Reviewer’s guide: XenApp 7.6

Faster, simpler publishing of apps & desktops across any Windows OS
Table of Contents

Who should use this guide? 3
What are the components of XenApp 7.6? 4
Getting started 6
  Part 1: Prerequisites 6
  Part 2: Network design 7
  Part 3: Activity scenario 8
Step 1: Installation 9
  Step 1.1: Creating the master image and an app store 14
  Install Delivery Agent on the master image (server OS) 15
Step 2: Creating the machine catalog 18
  Create machine catalog 18
Step 3: Publishing desktops and applications 20
  Create server OS delivery groups 21
Step 4: Configuring the StoreFront server 24
Step 5: End-user session launch (Citrix Receiver) 25
Step 6: Operations helpdesk and monitoring with Director 27
Conclusion 29
Appendix 30
  Application virtualization with Microsoft App-V 5.0 30
  Citrix Receiver for HTML5 for clientless access 32
  AppDNA trial 39
  New features in XenApp 7.6 40
Further reading 46
Congratulations! You have decided to deliver applications and desktops on the best possible platform. Citrix XenDesktop 7.6 and Citrix XenApp 7.6, combined with Citrix StoreFront and Citrix Receiver give customers the flexibility to provide the best user experience on a consistent basis and the freedom to upgrade infrastructure as required without forcing expensive upgrades due to application operating system (OS) requirements.

Who should use this guide?
This reviewer's guide is designed to help you quickly install and configure XenApp® 7.6 for a trial evaluation. It guides you through a XenApp 7.6 deployment scenario to help you better understand how the application delivery capabilities work with the FlexCast® Management Architecture (FMA). The instructions provide an evaluation method to the most common use cases for XenApp: hosted shared apps and hosted shared desktops.

IT administrators familiar with the XenApp product line may know that XenApp 6.5 leveraged the Independent Management Architecture (IMA). With XenApp 7.6, Citrix evolved the product to the next-generation, more-scalable FMA to simplify management, facilitate future upgrades and provide a single pane of glass for XenApp and XenDesktop®. XenApp is currently available in both flavors, XenApp 6.5 (with IMA) and XenApp 7.6 (with FMA), to help the architecture transition for thousands of organizations, including 98 percent of the Fortune 500, which currently have XenApp deployed.

This guide was written using certain assumptions. The target reviewer will:

1. Be familiar, at least on a conceptual level, with previous versions of XenApp or XenDesktop
2. Have prior knowledge of virtual machine management and Windows server infrastructure
3. Possess experience in a system administration or technical reviewer role

By following this guide, the reviewer will be able to deliver apps and desktops using XenApp 7.6 and provide access to these resources using Citrix StoreFront and Citrix Receiver™.

The guide highlights the following key features in XenApp 7.6:

1. FlexCast Management Architecture
2. Intuitive workflows
3. Friendly error messages and real-time configuration validation
4. Citrix StoreFront aggregation portal
5. Citrix Director helpdesk dashboard
7. HDX mobility enhancements for end users
8. Hybrid cloud provisioning and management
For an in-depth evaluation and more details on the release, please see the administrator’s guide.

For differences between XenApp IMA and XenApp FMA, please review this section on eDocs: http://support.citrix.com/proddocs/topic/xenapp-xendesktop-76/xad-core-concepts.html

**What are the components of XenApp 7.6?**

Here’s an overview of the unified infrastructure components:

1. **Citrix Receiver™**. This endpoint component provides users with self-service access to resources published on XenApp servers. Citrix Receiver is easy to deploy and use, and offers quick, secure access to hosted applications, desktops and data. It also provides on-demand access to Windows, web and software as a service (SaaS) applications.

2. **Citrix StoreFront**. StoreFront enables you to create enterprise app stores that aggregate resources from XenApp 7.x, XenApp 6.x, XenDesktop, XenMobile® App Controller and Citrix VDI-in-a-Box™.

3. **Citrix Studio**. Studio enables you to configure and manage XenApp and XenDesktop deployments. Studio provides various wizards to guide you through the process of setting up your environment, creating desktops and assigning desktops to users.

4. **Citrix Director**. This web-based tool enables IT support and helpdesk teams to monitor XenApp and XenDesktop environments, troubleshoot issues before they become system critical and perform support tasks for end users.

5. **Delivery Controller**. The delivery controller is responsible for distributing applications and desktops, managing user access and optimizing connections to applications. One or more delivery controllers make up a single site.
6. **Server OS machines.** These virtual or physical machines based on the Windows Server operating system are used for delivering XenApp-based applications and XenApp-based desktops to users.

7. **Desktop OS machines.** These virtual or physical machines are used for delivering the full XenDesktop VDI (virtual desktop infrastructure) to users based on Windows desktop operating systems. This guide does not cover desktop OS machines.

8. **Virtual Delivery Agent.** The agent, which is installed on the virtual or physical machines hosting applications to be delivered to users, enables these machines to register with the delivery controllers. It also manages the HDX connection between the hosted applications and Citrix Receiver.

9. **Citrix NetScaler Gateway™.** NetScaler Gateway terminates a virtual private network (VPN) for remote users coming over the Internet and communicates with StoreFront to deliver apps and desktops to authorized users. The optional security component does not fall under the scope of this paper, which considers only local users who access StoreFront directly.

**Licensing**

XenApp 7.6 is designed for organizations interested in delivering applications today, but also gives them the flexibility to expand to the other FlexCast models, such as full desktops, at a later time. Unlike previous versions, such as XenApp 6.5 that required separate infrastructure for XenApp and XenDesktop, the unification of the architecture in 7.6 has a single delivery infrastructure and the same consoles for delivering server-based applications (XenApp) and virtual desktops (XenDesktop).

XenApp 7.6 can be purchased either as a standalone license or bundled in one of the XenDesktop 7.6 editions. Since the code base for the two remains the same, upgrading from XenApp to XenDesktop is as easy as replacing the license key. There is no requirement for additional infrastructure or management consoles.

**What’s new in Release 7.6?**

A significant enhancement in this release is the concept of separating XenApp management from the Windows Server machines that host virtual apps or server-based desktops. Unlike previous versions of XenApp, which were directly associated with a specific version of Windows Server, XenApp 7.6 enables you to publish apps and server-based desktops from multiple platforms such as Windows Server 2008, 2012 and 2012 R2 – all from one instance of the product. This makes future upgrades much smoother.

Other notable features in this release:

- New – Session prelaunch and session linger
- New - Support for unauthenticated (anonymous) users
- New – Connection leasing for high availability
- New – Application folders to organize large numbers of applications
- New – XenApp 6.5 to XenApp 7.6 migration tool
- New – StoreFront 2.6 provides a consistent and seamless experience from the latest Citrix Receiver clients
• Hybrid cloud provisioning to Amazon Web Services and Citrix CloudPlatform™
• AppDNA™ full feature set for application migration
• Customers using Web Interface 5.4 today can continue to leverage this feature to connect users to XenDesktop and XenApp 7.0, 7.1, 7.5, and 7.6 without immediate need to retrain them
• Built-in provisioning for server-hosted workloads to add server capacity in seconds
• Simultaneous publishing of dozens of applications
• 100 percent Windows application compatibility, from server and desktop
• One system for all Windows application delivery and management

Getting started
Part 1: Prerequisites
Please visit http://www.citrix.com/tryxenapp to download the free evaluation software. For this evaluation, it is assumed that the reviewer will perform the necessary steps to put the downloaded ISO on a DVD or mount it as virtual disk.

For convenience in this guide, components are installed on fewer servers than are recommended for a production environment. An Active Directory infrastructure with DNS and DHCP services is required (during the evaluation, we strongly recommend a non-production Active Directory and DHCP service for the test environment.)

Figure 2: Simplified network design for XenApp 7.6 evaluation

Tip: While not recommended for production deployment, all VMs for this evaluation may be run on a single physical server. The architecture in this guide uses server hardware with 8 CPU cores and 64GB RAM for the test load.

1 The inset numbers in Figure 1 correspond to the virtual machines listed in Table 1
Before we begin, please complete these prerequisite tasks.

1. Create a group CitrixEval in Active Directory. Add users (user1, user2, etc.) to the CitrixEval group. For this evaluation, these accounts must have local administrator privileges and be domain administrators in Active Directory. In production, being a domain administrator is not required because relevant permissions will be assigned to administrator accounts according to their role.

2. Create the virtual environment using your hypervisor of choice. XenApp 7.6 is supported on popular hypervisors such as Citrix XenServer® 6.2, Microsoft Hyper-V Server 2012 R2, and VMware vSphere 5.5.

Note: Please set up the preferred hypervisor (not in scope of this guide) before starting the lab.

- Microsoft System Center Virtual Machine Manager is required if Hyper-V is used.
- VMware vCenter, with the correct certificates installed, is required if vSphere is used.

3. You need a VM template for each operating system under test: Windows Server 2012 R2 and Windows Server 2008 R2. Create these templates as follows: define the VM specifications (2 vCPU, 4GB RAM, 30GB vDisk) for the server OS. Assign a single network interface to all VMs. Install the operating system and activate. Convert to the template. (Refer to your hypervisor vendor’s documentation for details.)

Part 2: Network design

The installation and configuration (excluding the prerequisites) are expected to take around 2.5 hours. Following is a list of VMs required for the setup shown in Figure 1.

### Table 1: VM assignments

<table>
<thead>
<tr>
<th>VM#</th>
<th>Operating System</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Windows Server 2012 R2</td>
<td>Citrix Studio, Director, StoreFront, SQL Server database, and license server</td>
</tr>
<tr>
<td>2</td>
<td>Windows 8.1</td>
<td>Windows 8 master image (not used for XenApp)</td>
</tr>
<tr>
<td>3</td>
<td>Windows 7 SP1</td>
<td>Windows 7 master image (not used for XenApp)</td>
</tr>
<tr>
<td>4</td>
<td>Windows Server 2012 R2</td>
<td>Windows Server 2012 master image</td>
</tr>
<tr>
<td>5</td>
<td>Windows Server 2008 R2 SP1</td>
<td>Windows 2008 R2 master image</td>
</tr>
<tr>
<td>6</td>
<td>Windows 7 SP1</td>
<td>End-point client with Citrix Receiver</td>
</tr>
<tr>
<td>7</td>
<td>Windows Server 2012 R2</td>
<td>(Optional) Either create a new Active Directory domain and run DNS and DHCP services, or reuse the existing domain</td>
</tr>
<tr>
<td>8</td>
<td>... and more</td>
<td>Auto-created VMs by Machine Creation Services (MCS)</td>
</tr>
</tbody>
</table>

Using these templates, create VMs 1 through 7 as per Table 1. VM's #2 and #3 are not required for evaluating XenApp. Take a 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 and start over). Join all VMs to the Active Directory domain. Using these VMs to create the master image is explained later in Step 1.1: Creating the master image.
Part 3: Activity scenario

Once you have concluded the series of exercises in this guide, you will have an environment in which you can explore the full feature set and performance of XenApp 7.6. Please read the official documentation for detailed instructions. The instructions in this guide are meant to provide you with an evaluation method. Not every component, feature or configuration is addressed.

1. The example scenario is to deliver one hosted shared desktop and two sets of applications, as described below. One desktop based on Windows Server 2012 R2 operating system
2. Two Microsoft applications (Wordpad, Calculator) published from Windows Server 2008 R2
3. Two Microsoft applications (Notepad, Paint) published from Windows Server 2012 R2

In the appendix, you will see the optional step to deliver App-V applications from XenApp.

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

![Flowchart of steps required to evaluate XenApp](image)

After you download and install the software, publishing desktops and apps is a three-step process, driven through a user-friendly wizard in Citrix Studio. Only one task needs to be performed outside of the wizard-based Studio console: 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 delivery controller.

At the endpoint, apps are launched from any device, such as a Windows laptop, MacBook, thin client or iOS or Android tablet, using the Citrix Receiver client. Citrix Director is a web-based console that offers a context-aware dashboard for helpdesk troubleshooting of user activities.
**Step 1: Installation**
Ensure that the prerequisites (previous section) are in place and the software has been downloaded to a DVD (or mounted on a virtual DVD). Also, ensure VM1 has Windows Server 2012 R2 (as per Table 1) installed, and is added to the Active Directory domain. This section describes the process for installing various components of XenApp 7.6 and configuring Delivery Studio.

The default option will be selected for most of the configuration settings. When a different option is recommended or explanation is required, those tasks are marked with a ✓ sign.

**Install the Controller and other core components on VM1**
VM1, running the Windows Server 2012 R2 OS, will host the core components of XenApp 7.6.

**Tip:** Use a fresh installation of the OS, updated with latest patches. Avoid installing any other software on these test VMs unless absolutely necessary.

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Insert the XenApp 7.6 DVD into VM1 and launch the **Autorun Wizard**.

Click **Start** for the relevant product to enter the **Installation Wizard**.

Select **Delivery Controller** under Get Started.

✓ The Installation Wizard automatically detects the OS and displays only compatible installation options.
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 servers for high availability and resource scaling. See the XenApp 7.6 administrator’s guide for more details.

For this evaluation, we will use the built-in SQL Server Express to store app and desktop settings. Accept the default value and click Next.

Allow the Installation Wizard to automatically configure Windows firewall. Accept the default value and click Next.

If you are using a non-Windows firewall, the Installation Wizard may be unable to configure it automatically. For this non-production exercise, manually disable any non-Windows firewall or security apps.

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 prerequisites. The process takes about 20-25 minutes.

You may opt to Launch Studio when you click Finish.

✓ Citrix Studio is the unified management console that replaces Delivery Service Controller (from XenApp) and Desktop Studio (from XenDesktop). You will configure it in the next section.

First run of Citrix Studio

When you launch Citrix Studio for the first time, the First Run Wizard helps you quickly build a new site, create a pool of application servers and desktops (called "machine catalog") and assign users to those applications and desktops (called "delivery groups"). More-advanced users may add this Controller to an existing site or access physical machines using Remote PC Access (not in the scope of this guide).

Select the Site Setup Wizard on the first-run welcome screen.

This wizard creates the initial configuration, database tables and site environment.

The first step is creating a site, which is the container for everything else we do today.
Select the Full Deploy option for this evaluation (default option), and name the site.

Click Next.

As we are using the 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, you will be asked to create a database automatically. Click OK to continue.

Accept the default licensing selection for a 30-day free trial. Click Next.

✓ A 90-day, 99-user free trial key may be obtained from citrix.com/tryxenapp and added later.
Provide connection details to the platform that will host VMS created by Machine Creation Services (MCS).

- In addition to popular hypervisors, you can provision VMs on Amazon EC2 and Citrix CloudPlatform from the Studio console.

In this example, we show VMware vSphere used with MCS to provision VMs.

Provide credentials with permission to create VMs on the hypervisor and click Next.

Select the server and network interface that all VMs should use.

- For the evaluation, use one NIC and the same network interface for all VMs.

Click Next.

The last step is to specify the storage type for the VMs.

For evaluation purpose, select local storage.

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

Accept default values for the other options and click Next.
XenApp 7.6 supports streamed apps with Microsoft App-V.

For this evaluation, accept default (No) and click Next.

✓ (Optional) See appendix for App-V integration steps

Verify the settings on the Summary page. Opt in to send anonymous statistics to Citrix if you’d like to help improve future versions.

Click Finish to create the site.

✓ Before moving to Step 2 of the First Run Wizard, you must create a master image.

You will do this outside the Studio workflow in Step 1.1, and return to the Studio in Step 2.

Step 1.1: Creating the master image and an app store

Before you move to step 2 of the wizard and publish apps and desktops, it is necessary to create the master image that will be used by Machine Creation Services (MCS) to create further XenApp VMs. This is also known as a golden XenApp image.

XenApp 7.6 creates a default store in StoreFront; once delivery groups are created, the environment is available for access without any additional steps unless you wish to customize the app store. The StoreFront configuration is available via the Studio console as well as its own standalone console.

New in XenApp 7.6

Unlike XenApp 6.5, app publishing in XenApp 7.6 is not directly associated with the Windows Server platform. The Virtual Delivery Agent (VDA) is installed on the server OS where published applications are installed, separate from the controller server. This allows multiple platforms, such as Windows Server 2008/R2, Windows Server 2012, and Windows Server 2012 R2, to be supported by a single XenApp 7.6 instance. Citrix machine management technologies, such as MCS and Provisioning Services, are supported for provisioning both desktop and server session hosts in XenApp 7.6.
Install virtual delivery agent on the master image (server OS)

In the Getting Started section we asked you to create VM templates by defining VM properties (how many vCPUs, how much RAM and disk space), installing the OS and common apps, and performing other configurations you want to be part of your users’ environment.

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

- Freshly installed Windows Server 2008 R2 or Windows Server 2012/ 2012 R2
- Joined to the domain and Windows activated
- DHCP pool availability for IP address provisioning of cloned VMs

Before you publish applications or hosted shared desktops, you must prepare a Windows Server with the necessary applications installed. The Virtual Delivery Agent is installed on this server to create a master image.

You may install the Virtual Delivery Agent in standalone mode, that is, to deliver applications from the server itself without replication. That is useful when the agent is on a physical server, for instance. For this evaluation, we choose to install as a master image, so the server will be managed and replicated using MCS.

On the Windows Server VM to be used as master image (VM4 per Table 1 prerequisites), insert the XenApp 7.6 DVD and launch the Virtual Delivery Agent Installation Wizard.

✓ You may need to install .Net 3.5 framework before the installer can continue

If the 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 Virtual Delivery Agent Installation Wizard.
Accept the **default** selection and click **Next**.

The first option (default value) will create MCS-cloned VMs using this master image.

Accept the **default** selection and click **Next**.

Installing Citrix Receiver on the master image is optional. You may **deselect** Citrix Receiver, since this server will only publish apps.

When using MCS, the delivery controller is auto-configurable on the VDA.

✔️ If you add it manually, notice how the intelligent configuration validation feature throws an alert if you make an error.

Select the option **Let Machine Creation Services do it automatically** and click **Next**.

Accept the **default** selection and click **Next**.

This installs all the necessary components for the Virtual 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.

Installation continues automatically after reboot.

After installation succeeds, do the following:

1. Restart the machine.
2. Install the apps you want to publish in XenApp.
3. Shut down the machine.
Step 2: Creating the machine catalog

Create machine catalogs:
A machine catalog is a collection of desktops or physical computers that are managed as a single entity. To deliver applications and desktops 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.

Now that the master image is ready, you can return to Studio and complete Step 2 of the First Run Wizard.

Click **Set up machines** under the **Machine Catalog** option (2).

Click **Next**.

If the First Run Wizard is no longer available, use the **Create Machine Catalog** Wizard to launch the workflow.

To deliver server hosted apps and desktops, select **Windows Server OS**.

Click **Next**.

Accept **default** selections: machines that are power managed (VMs) and Machine Creation Services (MCS).

Click **Next**.
Now select the master image by navigating down the tree to the VM of the master image you created in Step 1.1.

Select the number of cloned VMs that are needed in the pool. For testing, one or two is sufficient. You can add machines later.

Leave everything else as default and click Next.

Select the Computers OU to place the newly created VMs.

Provide an account naming scheme, say Eval-App-## (Number placeholders will be replaced by a VM sequence number)

Leave everything else as default and click Next.

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.

**Wait** for catalog creation to complete before creating delivery groups.

The dashboard **Action** pane (click **Studio** in left pane) shows task status. Create two machine catalogs: one for testing application delivery and another for hosted shared desktops.

**Step 3: Publish desktops and applications**

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 have already configured a site, created and specified machine catalogs by this step, and are about to create delivery groups using those machine catalogs. Users will be entitled to one or more delivery groups and use the applications you decide to publish.

For more details on how application publishing has evolved with the XenApp 7.6 release, please see “Important Information for XenApp Administrators” in the Administrator’s Guide.
Create server OS delivery groups
Delivery groups based on server OS can deliver both hosted shared desktops and applications. Before this step, you should have created a new Windows Server 2012 machine catalog using the master image created in Step 1.1. If not already complete, follow Step 2: Create Machine Catalogs, selecting Windows Server OS as the machine type and MCS provisioning technology.

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

Select option 3 in the First Run Wizard to set up Delivery Groups.

If the First Run Wizard is no longer 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 one 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.

The wizard now lists all the 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.

XenApp 7.6 offers bulk publishing of apps, saving time and making it simple.

Select the apps you wish to publish, and click Next.

Accept defaults and use the automatically created StoreFront Store.

Click Next.
The last step is to enter a **display name** (the label shown in Citrix Receiver) and a **delivery group name** (more descriptive, to identify the group in the management console).

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 you see how to use Citrix Receiver to launch apps and desktops. The newly created hosted-shared desktop will be available in Citrix Receiver.

The apps published in the same delivery group, using a common unified console, are also available in Citrix Receiver.

- In XenApp 7.6, 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**

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

The StoreFront management console is now integrated with Studio.

- The StoreFront console is also available as a standalone console.

XenApp 7.6 comes with a default store that is available once the first delivery group is created.

Default store URL is in the following format:

http://<servername>/Citrix/StoreWeb

For evaluations, the auto-created store quickly allows access to the environment. No further configuration is needed after the delivery groups are set up.

- Please refer to the admin guide if you wish to create a custom StoreFront site.

The StoreFront console is also available as a standalone console.

- As a best practice, StoreFront services are installed on a server separate from the delivery controller. For this evaluation, you will use a single server for all components.

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

You will now use VM6 (from Table 1) to launch the apps and desktops on a client and evaluate the end-user experience.

Launch published desktops and applications using Citrix Receiver
Citrix Receiver is the lightweight client that enables access to applications and desktops from StoreFront. Once a user is authenticated, you will have access to those applications and desktops hosted on XenApp.

On a client machine, Windows 7 in this case, open a browser and go to the default Storefront URL:

http://<servername>/Citrix/StoreWeb

If Citrix Receiver is not already installed on the client, you are prompted to install it. Accept the EULA if you agree, click Install and follow the installation process. Return to the login page once it is installed.

Log in 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.
You can switch between your list of apps and your 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.

XenApp 7.6 allows you to provision and access hosted shared apps and desktops. With XenDesktop 7.6, you deliver VDI desktops from the same console as hosted shared applications and desktops.

In this example, Win7 and Win8 are VDI desktops, while Hosted Shared 2012 is server based, as the name suggests.

XenApp 7.6 allows you to create hosted shared applications from Windows Server 2012, in addition to Windows Server 2008 R2 and 2012 R2.

Follow the steps in this guide to create different machine catalogs using a Windows Server 2008 R2 master image and a Windows Server 2012 master image.

When you click the Hosted Shared 2012 desktop icon, the desktop is a Windows Server 2012 desktop (as seen in this picture).
Step 6: Operations helpdesk and monitoring with Director

Director and EdgeSight® are completely redesigned for XenApp 7.6. Intended for use by operations helpdesk and Citrix specialists, Director provides great detail about user sessions and helps to quickly identify and resolve issues before they negatively impact end-user performance.

Access the Director console with this easy URL:

http://<servername>/Director

✓ The Director console can also be accessed from the Start menu of the server.

This is a snapshot of the dashboard. It clearly shows relevant information, such as connected sessions, failed sessions, average logon time and so on.

Click through on the dashboard to drill down into details of the parameters such as connection or session details, type of delivery group, etc.

Failure reason, client version, server group, end-user IP, etc., help IT admins resolve any issues.

Troubleshooting tasks such as power or session control can be performed without leaving this console.

If a particular user calls into the helpdesk, staff can quickly bring up their details on screen using the search facility.

Search by username, or machine name, or client endpoint name.
Click “Details” button on top-right, to get detailed user information, including the protocol, version numbers, and also processes running on the VM. IT staff can end a rogue process, for example, on behalf of the user.

Scroll down the user details page to see more details on the personal disk usage, roaming profiles, HDX protocol performance, and so on.

Click the “Activity Manager” on top-right to toggle between session details and overview dashboard.

The session-selector shows delivery groups entitled for the user: whether apps or desktops, and connection status. Select a connected session to switch.

XenApp 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.

This discussion explores only a fraction of the visibility offered by the new Director.

Feel free to explore different sections in Director to find helpful tools such as integrated app usage, Citrix policies, SmartAccess policies, and so on.
**Conclusion**

This concludes your evaluation of the XenApp 7.6 release.

Through this process, you learned how to install a basic deployment of XenApp 7.6, configure a Studio site and create machine catalogs. Using delivery groups, you provisioned both apps and desktops from a single unified console, with a high level of interactivity and graphics. Finally, you experienced the powerful monitoring, troubleshooting and analytical features of Director and saw how simple and easy it is to manage day-to-day operations of a large-scale virtualized desktop environment.

This simplified guide is intended for a quick evaluation of the product features, using a narrow scope of work. It does not replace the administrator’s guide and deployment guide available on http://www.citrix.com/edocs.

Now that you have completed these tasks and seen how a basic deployment functions, use the XenApp 7.6 documentation to experience all the components and features available with this release, such as rich graphics using GPU cards, Windows media multicast support, Citrix Receiver for HTML5, configuration logging, delegated administration, App-V integration, hybrid cloud provisioning and more.
Appendix
A few optional use cases are covered in this section to showcase the additional features in XenDesktop 7.6. 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.

1. Application virtualization with Microsoft App-V 5.0
(Source credit: Vidhesh Ramesh’s blog on Citrix.com)

Here is a summary of the steps for deploying and using App-V applications in XenDesktop 7.6. Please see this white paper from Microsoft and Citrix for detailed instructions.

The components required for App-V Deployment are:

- Microsoft App-V sequencer
  It is used to create App-V sequences (.appv is the extension).
- Microsoft App-V management server and publishing server
  These server-side components of App-V 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 that streams the application to the device from Publishing Server.

In XenDesktop 7.6, administrators can publish App-V sequences or applications to XenApp delivery groups using the above components.

First, you need to define the App-V management server and publishing server (URLs) in Citrix Studio as illustrated in the following screenshot.

In Studio, navigate to Configurations > App-V Publishing and click Add App-V Publishing from the right panel.

Enter the server details.

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 Servers, the delivery group shows App-V applications published in the App-V publishing server (along with master image applications).

Properties including 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 the Studio console shows all the master images and App-V applications published to various delivery groups.

When users log on to 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 experience of using App-V virtualized applications is transparent.
2. Citrix Receiver for HTML5 for clientless access
One of the most powerful enhancements to XenDesktop 7.6 is the ability to run applications and
desktops in a browser, without installing any client software on the endpoint. The HTML5 Citrix
Receiver client for XenDesktop 7.6 delivers a rich, graphical user experience using the deep
compression technology from the native Citrix Receiver technology. For mobile workstyles, Citrix
Receiver for HTML5 is a very important and useful tool.

Three easy steps get you ready to use Citrix Receiver for HTML5 in a XenDesktop 7.6 environment

1. Enable Citrix 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 the administrator’s guide.

Step 1: Enable Citrix Receiver for HTML5 in StoreFront
If not already installed, please deploy Citrix StoreFront, either on the same server as the delivery
controller or on a standalone console. Create a store for the site.

Open the Citrix Studio management
console. Under the Citrix Storefront
option, click on Receiver for Web.

In the middle pane, make sure the
appropriate store is selected.
In the right pane, under Actions > Store Web Receiver:

Click Deploy Citrix Receiver

To enable Citrix Receiver for HTML5, there are 3 options:

1. Install locally
2. Use Receiver for HTML5 if local install fails
3. Always use Receiver for HTML5

Select Use Receiver for HTML5 if local install fails

Note: For test purposes, you may select the last option to always launch using the HTML5 browser-based client.

Step 2: Enable ports using group policy
Once the Citrix Receiver settings are configured in StoreFront, you need to enable ICA Websockets using group policy from the Citrix Studio console.

Create a new policy or modify an existing policy

Under Citrix Studio, go to Policy.
In the middle pane, under Policies, either modify an existing policy or create a new policy.

For simplicity, we will create a new policy.

To create a new policy, go to Citrix Studio > Policy, under Actions > Policy. Click **Create Policy**.

Type **websoc** in the search field of the Edit Unfiltered window that opens. This shows only the three WebSockets-related policy settings.

One by one, click **Select** and edit each of them.

In the first policy, allow WebSockets connections (prohibited by default).

Select **Allowed** and click **OK**.

In the second policy, leave default ports and click **OK**.

**Note:** In production, a non-default port will be selected as security best practice.
In the third policy for trusted origin servers, leave default server and click **OK**.

**Note:** In production, specific trusted servers will be listed as security best practice.

Once all three policies are defined, click **Next**.

Assign a policy to users and machines based on delivery group, OU or tags.

Select the delivery group.

Click **Assign**.

Once you click Assign, a window named **Assign Policy** opens.

Select the appropriate delivery group from the drop-down.

Click **OK**.
Alternatively, if you select **Delivery Group Type**, in the Assign Policy screen you can select from the following delivery group types:

- Private Desktop
- Shared Desktop
- Private Application
- Shared Application

Alternatively, if you select **Organizational Unit (OU)**, then you have the option to select a specific OU from your Active Directory environment.

In the **Summary** window, review your policy settings, provide a name for the policy and make sure the **Enable Policy** checkbox is selected.

Click **Finish**.

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**Step 3: Verify HTML5 access to your desktops and applications**

From the client machine, access the Storefront URL using a compatible browser.

Log in via the StoreFront URL using domain credentials based on permission (users/groups) in the delivery group. The default URL would be `http://<DDC-IPaddress-or-FQDN>/Citrix/StoreWeb`.

If you selected the **Always Use Receiver for HTML5**, you will not see the prompt to install Citrix Receiver. Instead, it will directly ask you to authenticate.
If you selected the option to **Use Receiver for HTML5 if local install fails** during Step 1, and Citrix Receiver is not already installed in the system, it will prompt you to install it on the Citrix portal page. Do not install Citrix Receiver at the prompt. Instead, click **Log On** at the bottom.

**Tip:** Ensure Citrix Receiver is not installed when testing HTML5 access. Most admins first access using the Citrix Receiver native client to validate the infrastructure. In that case, uninstall the Citrix Receiver native client from the control panel, and test HTML5 access.

Enter the appropriate username and password.

The page will enumerate all the apps and desktops you have access to. Click the + sign to add more apps and desktops that are entitled for you.
A Windows 7 desktop as viewed from a HTML5-compatible browser (in this example, Google Chrome).

User experience
By default, when a user accesses the StoreFront website from a computer running Windows or Mac OS X, the site attempts to determine whether Citrix Receiver is installed on the user’s device. If Citrix Receiver cannot be detected, the default configuration enables users logging onto the site with a supported browser to use Citrix Receiver for HTML5. Citrix Receiver for HTML5 is always used when people running the Chrome OS log on to a Receiver for Web site.

Chromebook users have the choice of using Citrix Receiver for HTML5 or the new Receiver for Chrome. Receiver for Chrome is a native Chrome packaged app, like native Citrix Receivers on other operating system platforms. Being a native app, Receiver for Chrome enables Citrix to add more capabilities to Chrome devices, leveraging the Citrix partnership with Google. Please see this blog for more details.

Citrix Receiver for HTML5 is a great tool when local installation of the native client is not possible or recommended, for example, when in kiosk mode. The full client is recommended for best performance and user experience.

Citrix Receiver for HTML5 contains many enhancements for great user experience:

1. A floating toolbar enables clipboard copy-paste between client and virtual desktop.
2. The toolbar also lets you send CTRL+ALT+DEL for Windows tasks such as logging off, locking the screen and so on.
3. When not in use, the toolbar is inconspicuously docked at any edge of the screen.
4. “Host to client URL redirection” redirects websites opened in session to the client browser for the best multimedia experience.
3. AppDNA trial
Included with XenApp and XenDesktop Platinum

The 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 five MSI applications and five web applications. It is suggested that you choose applications that are the most important to your organization.

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

**Step 1 - Prerequisites**

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

**Step 2 - Software downloads**

1. 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 log in. 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.
4. How to configure some of the new features in XenApp 7.6

As business needs become more complex, XenApp 7.6 offers new capabilities to manage delivery of more Windows applications to more users. In this section we take a quick look at some of these features, and what is needed to set them up.

Anonymous user

Anonymous login enables administrators to authenticate the user at the application and not necessarily at the Receiver/StoreFront. This is commonly deployed in verticals such as healthcare and manufacturing where the use of kiosks and terminals is common.


Step 1 – Studio (delivery group)

1. Open Studio
2. Select delivery groups
3. Select a Server OS delivery group and click edit delivery group
4. On the User page, check the box for anonymous users at the bottom (this step can also be done during delivery group creation.)
Step 2 – StoreFront (unauthenticated store creation)
You must configure a separate StoreFront store for anonymous access.

1. Open the StoreFront console.
2. Click Stores.
3. Click Create store for unauthenticated users.
4. Click Next on the information screen.
5. Enter a store name and click Next.
6. Click Add… on the delivery controllers page.
7. Enter a display name and then click Add…
8. Enter a controller name (FQDN) and click OK.
9. Repeat until all controllers are added.
10. Select the transport type HTTPS or HTTP as required.
11. Click OK.
12. Click Create.
Application folders
Application folders in XenApp 7.6 are used for organization. The delegated administration function remains separate from the application folders feature in FMA, and is enabled at the delivery groups using tags.

How To video: http://www.citrix.com/tv/#videos/12048

1. Open Studio
2. Select delivery groups
3. Select the Applications tab
4. Right-click the Applications folder at the left and select Create Folder.
5. Enter a name for the folder and click OK.
6. Once created, the folder will appear under the Applications folder.
7. Put applications into the folder by either dragging and dropping or selecting the application and then clicking Move application on the left.
8. For search and access to machine catalogs and applications, use the “Tags” feature.
Application prelaunch and lingering sessions
The app prelaunch feature offers a “faster than local” app launch perception, which includes suppressing the session creation progress bar. Session disconnect policy releases the license back to the pool, but fast re-connect ensures improved app launch experience. Session lingering prevents tearing down of the session.

How To video: http://www.citrix.com/tv/#videos/12050

Step 1 –Application pre-launch

1. Open Studio
2. Select delivery groups.
3. Select a Server OS Delivery group and click edit delivery group.
4. Select Application Pre-launch.
5. Select all users or specific users.
6. Select the trigger when you want applications to prelaunch.
7. Select time or other options to end unstarted Pre-launched sessions.
8. Click OK.
Step 2 – Application lingering

1. Open Studio
2. Select delivery groups
3. Select a server OS delivery group and click edit delivery group.
4. Select Application Lingering.
5. Select Keep session active until:
6. Enter desired time or load options.
7. Click OK.
Hosted app usage
Understanding when peak usage is occurring and what those peak levels are allows you to predict capacity needs based upon past history usage. It’s also important to be able to drill down to the specific application to determine who used it.

1. Log into Director.
2. Click trends at the top.
3. Click the Hosted Applications tab
4. Select the time period. It displays the app usage graph.

5. Clicking on the application in the table brings you to the view below where an admin will be able to view the user-based application metrics.
Further Reading

1. Citrix Product Documentation
   - XenDesktop 7.6 and XenDesktop 7.6

2. Virtual Apps and Desktop Handbook 7.x
   - http://support.citrix.com/article/CTX139331

3. Virtual Apps and Desktop Design Guides
   - Secure Remote Access to Enterprise PCs
   - Simple, Secure, Remote Access Delivery (requires Citrix Account)
   - Virtualizing 3D Professional Graphics

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