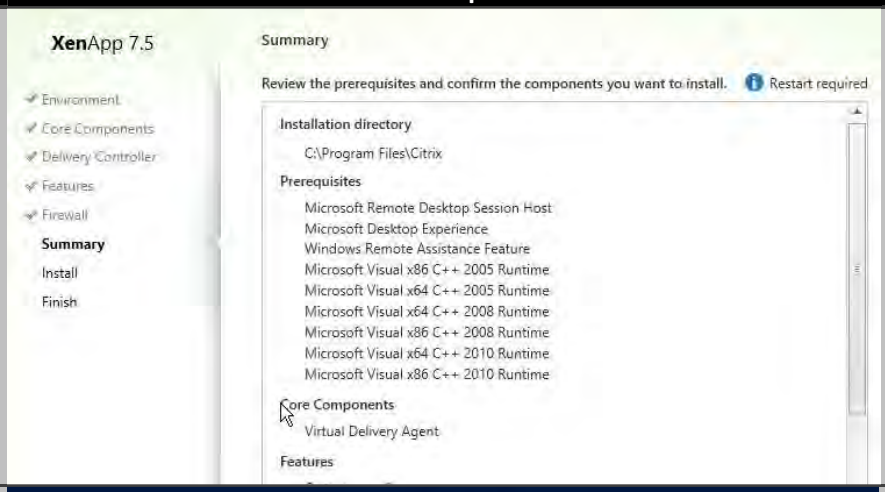
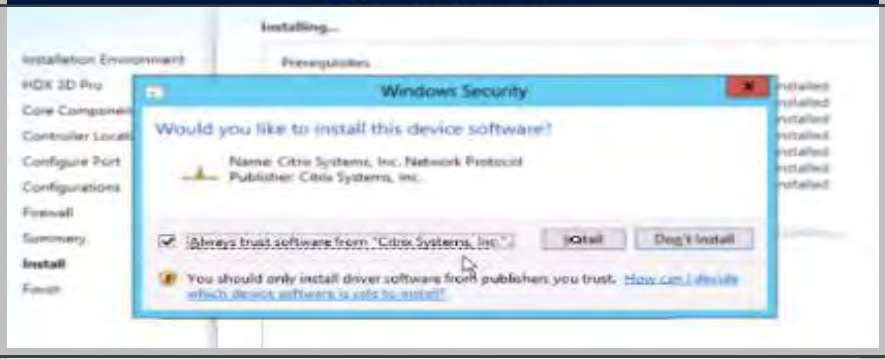
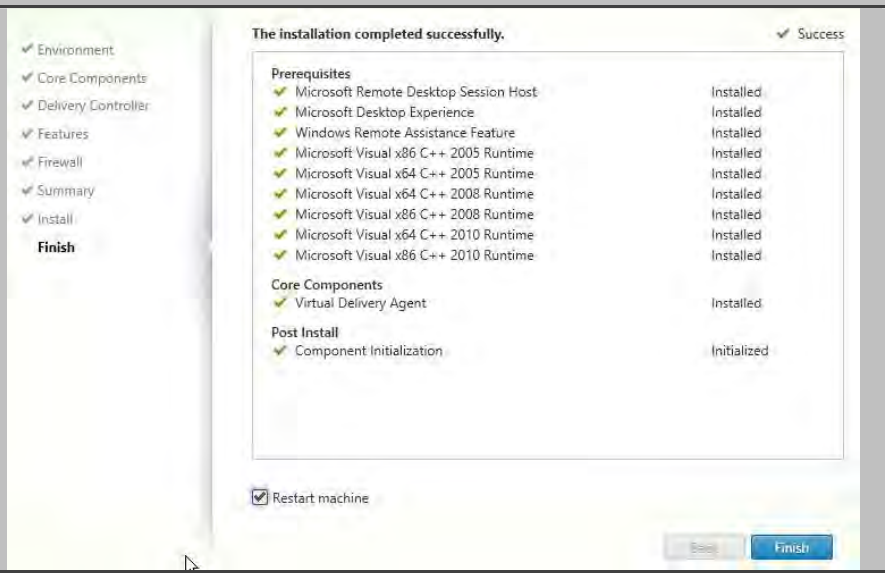
Use a Server OS template to create VM for application delivery master image, as follows:

- Freshly installed Windows Server 2008 R2 SP1 or Windows Server 2012
- Joined to the domain and activated
- DHCP assignment for IP address to cloned VMs

Note: You may choose to repeat the process, once for Windows Server 2012 and again for Windows Server 2008 R2, if you want to deliver apps from both platforms. The instructions remain the same.

#	Screen capture	Instructions
		Insert the XenDesktop 7.5 DVD into VM4 (Table 1, Windows Server 2012 meeting prerequisites) and launch the *Installation* Wizard. ✓ You may need to install **.Net 3.5 framework** before the installer can continue
		If framework is required, go to the Windows Server 2012 *Server Manager* and add the **Application Server** role. Select .Net Framework 3.5 when installing this role. Once the role is added, restart the Delivery Agent installation wizard
		Accept the **default** selection and click **Next**. We select the first option (default value), because we will create MCS-cloned VMs using this master image.
		Accept the **default** selection and click **Next**. Installing Citrix Receiver on master image is optional. You may **deselect**, since this server will only publish apps

#	Screen capture	Instructions
		Select **Manually** and enter the hostname (FQDN) for the Delivery controller. Click **Add** and **Next** ✓ Notice how the new intelligent configuration validation feature confirms accuracy of controller details and saves us time later.
		Accept the **default** selection and click **Next**. This installs all the necessary components for the Delivery Agent.
		Accept the **default** selection and click **Next**. Windows Firewall is configured automatically. For this exercise, manually ***disable*** any non-Windows Firewall or security apps.

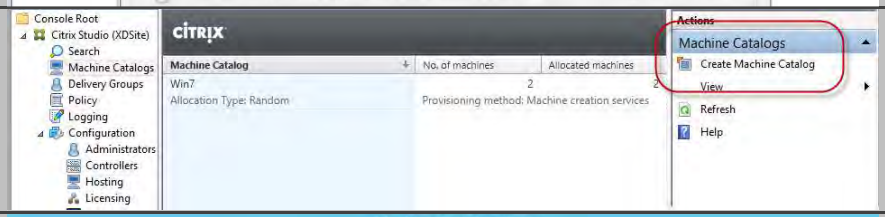
#	Screen capture	Instructions
		Click **Install** to start the installation. The machine needs to reboot after some of the components have been installed. The installation continues automatically after reboot.
		Please wait while the machine configures Windows and reboots. Do not turn off the computer.
		Installation continues automatically after reboot. At some point, Windows security may ask you to confirm device driver installation. If you accept, check the box **Always trust software from Citrix Systems Inc** and click **Install**
		After installation succeeds, do the following: 1. *Restart* the machine 2. *Install* the necessary user apps 3. *Shut* down virtual machine

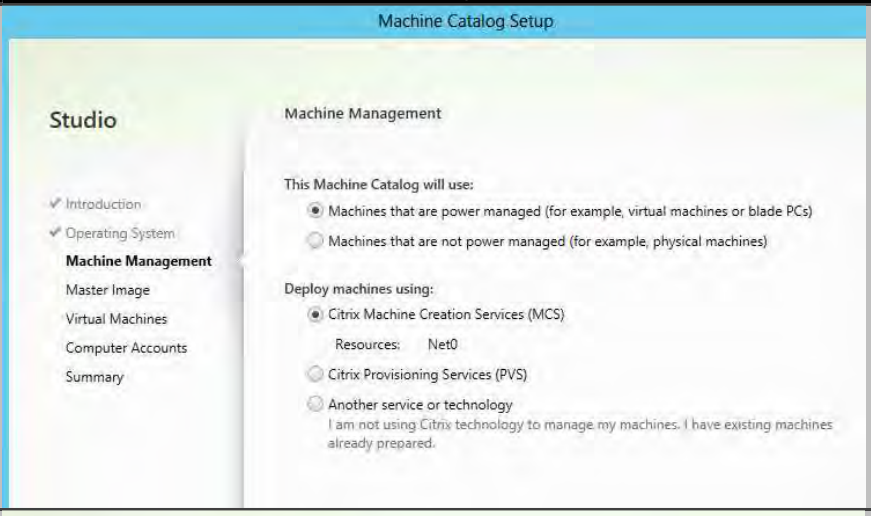
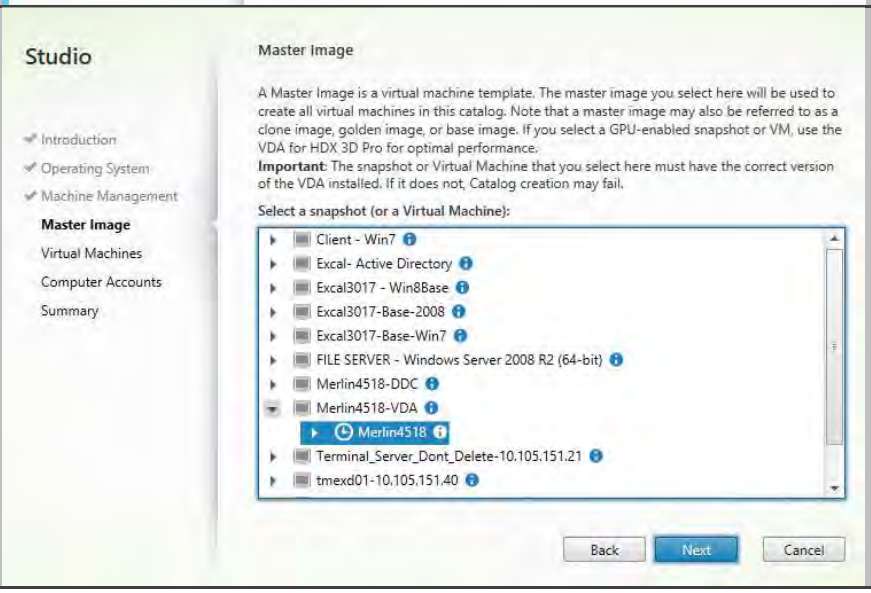
Step 2: Creating the machine catalog

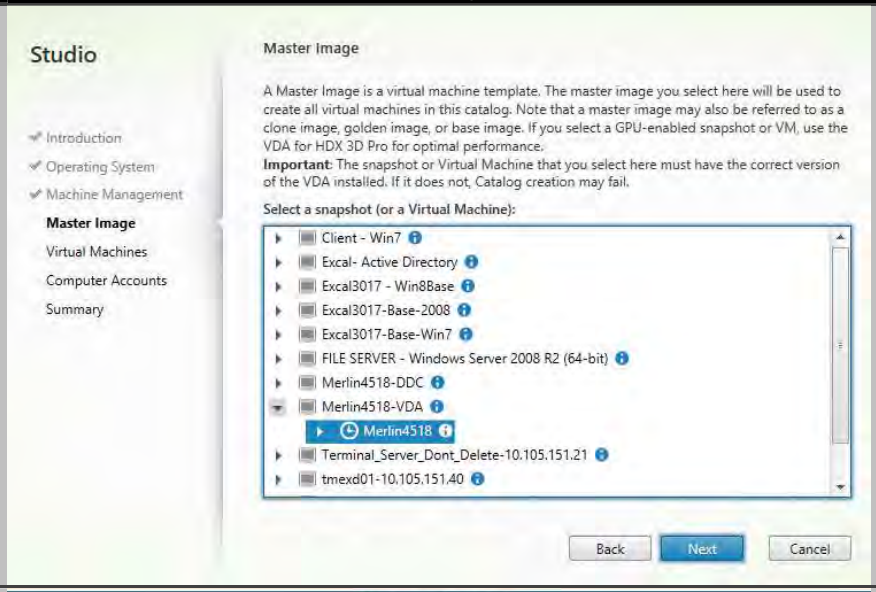
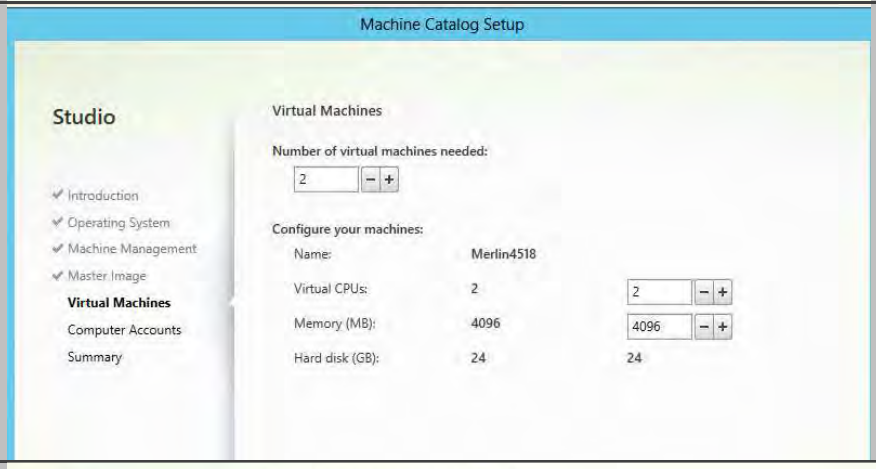
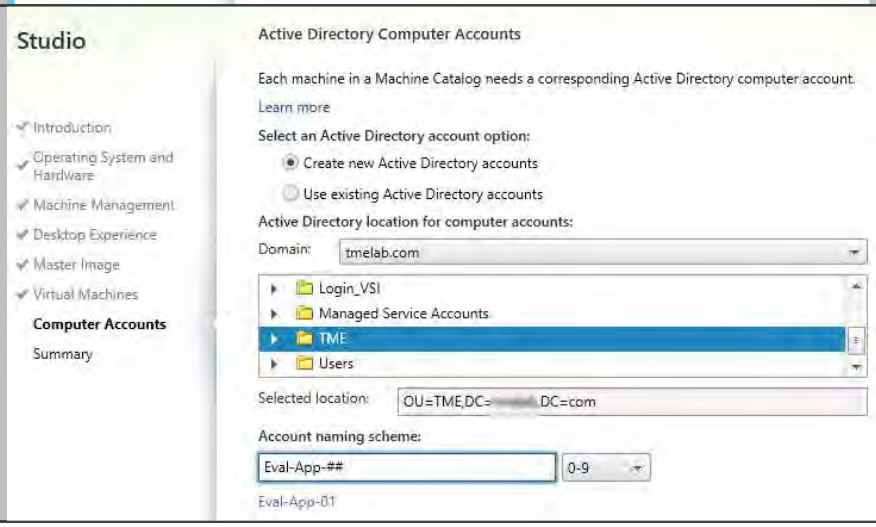
Create Machine Catalogs

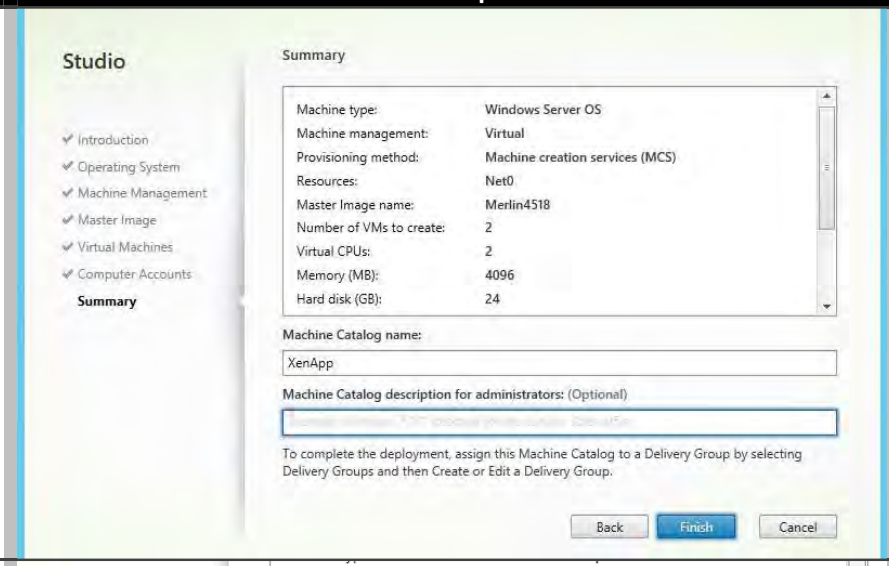
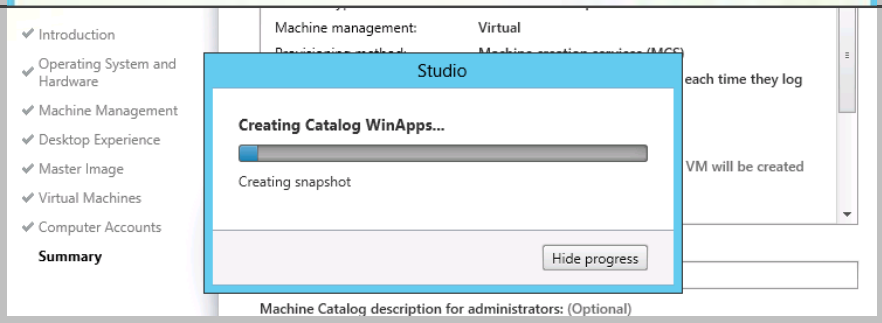
Collections of desktops or physical computers are managed as a single entity called a machine catalog. To deliver desktops and applications to users, the *machine administrator* creates a catalog of machines and the *assignment administrator* allocates machines from the machine catalog to users by creating delivery groups.

Your account must have local administrator privileges and be a Domain Administrator in the Active Directory.

#	Screen capture	Instructions
		Now that the master image is ready, we can return to complete Step 2 of the First Run wizard Click **Create Catalog**
		✓ If First Run wizard is no longer available, use **Create Machine Catalog** wizard to launch the workflow.
		If you wish to deliver *server hosted desktops* or *apps*, select **Windows Server OS**. If you wish to deliver *VDI desktops*, select **Windows Desktop OS.** Click **Next**

#	Screen capture	Instructions
		Accept Virtual Machines and Machine Creation Services (MCS), which are the **default** selections, and click **Next**.
		Select the first option to deliver ‘random’ desktops from a pool of desktops. Click **Next** ✓ This step is not applicable for application delivery catalogs

#	Screen capture	Instructions
		Now we select the **Base Image** that we created previously, by navigating down the tree to the virtual machine of the master image created in Step 1.1
		Select **how many** cloned VMs are needed in the pool. Leave everything else at **default** and click **Next**
		Select the **Computer** OU to place the newly created VMs. Provide an account naming scheme, say **Win8-##** (where MCS replaces ## with VM sequence number) Leave everything else **default** and click **Next**

#	Screen capture	Instructions
		Provide a name for the catalog, and optionally, a description to identify the type of machines in this catalog Click **Finish** to start the machine creation process
		Machine Catalog creation takes about 15-25 minutes depending on the number of machines and type of underlying hardware. Dashboard **Action** pane (click **Studio** in left pane) shows task status. **Wait** for task to complete before creating delivery groups.

To create machine catalog based on Server OS (for hosted shared desktops and applications), follow the same steps above making suitable selection for Server OS. Create two machines, one for testing application delivery and another for hosted-shared desktops.

Step 3: Publish desktops and applications

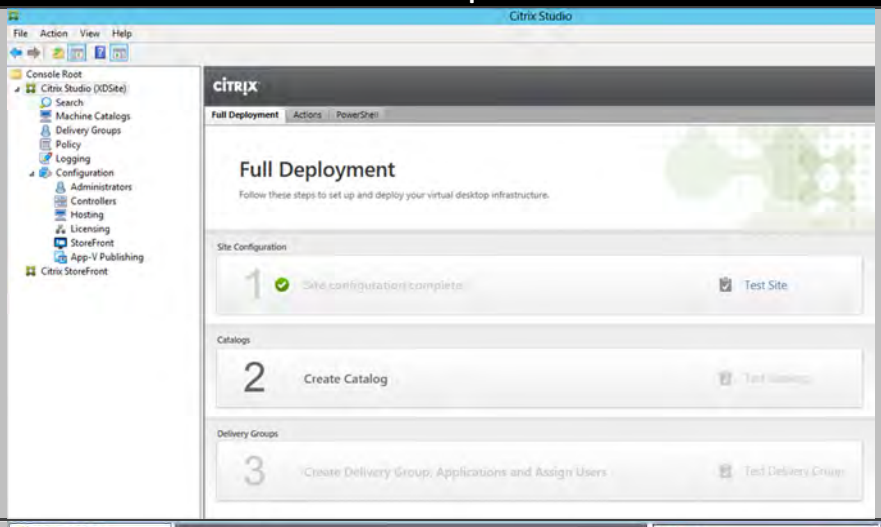
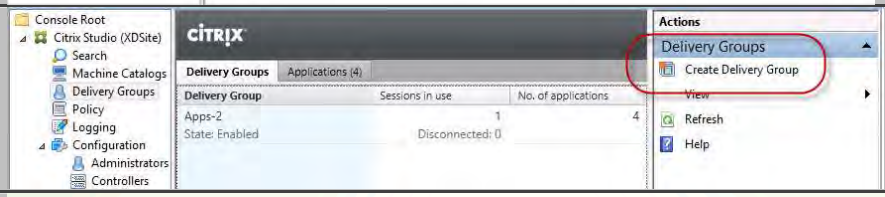
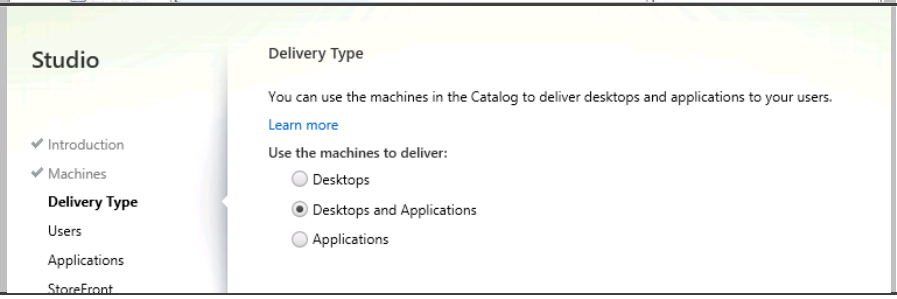
While the workflow to publish desktops and applications is more or less similar, for simplicity we will look at these separately.

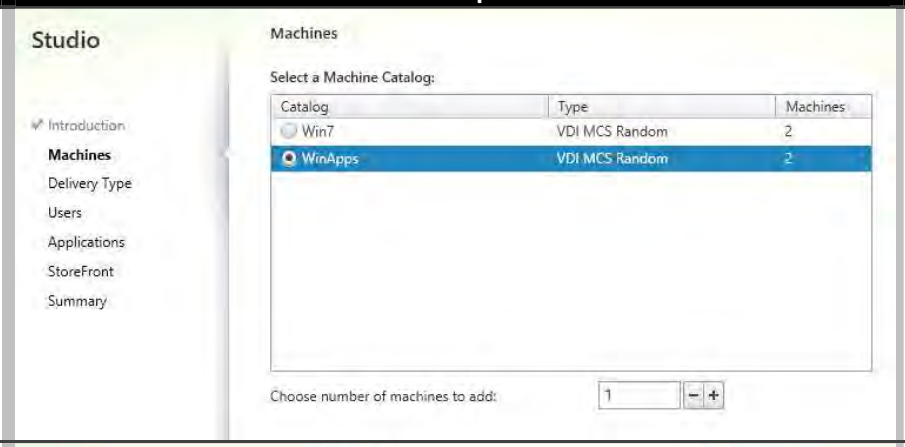
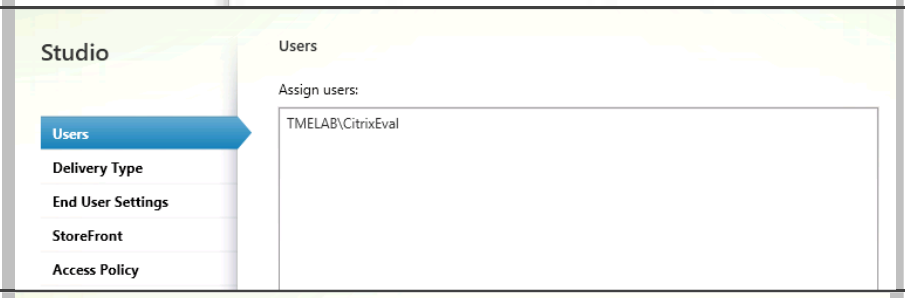
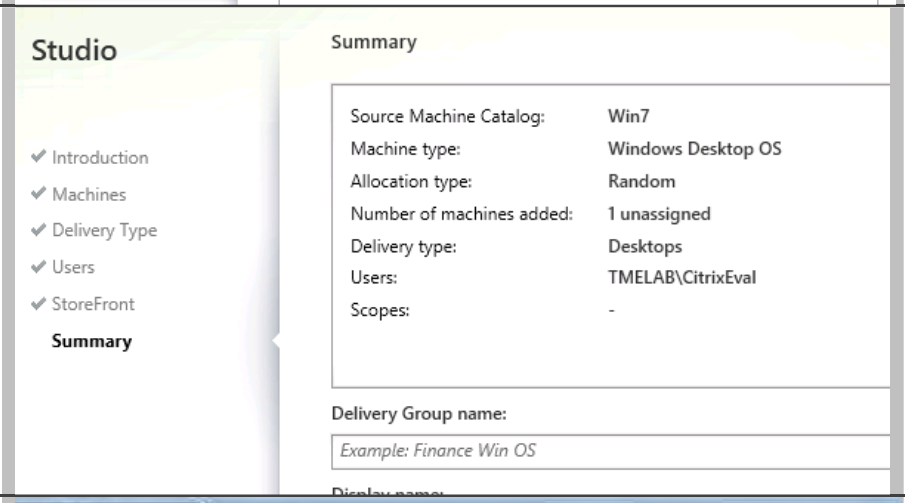
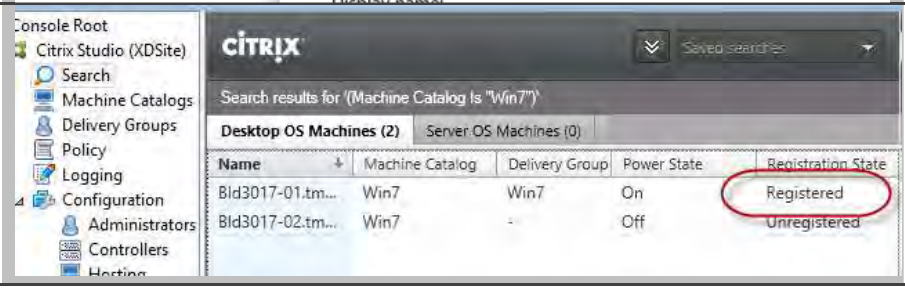
To publish applications in a unified infrastructure, you create and add applications in Studio to make them available to delivery group users. Using Studio, you will first have to configure a site, create and specify machine catalogs, and then create delivery groups within those machine catalogs. Delivery groups are then used to determine which users will have access to the applications you decide to publish.

For more details on how application publishing has evolved with XenDesktop 7.5 release, please see *Important Information for XenApp Administrators* in the Administrator's Guide.

Create Desktop OS Delivery Groups (VDI)

The first delivery group we create is for VDI desktops, using desktop OS. Create a new Windows 8 machine catalog using the snapshot created in *Step 1.1* as the Base Image. Follow the steps in *Step 2: Create Machine Catalogs,* selecting **Windows Desktop OS** as the machine type.

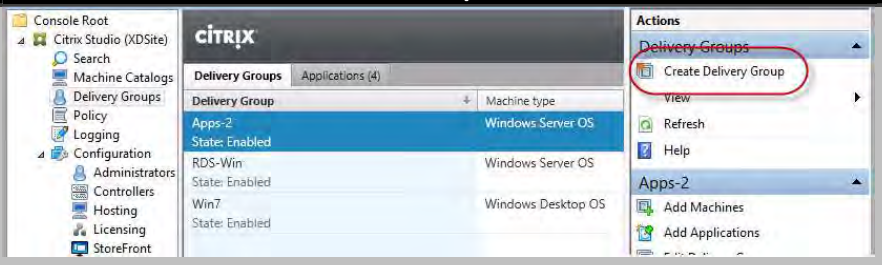
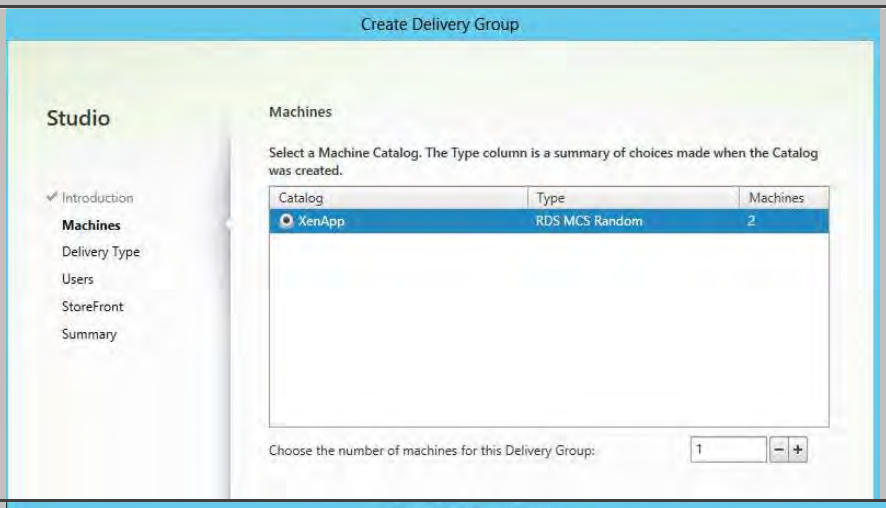
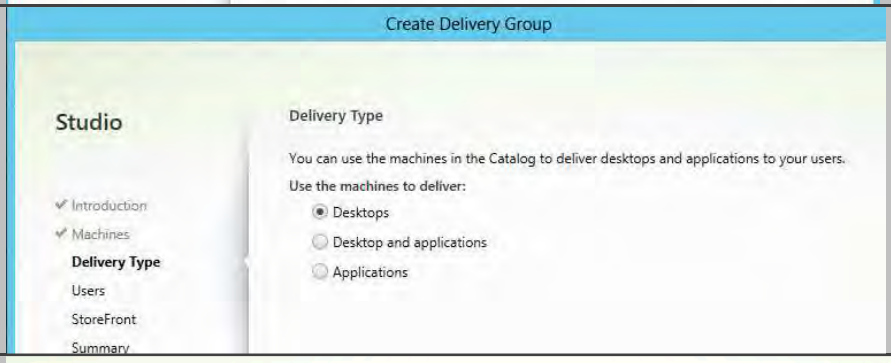
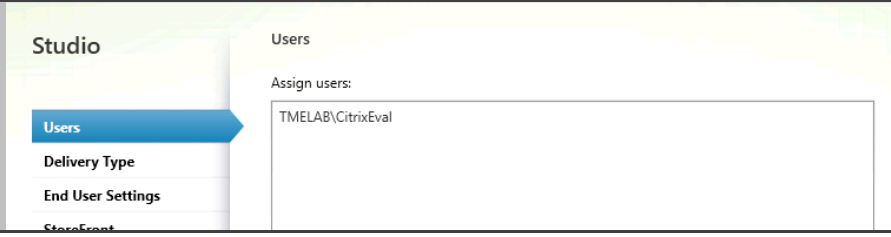
#	Screen capture	Instructions
		Step 3 in the First Run wizard is to create Delivery Groups. Click #3, Create a Delivery Group, Applications and assign users
		✓ If First Run wizard is no longer available, use **Create Delivery Group** wizard to launch the workflow from Studio.
		Select the Delivery type for this group: Desktops only, Apps only, or both. For this step, we select "Desktops and Applications" and click **Next**

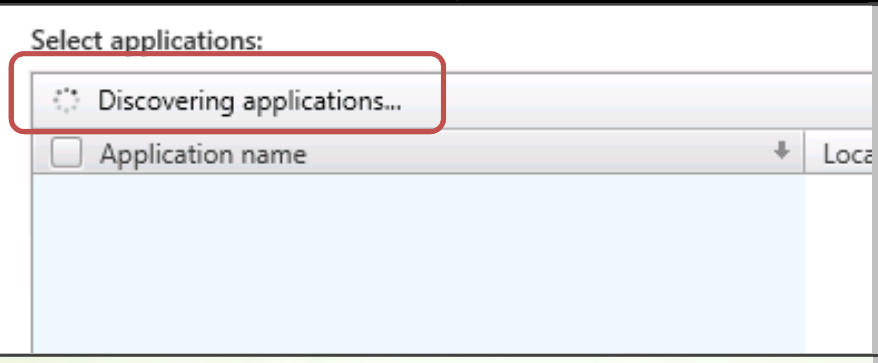
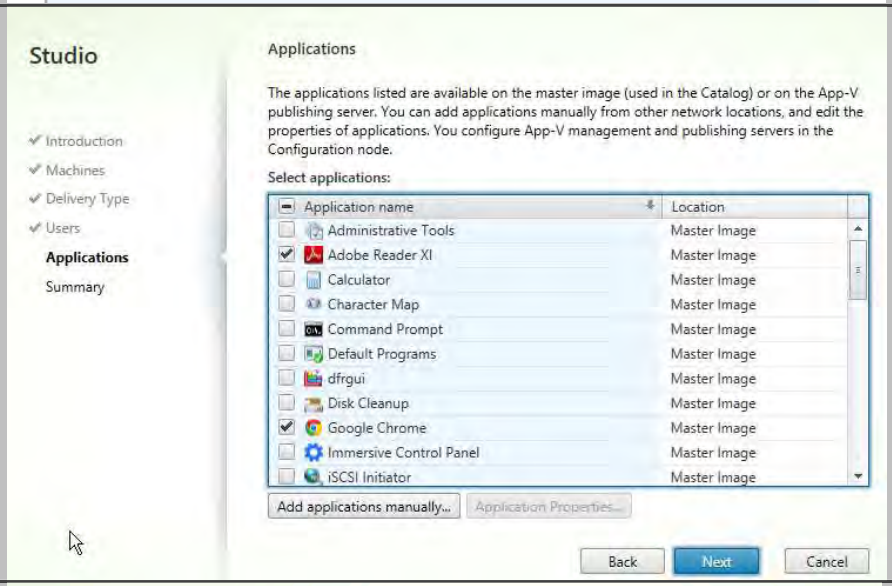
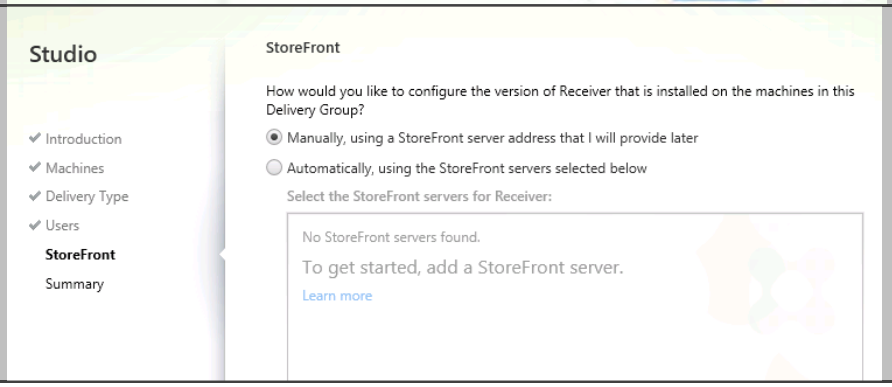
#	Screen capture	Instructions
		Select the Desktop machine catalog, described as **VDI MCS Random** in the table. The Wizard displays the total number of machines available in each catalog. Click to add the number of machines you want in the group. In this evaluation, we only add 1 machine.
		Assign the user group from Active Directory with permission to use the machines in this group, i.e. *CitrixEval*.
		The last part is to enter a **display name** (the label shown in Citrix Receiver) and a **delivery group name** (more descriptive, to identify the group in management console). In this example, we use a simple Display Name "Win8", since we are serving Windows® 8 desktops.
		The Delivery Group is created in a couple of minutes. The VM is automatically turned on. Registration state changes to *Registered* once it registers with controller.

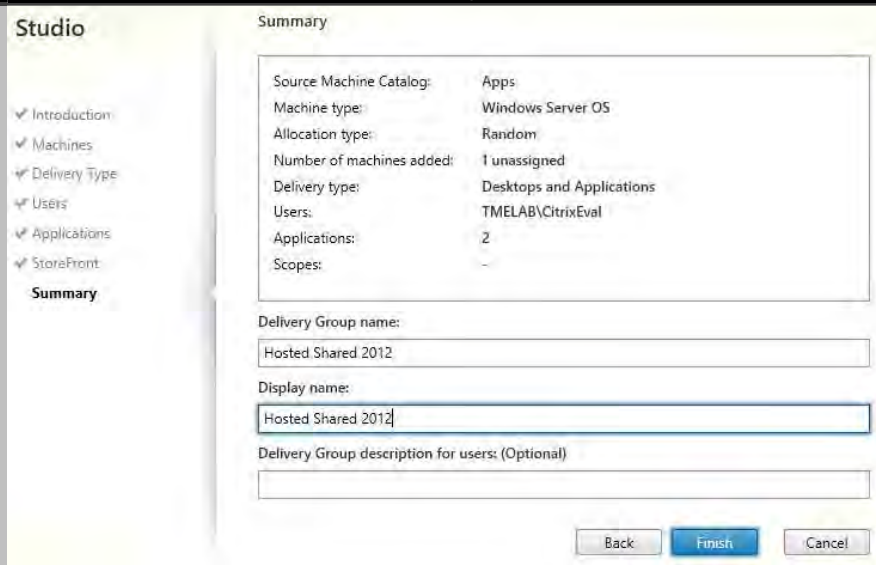
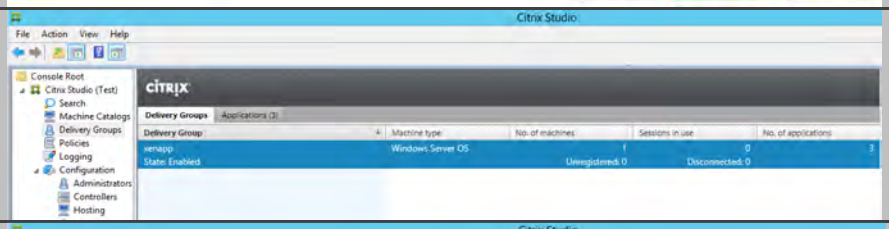
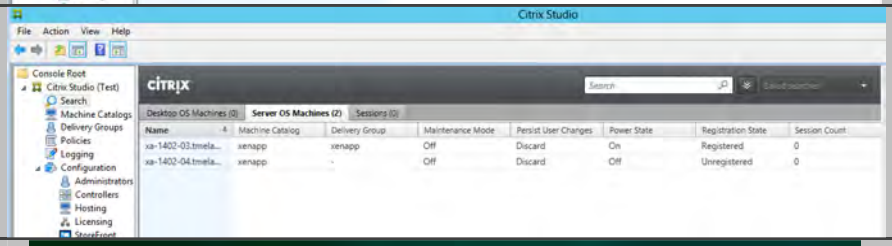
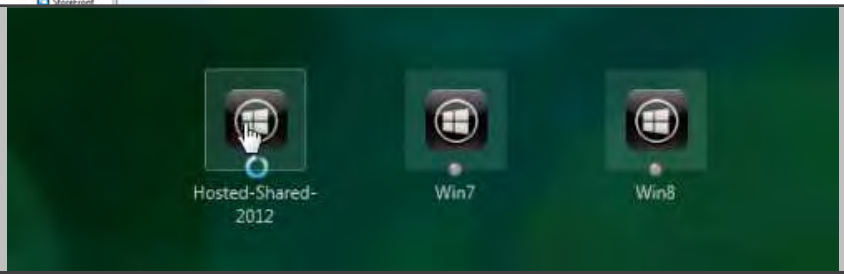
Create Server OS Delivery Groups

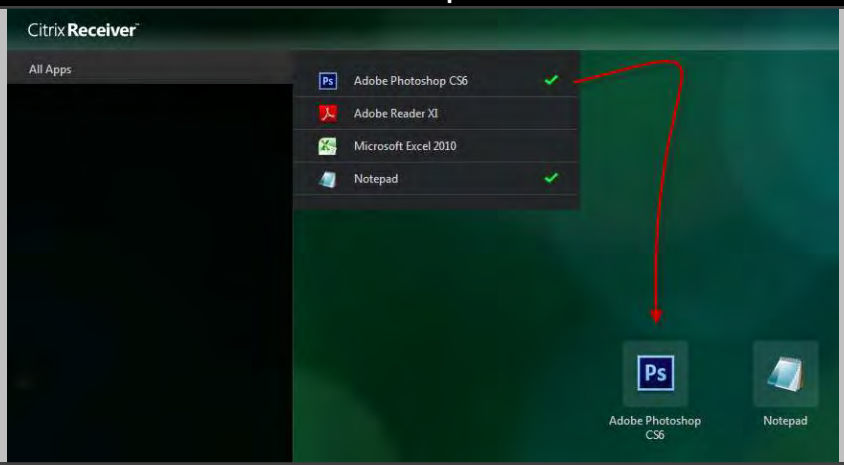
Delivery groups based on Server OS can deliver both hosted-shared desktops as well as applications. Create a new Windows Server 2012 machine catalog using the snapshot created in *Step 1.1* as the Base Image. Follow the steps in *Step 2: Create Machine Catalogs,* selecting **Windows Server OS** as the machine type this time.

Once the catalog is created, come back here to create application delivery group.

#	Screen capture	Instructions
		The First Run wizard may no longer be available. Go to **Studio > Delivery Groups > Actions (on right pane) > Create Delivery Group** to launch the workflow.
		Select the Server machine catalog, described as **RDS MCS Random** in the table. The Wizard displays the total number of machines available in each catalog. Click to add the number of machines you want in the group. In this example, we only add 1 machine.
		Select **Desktops and Applications** as delivery type. ✓ This will allow unified delivery of both desktops and apps from the same server OS.
		Assign the user group from Active Directory with permission to use the machines in this group. Select *CitrixEval*, click **Next**

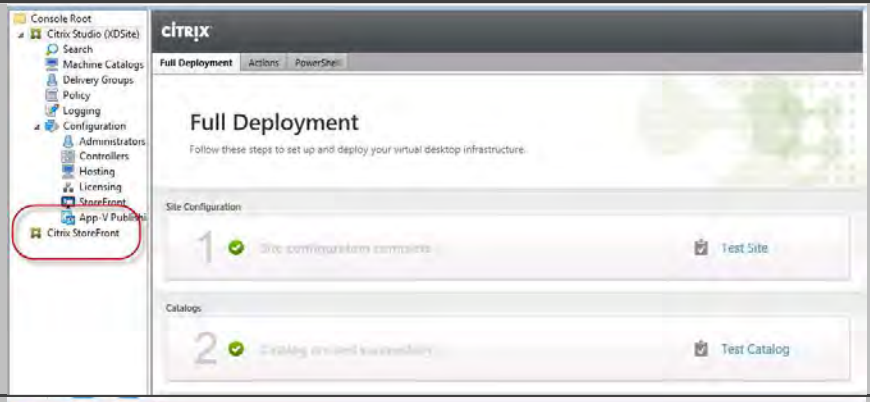
#	Screen capture	Instructions
		The wizard now lists all applications on the given machine catalog that can be published. The Discovery process may take a few minutes. You can also add applications manually if needed.
		XenDesktop 7.5 offers bulk publishing of apps, saving time and making it simple. Select the apps you wish to publish, and click **Next**
		Click **Next** on the StoreFront configuration, accept defaults. StoreFront site is automatically created.

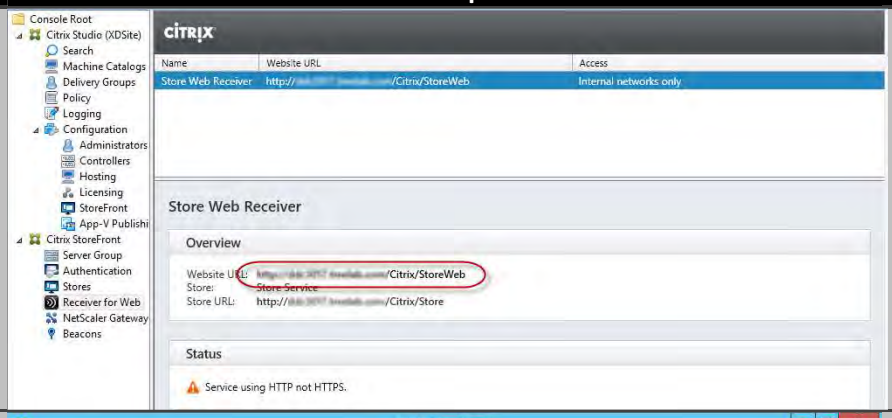
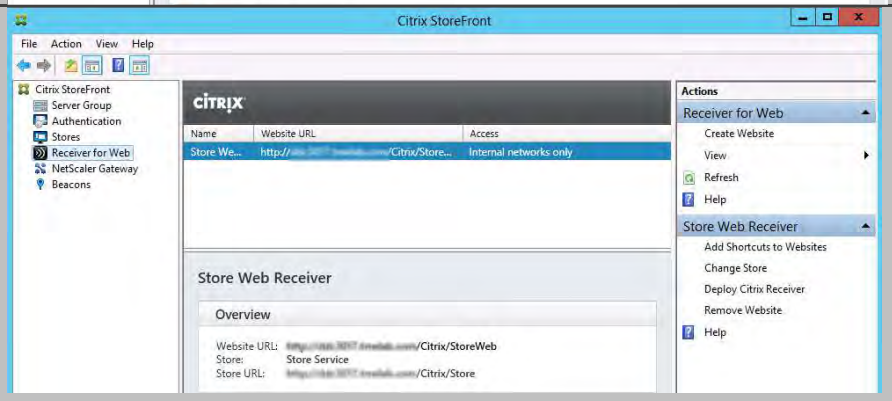
#	Screen capture	Instructions
		The last part is to enter a **display name** (the label shown in Citrix Receiver) and a **delivery group name** (more descriptive, to identify the group in management console). In this example, we use a simple Display Name "*Hosted Shared 2012*", since we are serving hosted-shared desktops based on Windows Server 2012.
		The Delivery Group is created in a couple of minutes. Double Click the group name to view details
		The VM is turned on and registers with the controller. Registration State changes to *Registered*
		In *Step 5* we see how to use Citrix Receiver to launch apps and desktops. The newly created hosted-shared desktop will be available in Receiver, alongside the VDI desktops.

#	Screen capture	Instructions
		The apps published in the same Delivery Group, using a common unified console, are also available in Citrix Receiver. ✓ In XenDesktop 7.5, you get single-click bulk app publishing. No need to repeat the task of providing application details for each app, one by one.

Step 4: Configuring the StoreFront Server

Citrix StoreFront is the next generation of Web Interface, and enables self-service provisioning of desktops and applications, among a host of new functionality. Storefront authenticates users and manages the store of desktops and applications. In this evaluation, Storefront runs on the same server as the Controller (VM1).

#	Screen capture	Instructions
		Citrix StoreFront management console is now integrated with Studio ✓ StoreFront console is also available standalone.
		XenDesktop 7.5 comes with a **default store** that is available once the first Delivery Group is created. Web store is in the form: http://<servername>/Citrix/StoreWeb

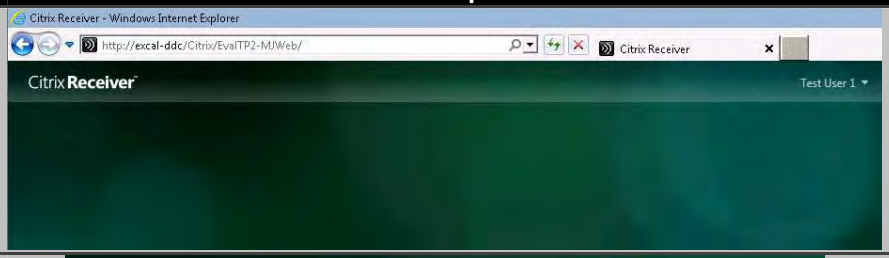
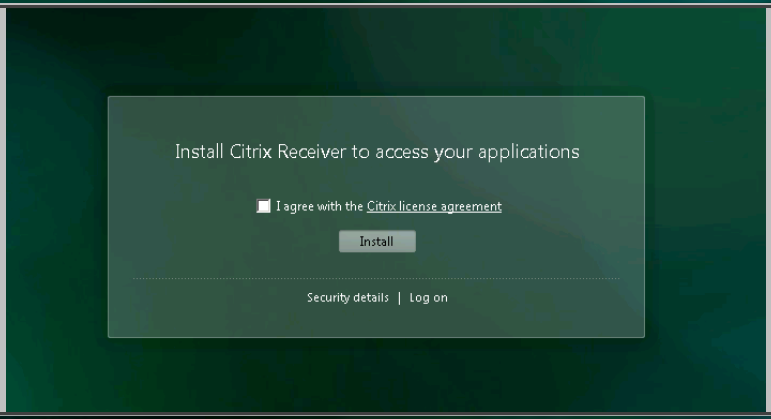
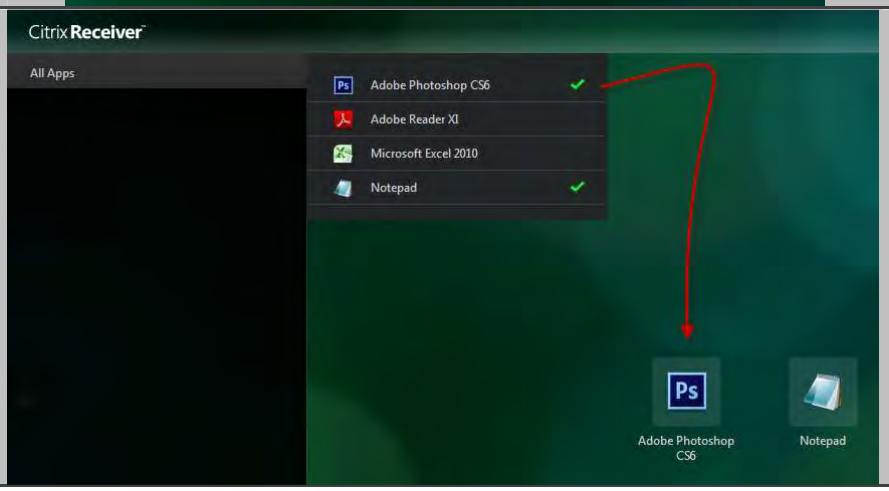
#	Screen capture	Instructions
		For evaluations, the auto-created store quickly allows access to the environment. No further configuration needed after the Delivery Groups are set up. ✓ Please refer admin guide if you wish to create a custom StoreFront site.
		StoreFront console is also available standalone ✓ As a best practice, StoreFront services can be installed on a separate server from Delivery controller. For this evaluation, we used single server.

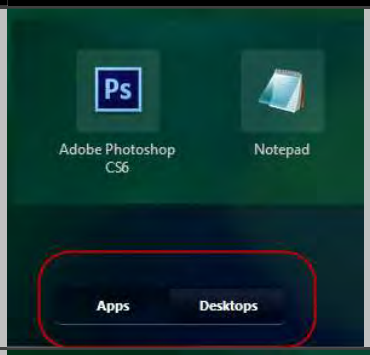
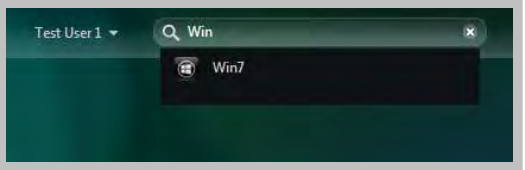
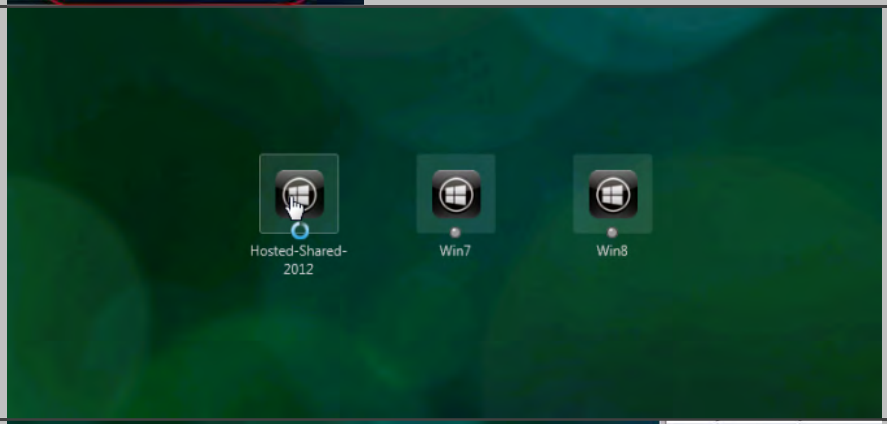
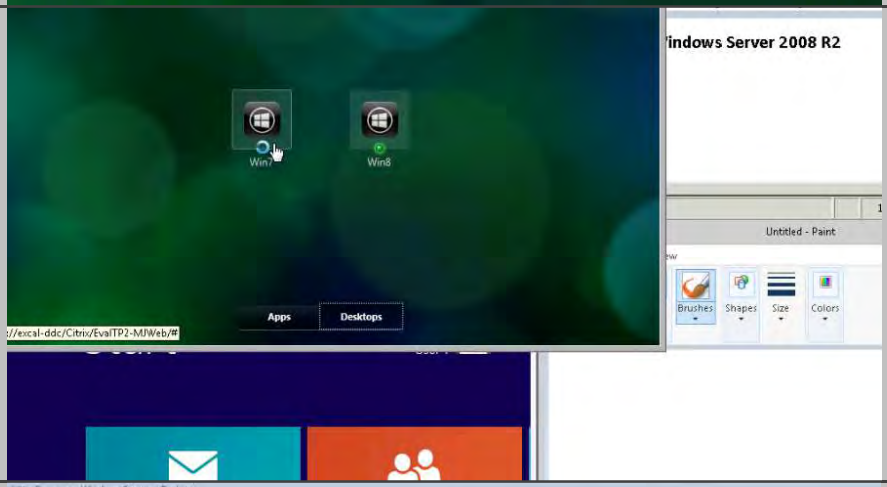
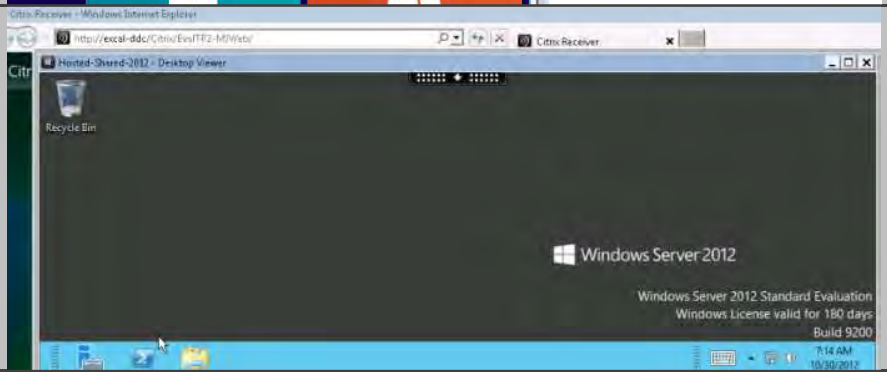
Step 5: End-user session launch (Citrix Receiver)

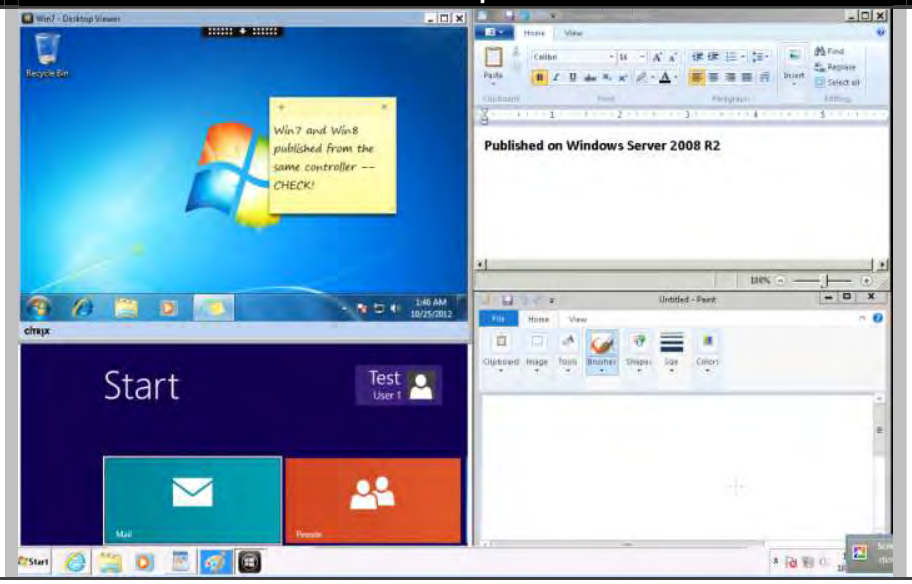
We now use VM #6 (from Table 1) to launch the desktops and apps on a client and evaluate the end-user experience.

Launch published desktops and applications using Receiver

Citrix Receiver is the unified access client to access applications and desktops from StoreFront. With a user account, you will access those applications and desktops.

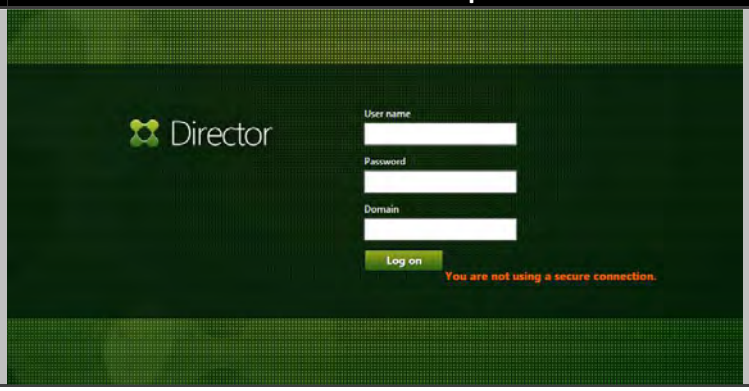
#	Screen capture	Instructions
		On a client machine, Windows 7 in this case, open a browser and go to the default **Storefront URL** http://<yourservername>/Citrix/StoreWeb
		If **Citrix Receiver** is not already installed on the client, you are prompted to install it. **Accept** the EULA, Click **Install** and follow the installation process. Return to the login page once it is installed.
		Login as a domain user. Click the **+ sign** at the left edge of the screen, and click **All Apps** to see list of available apps. Click a few apps and **add** them to your self-service portal.

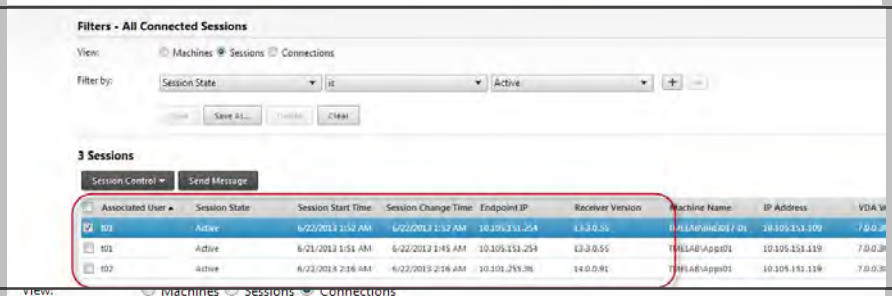
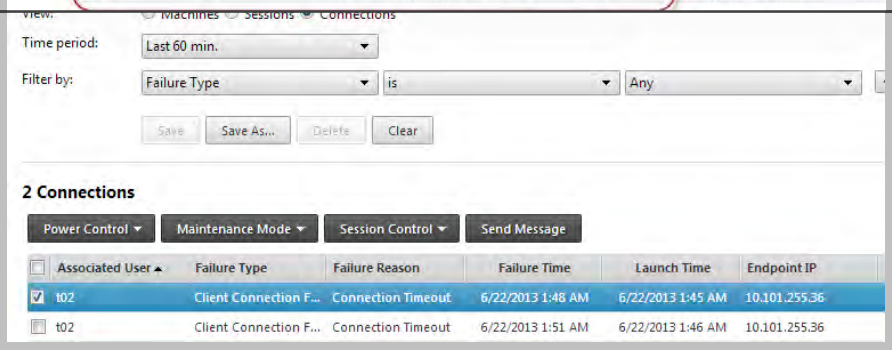
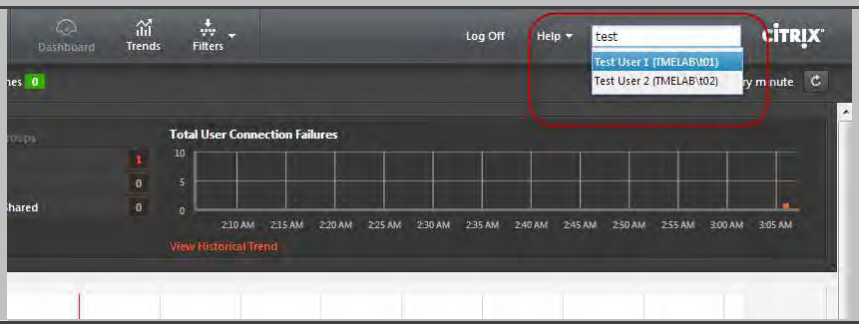
#	Screen capture	Instructions
	 	You can switch between your list of Apps and list of Desktops using the **selection bar at the bottom** of the screen. You can search for an app or desktop by name, using the **Search bar on top**.
		XenDesktop 7.5 allows you to provision and access hosted shared desktops and VDI desktops at the same time as hosted applications. In this example, *Win7* and *Win8* are VDI desktops, while *Hosted Shared 2012* is Server based, as the name suggests.
		XenDesktop 7.5 allows you to create hosted-shared applications from Windows Server 2012, in addition to Windows Server 2008R2 Follow the steps in this guide to create different machine catalogs using a Windows Server 2008R2 base image and a Windows Server 2012 base image.
		When you click the *Hosted Shared 2012* desktop icon, the desktop is a Windows Server 2012 desktop (as seen in this picture).

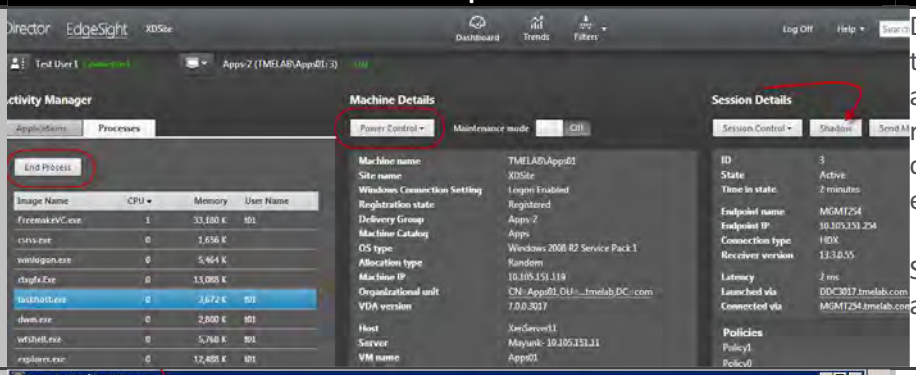
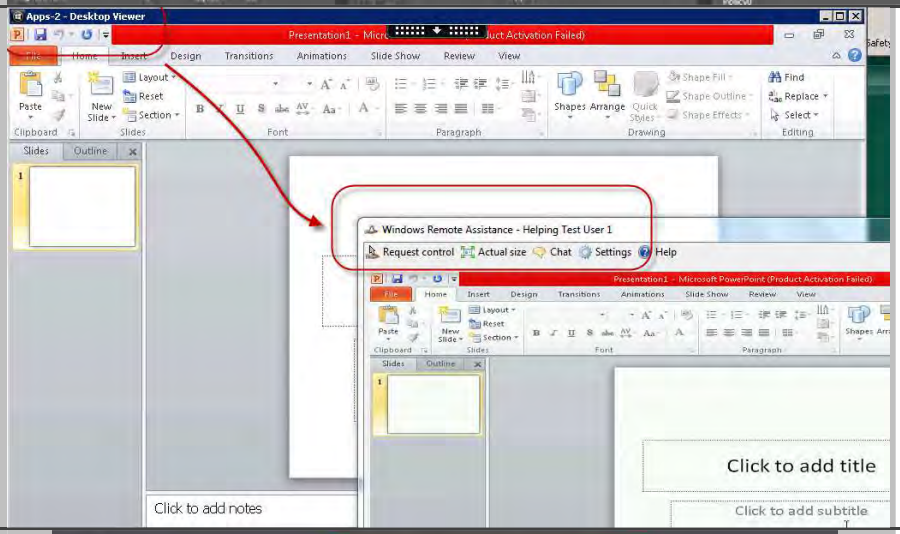
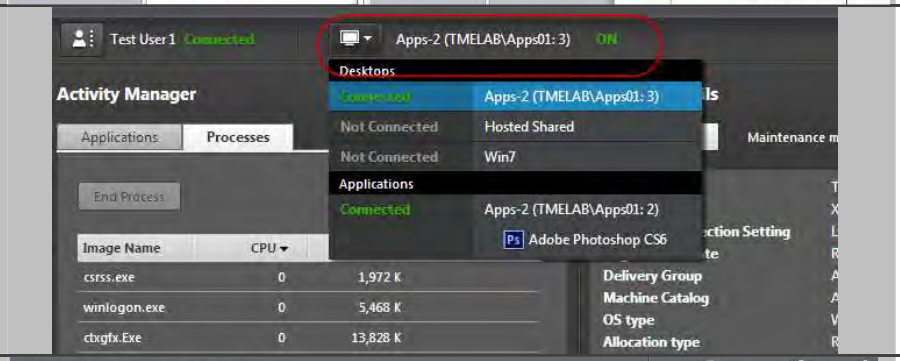
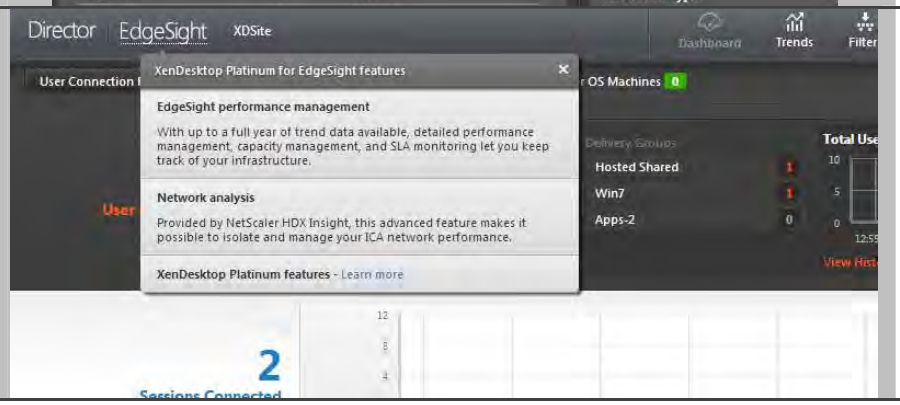
#	Screen capture	Instructions
		This is a screenshot of the following virtual resources delivered by XenDesktop 7.5 (clockwise, from top left): 1) Windows 7 desktop 2) App from Windows Server 2008 R2 3) App from Windows Server 2012 4) Windows 8 desktop

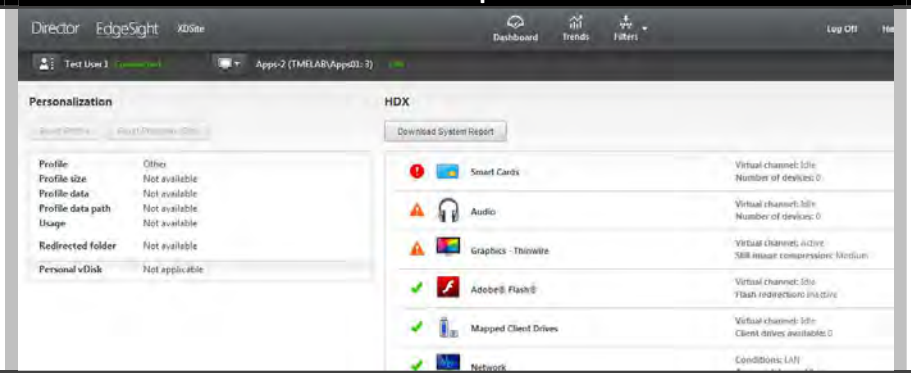
Step 6: Operations helpdesk and monitoring with Director

Director is completely redesigned for XenDesktop 7.5, intended for use by operations helpdesk and Citrix specialists. It provides great detail about user sessions and helps to quickly identify and resolve issues before they negatively impact end-user performance.

#	Screen capture	Instructions
		Access the Director console with this easy URL: http://<yourservername>/Director ✓ Director console can also be accessed from the Start Menu of the server

#	Screen capture	Instructions
		This is a snapshot of the Dashboard. It clearly shows relevant information, such as the connected sessions, failed sessions, average logon time, and so on.
		Click through on the dashboard to drill down into details of the parameter such as connection or session details, type of delivery group, etc.
		Failure reason, client version, server group, end-user IP, etc. help IT admin resolve any issues. Troubleshooting tasks such as Power or session control can be performed without leaving this console.
		If a particular user calls in to the helpdesk, quickly bring up their details on screen using the search facility

#	Screen capture	Instructions
		Detailed user information on the machine, the session, and also the processes running on the VM. IT staff can end a rogue process, for example, on behalf of user. Session shadowing is also available
		Once the user accepts the remote assistance prompt, IT can shadow the user session to help troubleshoot any end-point issues
		The drop-down on the user details page shows the various delivery groups entitled for the user, and connection status. Filter capabilities allow IT to focus on the relevant information.
		XenDesktop Platinum activates EdgeSight features for Director, such as historical analysis, modeling and trending. NetScaler Platinum activates HDX Insight to diagnose and improve ICA network performance

#	Screen capture	Instructions
		This discussion explores only a fraction of visibility offered by the new Director. Feel free to explore different pages full of goodies such as integrated HDX Monitor, personalization statistics, and so on.

Conclusion

This concludes your evaluation of XenDesktop 7.5 release.

Through this process, we learnt how to install a basic deployment of XenDesktop 7.5, configure a Studio site and create machine catalogs. Using delivery groups, we provisioned both Apps and Desktops from a single unified console, including full support for Windows 8.1 with high level of interactivity and graphics. Finally, we experienced the powerful monitoring, troubleshooting, and analytical features of Director that make it very simple to manage day-to-day operations of a large-scale virtualized desktop environment.

Note that this is a simplified guide intended for a quick evaluation of the product features, using a narrow scope of work. It does not replace the official Product Documentation on www.citrix.com

Now that you have completed these tasks and seen how a basic deployment works, use the XenDesktop 7.5 documentation to experience all the components and features available with this release, such as Rich Graphics using GPU cards, Windows media multicast support, HTML5 Receiver, configuration logging, delegated administration, App-V support, and so on.

Appendix

A few optional use-cases are covered in this section, to review the additional features in XenDesktop 7.5. These features require more advanced knowledge of the product and are not relevant to all users, so they were moved outside the main document instructions.

Application Virtualization with Microsoft App-V 5.0

(Source credit: Vidhesh Ramesh's blog on Citrix.com)

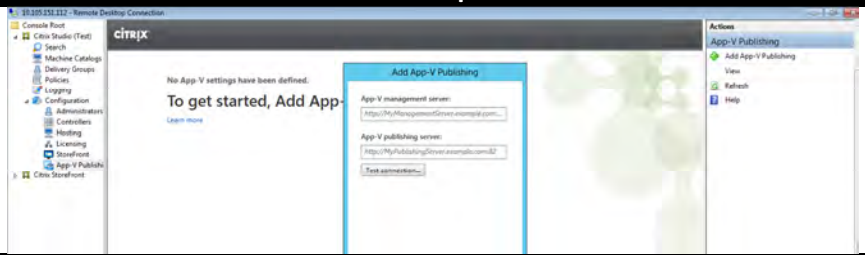
Here is a summary of the steps needed for deploying and using App-V applications in XenDesktop 7.5. Please see this whitepaper from Microsoft and Citrix for the detailed instructions.

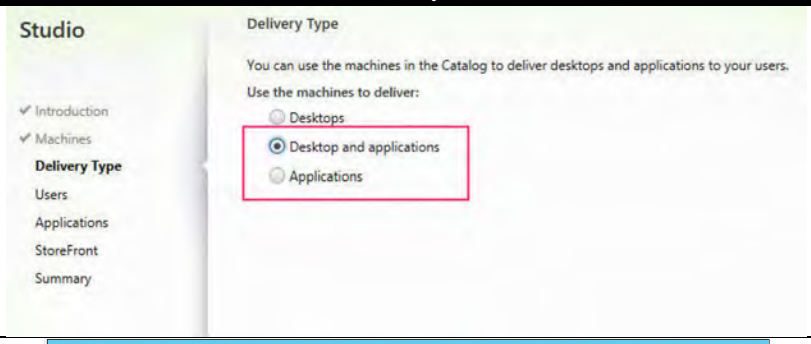
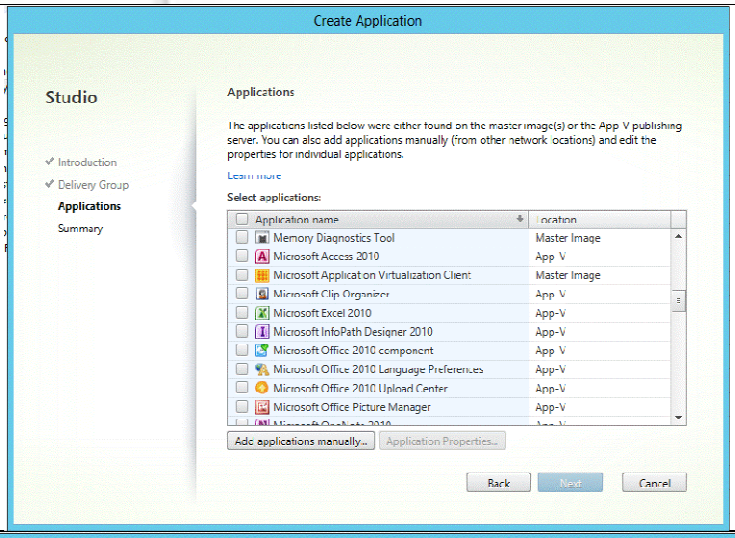
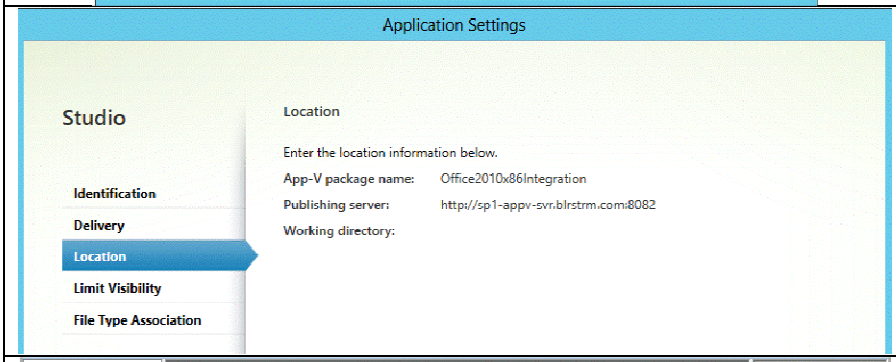
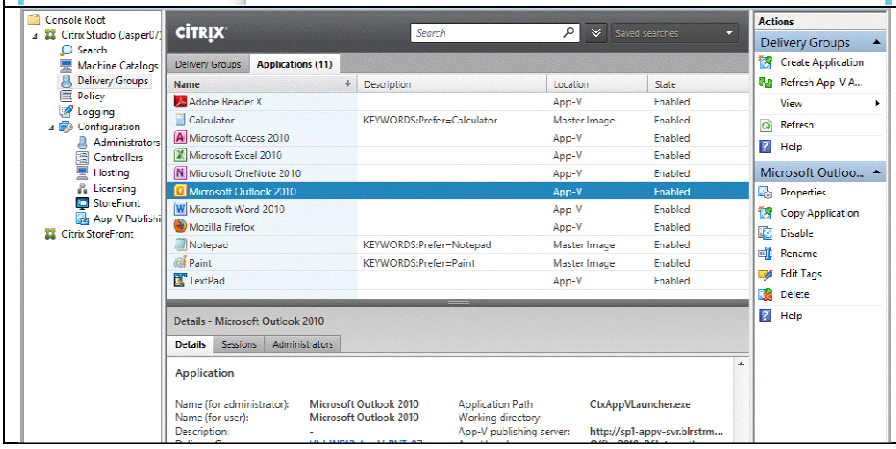
The components required for App-V Deployment are:

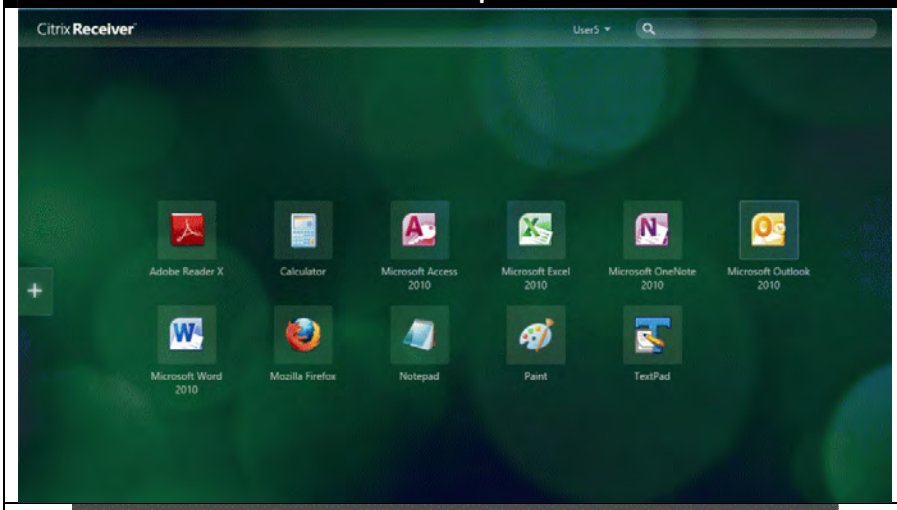
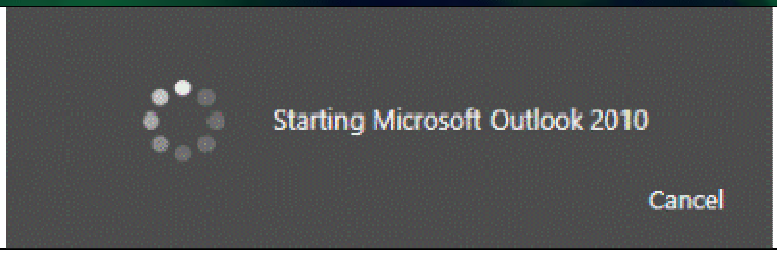
- Microsoft App-V Sequencer
  - Is used to create App-V sequences (.appv is the extension).
- Microsoft App-V Management and Publishing Server
  - These are Server side components of App-V and are used to publish the sequenced App-V packages. User Assignments, Shortcuts, Deployment Configuration, etc. are all configured here.
- Microsoft App-V Client
  - The App-V client is the end-point software which streams the application on to device from Publishing Server.

In XenDesktop 7.5, administrator can publish App-V sequences or applications to delivery groups using the above components.

Firstly, you need to define the App-V Management Server and Publishing Server (URLs) in Citrix Studio as illustrated in the following screenshot.

Screen capture	Instructions
	In Studio, navigate to **Configuration**s → **App-V Publishing** and click "*Add App-V Publishing*" from the right panel Enter the server details

Screen capture	Instructions
	For Delivery groups of the type ***Desktop and Application*** OR ***Applications***, you can publish an App-V application like any other Master Image application.
	After the administrator configures the App-V Management and Publishing Server, the **Delivery Group** shows App-V applications published in the App-V Publishing Server (along with Master Image applications)
	Properties like display name, description and icon image may be changed. Other settings are read-only, such as Location, Limit Visibility and File Type Association (all imported from the App-V Management Server)
	The new ***Applications*** tab under ***Delivery Groups*** in Studio console shows all the Master Images and App-V applications published to various delivery groups

Screen capture	Instructions
	When users logon to the StoreFront using **Citrix Receiver**, they see all the applications made available to them by the Administrator (whether delivered by App-V or master image). They can now launch any of the App-V applications
	The user experience of using App-V virtualized applications is transparent to the end user

Zero-client application access with HTML5 Receiver

One of the most powerful enhancements to XenDesktop 7.5 is the ability to run applications and desktops in a browser, without installing any client software on the end-point. The HTML5 Receiver for XenDesktop 7.5 delivers a rich graphical user-experience using the Deep Compression technology from the native Receiver. For mobile work styles, the HTML5 Receiver is a very important and useful tool.

Three easy steps get you ready to use Receiver for HTML5 in XenDesktop 7.5 environment

1. Enable Receiver for HTML5 in Citrix StoreFront
2. Enable ICA WebSockets in Citrix Group Policy
3. Test Desktop launch from a compatible browser and client

Detailed instructions are provided in Administrator's Guide or the Reviewer's Guide for HTML5 Receiver on Citrix.com

Hybrid Cloud Provisioning

The integrated platform for provisioning hybrid clouds using XenDesktop and XenApp enables IT admins to deliver a complete range of apps and desktops, whether in the private cloud or in the public cloud, while consolidating management, monitoring and maintenance tasks.

- The private cloud is the collection of on premise infrastructure, desktops, applications and data delivered on demand by enterprise IT. Private clouds can also be hosted off-premise. In this case, a service provider offers a portion of its public infrastructure for exclusive use by a single customer, also known as a tenant.
- The public cloud is the collection of off-premise, multi-tenant infrastructure, storage and computing resources, as well as SaaS applications and data, which are delivered on demand by external cloud service providers. Public clouds allow multiple customers, or tenants, to share the underlying resources with each paying only for the resources it consumes.

XenDesktop 7.5 and XenApp 7.5 support multiple cloud platforms such as Amazon Web Services (AWS), Citrix CloudPlatform, all major hypervisors, and more.

Here are the high level steps to set up Amazon Web Services (AWS) with XenApp and XenDesktop.

Prerequisites

Before you begin, perform these tasks:

- Create an Amazon Web Services account and ensure that you have:
    - AWS credentials for the AWS account.
    - AWS Identity and Access Management (IAM) set up for the account. IAM lets you create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.
- Through AWS MarketPlace, subscribe to Citrix NetScaler VPX. The NetScaler VPX provides the NetScaler Gateway functionality.
- Have access to a Virtual Private Cloud (VPC), which is required to integrate with AWS.
- Have access to a Windows Domain either on-premises using a VPN or CloudBridge functionality, or located within the VPC.

Components Set up

- Set up the Delivery Controller
- Set up NetScaler VPX
- Set up StoreFront
- Configure and set up a master image VDA

- Set up machine catalogs and Delivery Groups

More details on setting up hybrid cloud provisioning are available on Citrix eDocs articles.

AppDNA Trial

Now Included with XenApp and XenDesktop Platinum

Citrix AppDNA software trial is valid for 30 days. The trial includes an unlimited number of applications, visibility of overall application compatibility, application migration effort calculation, and detailed application compatibility and remediation for 5 MSI applications and 5 web applications.

To get started with the AppDNA trial, follow the steps below.

Step 1 - Prerequisites

- Microsoft SQL must be installed prior to installing AppDNA. You can download Microsoft SQL Server Express for free.
- For detailed product documentation, please see Citrix eDocs.

Step 2 - Software Downloads

- Select the appropriate package from the Download section above.
    - AppDNA Quick DB – Use with a fast internet connection.
    - AppDNA - Use with a slower internet connection.

Step 3 - Getting Started

1. After the AppDNA download is complete, double click on the AppDNA installer from the download location.
2. Once the installation is finished, **Configure AppDNA** will automatically launch to complete the configuration.
3. Microsoft SQL Server configuration details are required to complete the next step. Provide **Configure AppDNA** with these details including address, administrator login and password (if defaults have been used elsewhere, only the address will need to be supplied).
4. For a trial configuration, you may choose all the default parameters. IIS is not necessary for a trial configuration.
5. When **Configure AppDNA** application finishes successfully, click on the AppDNA application in the START menu and login. The default login is "**administrator**" and default password is "**apps3cur3**".
6. If you did not choose the Quick DB option, you may need to wait for the loading of the OS images to finish before continuing.
7. **IMPORT AND ANALYZE** will display in the left-hand pane of the first AppDNA screen. Click on **Applications** under the **Import** heading to start importing your first applications. After importing one or more applications, click **ANALYZE**, then view the resulting reports. The run time for the import and analyze steps will vary depending on how many applications you choose and the speed of your machine.
8. The trial license is valid for 30 days. Import an unlimited amount of applications for testing, then remediate 5 MSI applications and 5 web applications. Choose applications to analyze which are the most important to your organization. One trial license per organization for 30 days.

Step 4 - Additional Information

- How does AppDNA work?
- Learn more about accelerating application migration projects using AppDNA
- Learn how to use AppDNA for several common application migration scenarios
- Subscribe to AppDNA blogs
- Visit the AppDNA support forum

About the author

Mayunk Jain is a Technical Marketing Manager with the desktop and application virtualization group at Citrix. His responsibilities include competitive intelligence and creation of technical collateral such as product demos, performance benchmarks, and white papers. Based in the Bangalore (India) innovation center, he is keenly involved in training and business development activities within APAC and EMEA.

Please contact him by email or twitter (**@mayunkj**) if you have any comments or feedback on this document, or require assistance with your evaluation.

About Citrix

Citrix Systems, Inc. (NASDAQ:CTXS) is the company transforming how people, businesses and IT work and collaborate in the cloud era. With market-leading cloud, collaboration, networking and virtualization technologies, Citrix powers mobile workstyles and cloud services, making complex enterprise IT simpler and more accessible for 260,000 enterprises. Citrix touches 75 percent of Internet users each day and partners with more than 10,000 companies in 100 countries. Annual revenue in 2011 was $2.21 billion. Learn more at www.citrix.com.