Citrix Connector 7.5 Proof-of-Concept Deployment Guide

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Version: 1.0
Last Updated: July 22, 2014
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Overview

Citrix Connector 7.5 for System Center Configuration Manager provides a bridge between Configuration Manager and XenApp 7.5 or XenDesktop 7.5. With Citrix Connector, you can unify day-to-day operations across the physical environments you manage with Configuration Manager and the virtual environments you manage with XenApp or XenDesktop.

The Connector:

- Extends the deployment capabilities of Configuration Manager, enabling you to deploy managed applications to unmanaged, non-Windows devices.
- Adds value to XenApp and XenDesktop by using Configuration Manager policies to automate application and software update installation.
- Provides automated and consistent installation of software across one or more Citrix Delivery Sites.

The Connector integration with Configuration Manager provides a single location where you can define and manage user access to all applications. The Connector synchronizes Machine Catalogs into Configuration Manager as device collections so you can deploy applications to them. The Connector synchronizes Delivery Groups into Configuration Manager as user collections. Those relationships are shown in the following diagram.
This guide covers a proof-of-concept deployment and describes how to prepare your environment, install and configure Connector, and then test drive the Connector. You will deploy an application to manually provisioned Server OS (hosted shared) session machines and then publish the application to Receiver for access from all user devices.

This guide is intended for administrators who are familiar with Microsoft System Center Configuration Manager 2012, XenApp, and XenDesktop.

For more information about Citrix Connector, refer to these resources:

- eDocs
- Blogs
- Forum

**Architecture**

The target proof-of-concept deployment architecture includes the following components:

- One Configuration Manager site, with the Citrix Connector console extension
- A dedicated machine for the Citrix Connector service
- One XenApp or XenDesktop Delivery Site
- StoreFront and user devices

**Important:** All components must be in the same Active Directory domain or in domains that trust each other. This includes the XenApp or XenDesktop infrastructure, the Configuration Manager infrastructure, the machine where the Connector service is installed, and StoreFront. User devices must be on the same domain as the StoreFront stores.
This guide assumes that the following components are installed and working in the environment where you will install Citrix Connector:

- A Configuration Manager 2012 R2 or SP1 site
- A XenApp 7.5 or XenDesktop 7.5 or 7.1 Delivery Site
  
  Your Delivery Site must include at least one Server OS machine catalog that is manually provisioned. It must also include at least one Delivery Group that has been used to successfully publish an application from Citrix Studio to Citrix Receiver.

- StoreFront 2.5 or 2.1
- Citrix Receiver installed on user devices
  
  For this proof-of-concept deployment, you will publish an application to unmanaged devices. For those devices, the Connector supports any Citrix Receiver compatible with XenApp or XenDesktop 7.5.

Components

The following Citrix Connector 7.5 components are used in the proof-of-concept deployment:

- Citrix Connector service
  
  Synchronizes machine catalogs with device collections, synchronizes Delivery Groups with user collections, orchestrates software installation, and publishes applications to Delivery Groups. Install the Connector service on a dedicated VM (recommended) or the Configuration Manager site server.

- Connector console extension
  
  Enables the Configuration Manager console to work seamlessly with XenApp and XenDesktop. Install the console extension on every machine that has the Configuration Manager console.

- Citrix Connector agent
  
  Orchestrates application and software installation and updates by coordinating with Machine Creation Services, Provisioning Services, and the Configuration Manager idle policy feature. Install the agent on session machines (workers) and in the master image of pooled Desktop OS machine catalogs. The Connector agent requires the Citrix Virtual Delivery Agent (VDA).
• Connector policies

Configure how the Connector agent handles items such as advanced warning messages, force logoff messages, and Connector agent maintenance frequency. Install Connector policies on machines running Citrix Studio.

The following diagram summarizes those components.

**Connector components shown in bold.**

* Citrix DT handler is required only if using the ConfigMgr Application Catalog or Software Center to deploy applications.

**Note:** For completeness the diagram includes the Citrix deployment handler, which is not required for publishing to Receiver and is not covered in this guide. The Citrix deployment handler is required only on managed devices if users will access Citrix hosted applications from the Configuration Manager Application Catalog or Software Center.
Prepare for installation

Before you begin installation, prepare your environment as follows.

1. In the policies of the computer on which you will install the Connector service, ensure that the **Do not allow storage of passwords and credentials for network authentication option** is set to **Disabled**.

![Local Security Policy](image)

2. Create a service account for the Connector service. The Connector service account must:
   - Have the Full Administrator role with the All scope for the XenApp or XenDesktop site
     To verify the role and scope, open Studio and go to **Configuration > Administrators**.
   - Be a local administrator on the Citrix Delivery Controller, the SMS Provider for the Configuration Manager 2012 site, and the machine where the Connector service will be installed
   - Use the Configuration Manager built-in security role of Full Administrator or a security role that has all permissions on these object classes:
     - Application
     - Client Agent Settings
     - Collection
     - Configuration Item
     - Distribution Point
     - Global Condition
     - Software Update
     To verify the permissions, open the Configuration Manager console and go to **Administration > Security**.

3. Check the MaxMemoryPerShellMB setting on each Delivery Controller to be used for the proof-of-concept deployment. The Connector requires that Citrix Delivery Controllers have a PowerShell memory limit of at least 1024 MB.

   **Note:** The default maximum PowerShell memory per shell on Windows Server 2008 and 2008 R2 does not meet the requirement. The Connector cannot operate with an insufficient memory limit.
To configure the MaxMemoryPerShellMB setting, log on to the Delivery Controller, start PowerShell with administrator privileges, and enter:

```bash
winrm set winrm/config/winrs '@{MaxMemoryPerShellMB="1024"}"
```

The command result appears:

![Image showing command output]

4. **Download the Citrix Connector package** (CitrixConnector_7.5_ConfigMgr.exe) and extract its contents.

   - [Citrix Receiver extensions]
   - [Citrix Studio extensions]
   - [Citrix VDA extensions]
   - [CitrixConnectorConfigMgr2012]

   The package includes installers for the Connector policies (Citrix Studio extensions), Connector agent (Citrix VDA extensions), and Connector service and console extension (CitrixConnectorConfigMgr2012).

   For this proof-of-concept deployment, you will not use the installer in the Citrix Receiver extensions folder.
Install and configure the Connector service and console extension

The machine where you will install the Connector service and console extension must meet these requirements:

- Windows Server 2012 R2 or Windows Server 2008 R2
- Configuration Manager console
- 50 MB of disk space for installation and up to another 50 MB for logging
- Connectivity to a Citrix Delivery Controller
- Connectivity to the Configuration Manager site server
- .NET Framework 3.5 SP1 and .NET Framework 4.5.2, 4.5.1, or 4.5

To install the Connector:

1. If the Configuration Manager console is open, close it.
2. Run the Connector installer: CitrixConnectorConfigMgr2012.exe.
   
   The installer prompts you to install .NET Framework 4.5.2 if the .NET version is below 4.5. You might be prompted to restart the machine to complete the installation.
3. Click through the installer to the page titled Select the features to be installed. Keep the two check boxes selected.
4. Click Next, Install, and then Finish.
   
   The configuration wizard appears.

5. Click Enter Credentials and enter the Connector service account credentials.

   After you click OK and Next, the configuration wizard validates the credentials.

6. On the Citrix Delivery Controller page, enter the FQDN of the Citrix Delivery Controller. The FQDN must include all levels (such as hostname.subdomain.domain). Also specify the Delivery Controller Remote PowerShell Port if the default port is not used.
After you click **Next**, the configuration wizard validates the connection.

If the Delivery Controller is running on Windows Server 2008 R2, the installer advises you to increase the MaxMemoryPerShellMB setting to 1024. If you verified that setting while preparing for installation, you can ignore the validation error and continue with the next step.

7. On the Configuration Manager Site Server page, enter the FQDN of the site server.

After you click **Next**, the configuration wizard validates the connection.

8. On the Software Installation Maintenance Window page, select **Define a 24x7 Maintenance Window managed by the Citrix Connector**.

   This setting is recommended only for proof-of-concept environments because software distribution will be initiated after Configuration Manager processes outstanding work requests.

   **Important**: When you set up a production deployment, define a custom maintenance window that is outside of normal business hours so that maintenance does not interrupt users. You can also change maintenance windows in the **Maintenance Window** tab of the device collection **Properties**.

9. On the Product Improvement Program page, select a setting.
10. On the Settings Summary page, click **Apply** to complete the configuration and then click **Finish**.

**Verify the synchronization with XenApp or XenDesktop**

After you complete the wizard, the Connector synchronizes Configuration Manager with XenApp or XenDesktop.

Open the Configuration Manager console, expand **User Collections > Citrix Delivery Sites**, and verify that it contains your Delivery Groups.

Also, expand **Device Collections > Citrix Delivery Sites** and verify that it contains your Machine Catalogs.

To view the machines in a machine catalog, select the **Catalogs** folder, right-click a catalog, and then choose **Show Members**.

Take a moment to decide which Server OS machine catalog you will use for this deployment. In the next section you will install required components on the session machines in that catalog.
Install components on session machines

For this proof-of-concept deployment, you will deploy an application to Server OS session machines (workers) that are manually provisioned. This section describes how to install the following components on those machines:

- **Configuration Manager 2012 R2 or SP1 client**
  The Configuration Manager client coordinates with the Connector during application and software installation and updates.

- **Citrix Connector agent**
  The Connector agent handles application and software installation and updates.
  The Connector agent supports these releases:
  - Windows Server 2012 R2 and 2008 R2 Editions
  - Windows 8.1, 8, and 7 SP1

In this scenario, applications are made available through Receiver only, so the Citrix deployment handler is not needed.

Install the components in the following order:

1. **Configuration Manager client**
   You can use the Configuration Manager console to install the Configuration Manager client:
   Go to **Assets and Compliance > Devices**, select the devices, right-click, and choose **Install Client**. This operation can take a while.

   ![Configuration Manager Console](image)

   **Tip:** You might find it faster to manually install the client: Log on to the session machine, navigate to `\ConfigMgr site server\SMS_Site Code\Client`, and run the installer, CCMSetup.exe.

   The **Client** column in the Devices list indicates whether the Configuration Manager client is installed. You can also verify client installation by opening the Windows Task Manager on the session machine and locating CcmExec.exe on the **Processes** tab.
2. Citrix Connector Agent

Log on to the session machine, navigate to the Connector installation package location, and run the Citrix Connector Agent installer:

- Citrix VDA extensions\CitrixConnectorAgent_x64.msi
- Citrix VDA extensions\CitrixConnectorAgent_x86.msi

When installation completes, you are prompted to click **Finish**.

To verify installation, search for **Citrix Connector 7.5 for System Center Configuration Manager – Agent Service** in Programs and Features.

All of the components required for this proof-of-concept deployment are now installed.
Install Connector policies

Although installing the Connector policy component is optional, you will likely need to change the default settings when you move from a proof-of-concept to a production environment. We recommend that you install the Connector policies and review the default settings.

The Connector policy installer is in the extracted Connector package:

- Citrix Studio Extensions\CitrixGroupPolicyManagement_x64.msi
- Citrix Studio Extensions\CitrixGroupPolicyManagement_x86.msi

Install the policy component on the Delivery Controller. When installation completes, you are prompted to click Finish.

To review the settings: In Citrix Studio, click Policy and then Edit Policy. From the All Settings menu, choose Connector for Configuration Manager 2012.
Deploy an application to a manually provisioned machine catalog

Now that the setup is complete you can deploy an application to your Server OS machine catalog.

Choose an application

The deployment steps in this guide assume that you are working with an MSI application.

- Use an MSI application that is already added to the Configuration Manager Software Library.

  or

- Create an MSI application in Configuration Manager: Expand Software Library>Application Management, click Applications, and on the Home tab, click Create Application.

Important: The Connector has only one requirement for applications you will publish to users. The deployment type used for those applications must use the Install behavior option Install for system if resource is device, otherwise install for user. That option ensures that an application will work if it is deployed to a device collection or user collection.

When you create an application, the Install behavior option is on the General Information page.
To view the setting for an existing application, navigate to the **Installation behavior** option as follows:

1. Select the application in the Applications list, click the **Deployment Types** tab, right-click the MSI deployment type, and then choose **Properties**.
2. In the Properties dialog box, click the **User Experience** tab.

When you create an application, the **Logon requirement** defaults to **Whether or not a user is logged on**. Do not change that setting.
Determine where to target the deployment

The Connector adds information to the Configuration Manager console that guides you in choosing a deployment target. If you are not sure where to target a deployment, navigate to **Assets and Compliance > Device Collections > Citrix Delivery Sites > Catalogs**, right-click the catalog name in the list, and then choose **Machine Catalog Properties**.

In the Properties dialog box, click **Deployment Strategy** to view a description of how the machines are managed and where you should target deployments.
In this scenario, the machines are manually managed, so you deploy applications to the local storage attached to the Windows Server OS session machines.
Deploy the application

1. Select the machine catalog in the device collection: Expand **Assets and Compliance > Device Collections > Citrix Delivery Sites > Site > Catalogs**, right-click the catalog name in the list, and then choose **Deploy > Application**.

The Deploy Software Wizard opens.
2. On the General page across from **Software**, click **Browse**, select the application name, click **OK**, and then click **Next**.

   Do not change the Collection.

3. On the Content page, add the distribution point for MSI applications and then click **Next**.
4. On the Deployment Settings page: For **Purpose**, choose **Required** so that Configuration Manager forces the application to install.

**Important**: If you do not choose **Required**, Configuration Manager will not deploy the application to the device collection containing the machine catalog.

5. On the Scheduling page: Accept the default, **As soon as possible after the available time**.
6. Click through the remainder of the wizard to accept the default settings.
Check the deployment status

Before you publish the application, verify that the application is deployed to the session machines.

1. To view the deployment status, go to Monitoring > Deployments and select the application. The Compliance % and the Completion Statistics indicate the deployment progress.

To force a status update, click Run Summarization, wait a while, and then click Refresh.

While the deployment is in progress, the status changes to Waiting For Orchestration.
After the application deploys, the Compliance % is 100.0 and the Completion Statistics indicate success.

<table>
<thead>
<tr>
<th>Completion Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success: 1</td>
</tr>
<tr>
<td>In Progress: 0</td>
</tr>
<tr>
<td>Error: 0</td>
</tr>
<tr>
<td>Requirements Not Met: 0</td>
</tr>
<tr>
<td>Unknown: 0</td>
</tr>
</tbody>
</table>

Publish an application to Receiver users

After the application is deployed to all machines in the machine catalog, you make it available to Receiver users by publishing it to a Delivery Group.

1. In the Configuration Manager console, expand **Software Library > Application Management**, right-click **Citrix Application Publications**, and choose **Create Publication**.

   ![](Image)

   The Citrix XenApp 7.5 and XenDesktop 7.5 Publishing Wizard opens.

2. On the Application page, click **Browse** and then select the application.
3. Click **Start** and review the Introduction page to see if there are any steps you need to take before proceeding.

![Image of Citrix XenApp 7.5 and XenDesktop 7.5 Publishing Wizard]

4. The Pre-flight Checks page indicates if there are issues that will prevent a successful publishing.

   For example, the following Pre-flight Checks page indicates that the application might not be deployed to all machines in the machine catalog. The Connector cannot be aware of machines that are offline or in XenApp or XenDesktop maintenance mode, so the warning lets you know that the application might not publish to all machines.
Tip: If multiple pre-flight checks fail, only one description is expanded. Click a status icon to expand a description.

The Connector publishing task will not publish an application until its deployment status is 100%. It is safe to continue with publishing the application although the warning icon is present.

5. On the Delivery Groups page, select the **Delivery Group**.

6. Click through the remaining pages to complete the wizard.

7. By default the Connector publishing task runs every 5 minutes. To run it immediately, go to the Windows Start screen or menu and run **Citrix Connector 7.5 Publishing Task**.
The application appears in the Citrix Applications Publications list.

8. To view the publishing status: Click **Citrix Application Publications**, right-click the application, and choose **Properties**. Review the messages in the **Publishing status** area of the Properties dialog box.

The following status indicates that the application is scheduled for publishing. A green icon appears when the publishing is complete.
After the application is published, you can view it in the Citrix Studio applications list:
Log on to your Citrix Delivery Controller, open Studio, click **Delivery Groups**, and then click the **Applications** tab.

The application that the Connector published appears in the list. The application name prefix is **ConfigMgr_** and description is **KEYWORDS:ConfigMgr**.

To view the application in Citrix Receiver, log on to a device that is in the Delivery Group where you published the application. Then, log on to Receiver.

**For more information**

The deployment and publishing tasks that you just completed focus on an MSI application deployed to a manually managed machine catalog and published to Receiver. The Connector also supports:

- App-V and Script-based applications
- Machine catalogs managed by Machine Creation Services or Provisioning Services
- Application deployment to the Configuration Manager Application Catalog or Software Center on devices managed by Configuration Manager

We encourage you to extend your proof-of-concept deployment to include all capabilities that you will use in a production deployment.

Detailed conceptual and operational documentation is available in **Citrix Connector 7.5 for Configuration Manager**.

For links to a variety of resources including videos and blogs, refer to these topics:

- Connector installer and configuration wizard
- Machine catalog properties and device collections
- Citrix deployment type
- Master image management
- XenApp 7.5 and XenDesktop 7.5 Publishing Wizard