

# How to deploy your ThinApps?

## ThinApp deployment methods



Eenvoud in ICT

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## DOCUMENT OVERVIEW

### HISTORY

Version	Date	Author(s)	Remarks
1.0	31-12-2010	Sven Huisman	First release

### REVIEWERS

Version	Date	Reviewer	Remarks

### REFERENCES

Reference	Title
Streaming execution mode	<a href="http://www.vmware.com/files/pdf/VMware_ThinApp_Streaming_Execution_Mode_Information_Guide.pdf">http://www.vmware.com/files/pdf/VMware_ThinApp_Streaming_Execution_Mode_Information_Guide.pdf</a>
ThinApp login script	<a href="http://blogs.vmware.com/thinapp/2010/04/simple-thinregexe-login-script.html">http://blogs.vmware.com/thinapp/2010/04/simple-thinregexe-login-script.html</a>
Application virtualization smackdown	<a href="http://virtuall.nl/download-document/application-virtualization-smackdown">http://virtuall.nl/download-document/application-virtualization-smackdown</a>
Group policy preferences	<a href="http://technet.microsoft.com/nl-nl/library/cc731892(WS.10).aspx">http://technet.microsoft.com/nl-nl/library/cc731892(WS.10).aspx</a>

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# 1. INTRODUCTION

## 1.1 PURPOSE OF THIS DOCUMENT

ThinApp is often compared to other application virtualization solutions that have a deployment mechanism build-in, like Microsoft App-V or Citrix XenApp streaming. ThinApp doesn't have a build-in deployment mechanism, but there are a lot of options to deploy ThinApp applications. This whitepaper describes several methods to deploy ThinApp applications.

## 1.2 ABOUT PQR

PQR is THE specialist for professional ICT infrastructures with a focus on server & storage, virtualization and application & desktop delivery.

PQR stands for simplicity, freedom and professionalism. We provide our clients with innovative ICT solutions that ensure that application availability and manageability are optimal. We have demonstrable references and a wide range of expertise in the field, as witnessed by our many high partner statuses and certifications.

As a Trusted Advisor we inform our clients about new technologies that keep their ICT environments running even easier, creating optimal performance and information accessibility from any location or device. This not only applies to system administrators but also to users. By using application and desktop virtualization, for example, users experience the ease and speed of accessing applications and the associated data that they need. We therefore offer our clients an ICT environment that is manageable and well-organized and, above all, entails significant cost decreases, not only in management but also in energy consumption. In addition, these solutions contribute to a remarkable reduction of CO2 emissions. In this way PQR provides medium and enterprise companies and institutions with an ICT infrastructure that is stable, flexible and ready for the future.

PQR also has extensive experience in designing and implementing storage environments. Large storage environments have been our specialty for quite some time, and this ensures that we work efficiently. Our approach is clear for all processes. We begin with an inventory of needs and a preliminary examination. We carefully map out what is required in terms of functionality - naturally, taking future plans into consideration - and we give advice regarding necessary and feasible changes. During the entire project, from design to implementation, PQR takes responsibility for on-time delivery of (sub-)projects and for the end result. We usually do this fixed price with the associated guarantees. We call this '\_simplicity in ICT'. And that is the PQR approach that delivers success - and has been doing so since the company's founding in 1990.

PQR is headquartered in De Meern, The Netherlands, and counts over 100 employees. In fiscal year 2008/2009 the company posted sales of € 84.6 million and a net after tax profit of € 4.2 million. PQR's clients can be found in all sectors of society. A significant part of our sales is realized in non-profit organizations, the health care industry, education and local and federal government. [www.pqr.com](http://www.pqr.com)

## 1.3 ABOUT THE AUTHOR

Sven Huisman, Consultant PQR

Sven Huisman (1977) studied Information Management in Utrecht. He started his career as system engineer and meanwhile he has over 10 years of experience in the IT business. He is one of PQR's technical Consultants, focusing on Application and Desktop Delivery, hardware and software virtualization.

In addition he is a member of the VRC team (Virtual Reality Check) and has been analyzing several tests of Terminal Services (TS) and hosted VDI workloads running on the latest generation hardware and hypervisors.

Sven advises, designs, implements and migrates advanced ICT-infrastructures. Having achieved the highest certifications of its most important partners, Sven is a Citrix Certified Enterprise Administrator (CCEA), a Microsoft Certified Systems Engineer (MCSE) and a VMware Certified Professional (VCP). Sven is blogging about virtualization on various websites, among which PQR's showcase environment [www.virtuall.nl](http://www.virtuall.nl) and was awarded as VMware vExpert in 2009 and 2010.

You can contact Sven at [shu@pqr.nl](mailto:shu@pqr.nl) or follow him on Twitter: @Svenh

## 2. THINAPP, THE BASICS

Run any version of virtually any application on a single operating system without conflicts. You can even run multiple versions of the same application. Plug VMware ThinApp, formerly known as Thinstall, into your existing management infrastructure and accelerate your software development and desktop deployment. Deliver and deploy applications more efficiently, more securely, and more cost-effectively with agentless application virtualization.

### 2.1 INSTALLATION CONFLICTS

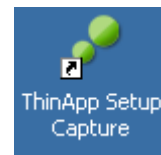
Application virtualization encapsulates the applications from the OS and each other; eliminating costly regression testing and conflicts from badly behaving applications. Just plug in an .MSI or .EXE file to deploy a virtual system environment, including registry keys, DLLs, third-party libraries, and frameworks without requiring any installation of agents or applications on the underlying operating system.

### 2.2 PACKAGE ONCE, DEPLOY EVERYWHERE

Deploy virtualized applications in user mode, without administrative rights. No device drivers are installed and no registry changes are made because the entire application and its virtual OS are delivered as a single EXE file. Transparently stream large applications from a shared network drive with no server or client software to install. Upgrade or roll-back applications while they're running. The new version will execute the next time the user starts the application.

### 2.3 HOW IT WORKS

The "capture" process is straight forward. Start the "ThinApp Setup Capture". This will start the "capture" process. First step is a prescan. A prescan scans the initial state of the hard drive and registry files to create a baseline of the system environment. After the prescan, the application can be installed as it would normally would be installed. When the application is installed, a Postscan is started to scan the changes on the hard drive and in the registry. Finally, you can build the application. The build process will create a single EXE file (optionally with a DAT file) that can be started locally or streamed from a network share.



## 3. STREAMING AND MSI DEPLOYMENT

### 3.1 STREAMING

ThinApp can be used in two ways: streamed or run from local disk. When deploying ThinApp applications you have to decide which method will be used. It will depend on the endpoint, use case and application which method will be used. In an enterprise organization, most of the times streaming will be preferred. There is a whitepaper published by VMware that describes the streaming execution mode:

[http://www.vmware.com/files/pdf/VMware\\_ThinApp\\_Streaming\\_Execution\\_Mode\\_Information\\_Guide.pdf](http://www.vmware.com/files/pdf/VMware_ThinApp_Streaming_Execution_Mode_Information_Guide.pdf)

### 3.2 MSI

When ThinApp applications are run from local disk (when offline usage is required for example), the deployment of the applications can be as simple as copying the executables to the local disk. There is however an option to build a MSI file during the build of a ThinApp application. This MSI can be deployed in several ways. Before building a ThinApp project, edit the package.ini to create a MSI file. There is one MSI-parameter that is mandatory to create a MSI file:

- MSIFilename=Filename.msi

Other parameters are also present in the package.ini, but these are not required.

## 4. DEPLOYMENT METHODS

There are many ways to deploy ThinApps to endpoints. Depending on the type of endpoint, ((virtual) desktop, laptop, terminal server) you can choose one or more deployment methods as described in this chapter.

To demonstrate the deployment options of ThinApp, Acrobat Reader is "ThinApped" and deployed in different ways. Two things are important to accomplish with the deployment: a shortcut to the application and a file type association. The removal of the application should also be possible.

### 4.1 DEPLOY WITH THINREG

#### 4.1.1 Introduction

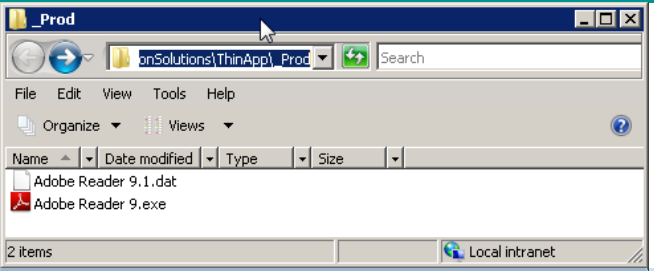
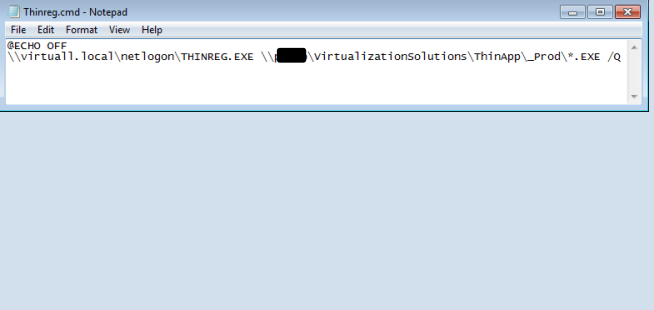
Thinreg is an application which is included with ThinApp. You can use Thinreg to add shortcuts to the startmenu and desktop and add filetype associations to the desktops. The easiest way to use Thinreg is to add it to a logon script.

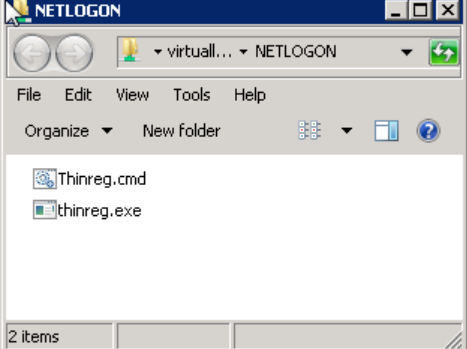
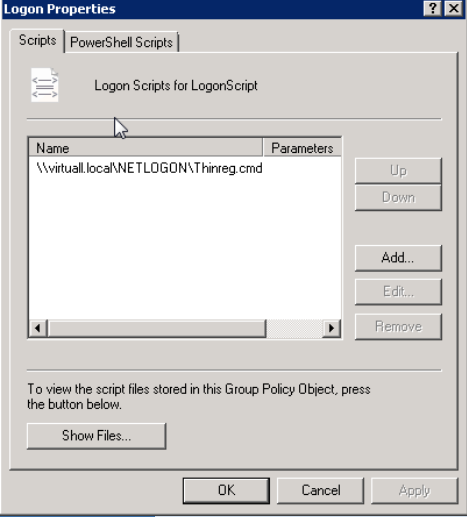

#### 4.1.2 Requirements

- A network share.
- The possibility to use a logon script. You can also start Thinreg manually or give users access to a batch file, which users can start manually.

#### 4.1.3 Steps to take

The following steps are required to take when deploying ThinApp applications with Thinreg:

Step	Screenshot
<p>Store the executable on a network share. Users should have Read access to this share.</p>	
<p>Create a logon script that queries applications entitled to the user and runs the thinreg.exe utility with the option that registers the applications on the local machine. The usage of thinreg in a logon script is as follow:</p> <pre data-bbox="343 1637 767 1697"> THINREG.EXE &lt;UNC or Drive\Path&gt;\*.EXE&gt; /Q </pre>	

Step	Screenshot
<p>Put the logon script and thinreg.exe in the NETLOGON folder.</p>	
<p>Create a group policy at the OU where the users are located. Configure a logon script that starts the "Thinreg" script.</p> <p><i>User Configuration\Policies\Windows Settings\Scripts (Logon/Logoff)\Logon</i></p>	
<p>When a user logs in to the desktop, the login script will execute the Thinreg command. The shortcuts and filetype associations will be registered for the user as provided in the package.ini from the application.</p>	

There is also a script that will register Thinapp executables located in subfolders. You can find it here: <http://blogs.vmware.com/thinapp/2009/10/thinreg-recursive-folder-script.html>

#### 4.1.4 Advantages en disadvantages

Advantages	Disadvantages
<p>Easy deployment.</p> <p>Shortcuts and FTA are automatically configured.</p> <p>Applications are streamed to the users, this will save diskspace, especially in a VDI-scenario.</p>	<p>Shortcuts and FTA are configured in the package. If you want to change this, you must rebuild the application.</p>

## 4.2 DEPLOY WITH VMWARE VIEW

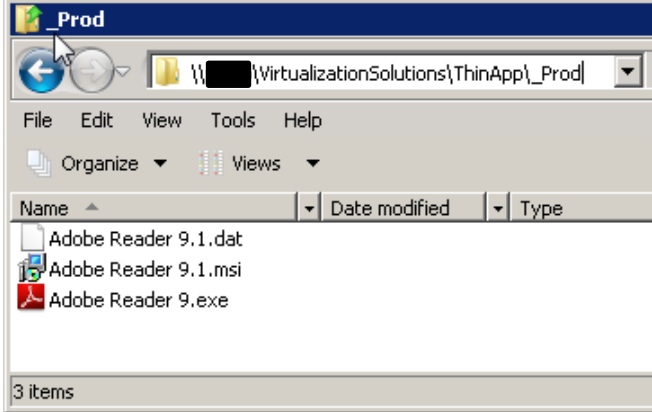
### 4.2.1 Introduction

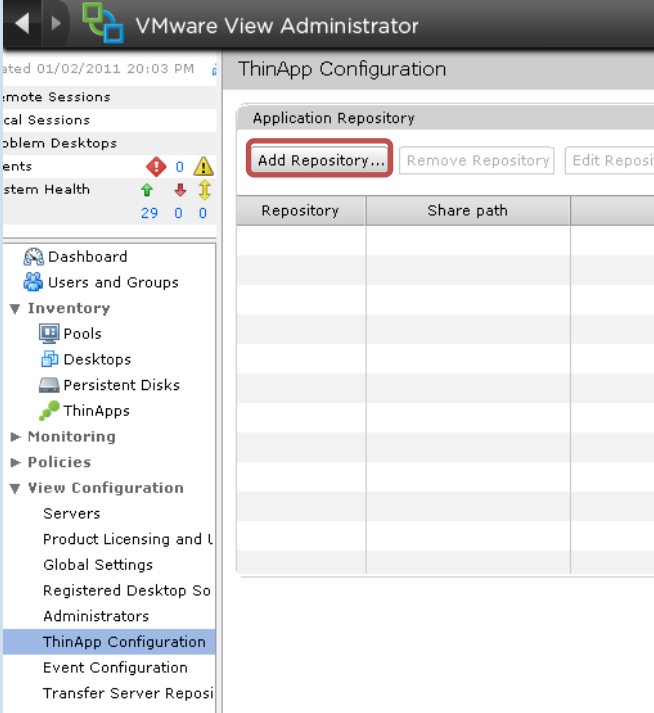
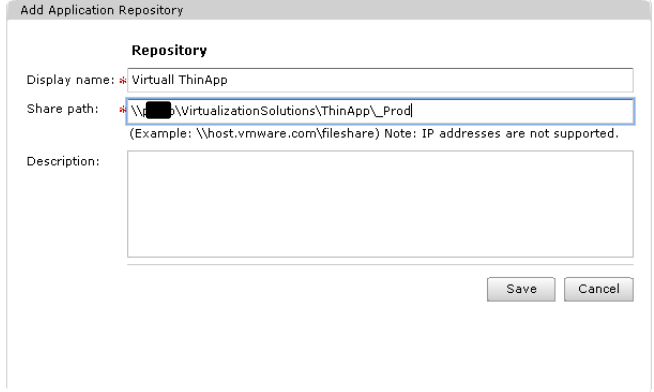
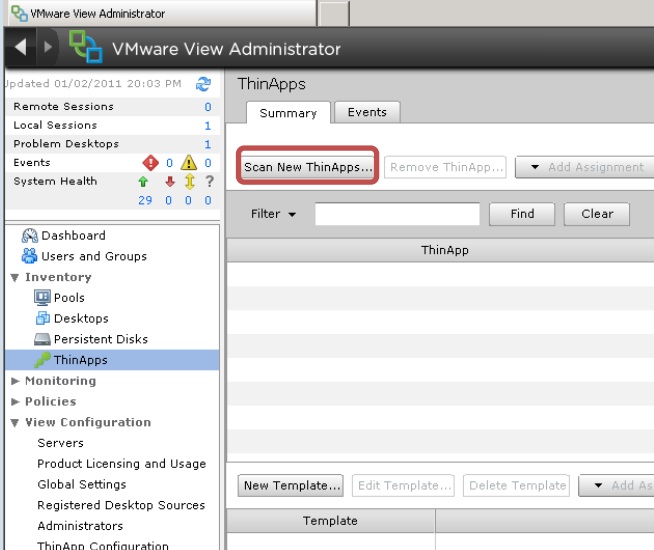
VMware View (4.5 or higher) can be used to deploy ThinApp applications to desktops. From the VMware View administrator console a ThinApp repository is added and the ThinApp applications can be copied to the desktops or streamed to the desktops.

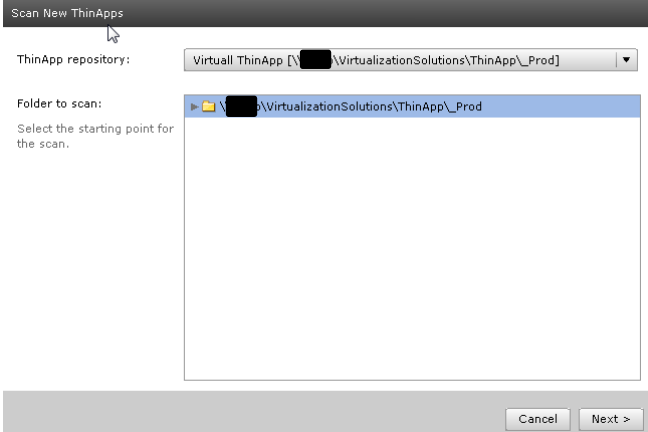
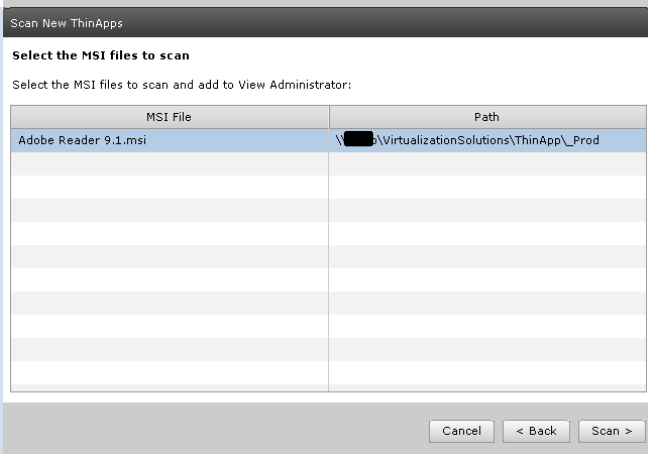
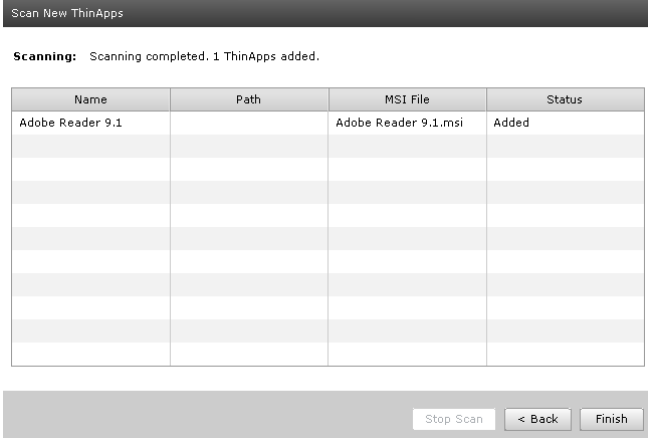
### 4.2.2 Requirements

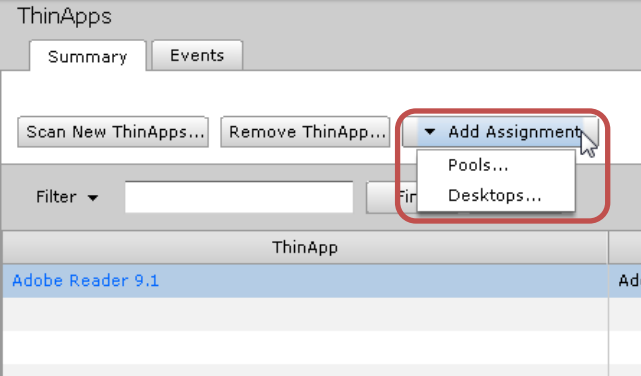
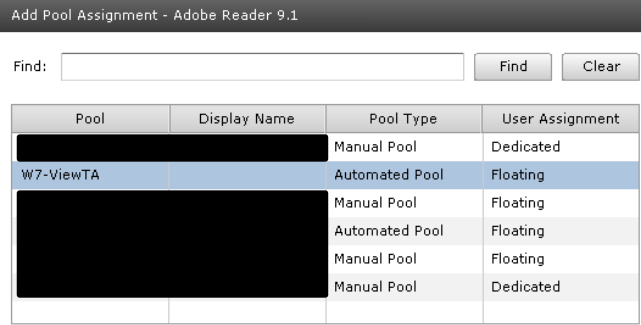
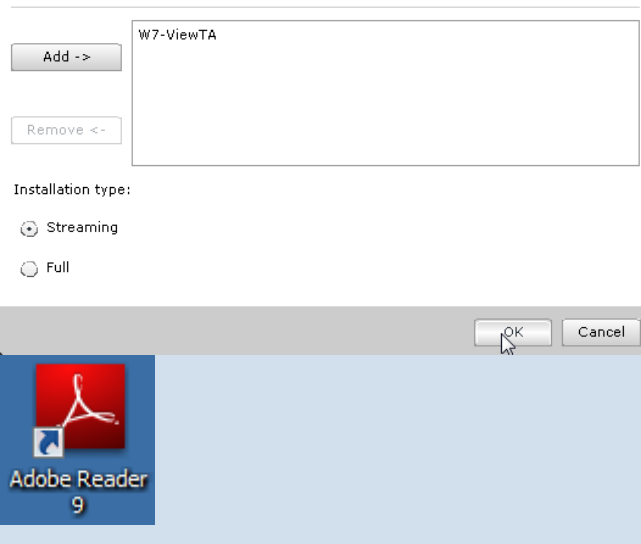
- VMware View 4.5 or higher.
- VMware View agent must be installed.
- Network share.
- Active Directory is required for VMware View.

### 4.2.3 Steps to take

Step	Screenshot
<p>Build the ThinApp application with the option to create a MSI file. Also add the following line to the package.ini:</p> <pre>[BuildOptions] MSIStreaming=1</pre> <p>This will make sure that the actual package is not included in the MSI, but it will only include a reference to the executable located on the network.</p> <p>Store the MSI on a network share Store the executable on a network share. Users should have Read access to this share.</p>	 <p>The screenshot shows a Windows Explorer window titled '_Prod'. The address bar displays the path: \\[redacted]\VirtualizationSolutions\ThinApp\_Prod. The window contains a menu bar (File, Edit, View, Tools, Help) and a toolbar with 'Organize' and 'Views' buttons. Below the toolbar is a table with columns for 'Name', 'Date modified', and 'Type'. The table lists three items: 'Adobe Reader 9.1.dat', 'Adobe Reader 9.1.msi', and 'Adobe Reader 9.exe'. At the bottom of the window, it indicates '3 items'.</p>

Step	Screenshot
<p>Go to the VMware View Administrator page. Select "View Configuration   ThinApp Configuration" and then click on "Add Repository..."</p>	
<p>Enter the share path where the ThinApp applications are located. Click on "Save".</p>	
<p>Now go to "Inventory   ThinApps". Click on "Scan New ThinApps..."</p>	

Step	Screenshot																																				
<p>Select the ThinApp repository and then select the folder to scan. Click on Next.</p>																																					
<p>Select the MSI to scan and click "Scan &gt;".</p>	 <table border="1" data-bbox="799 813 1437 1099"> <thead> <tr> <th>MSI File</th> <th>Path</th> </tr> </thead> <tbody> <tr> <td>Adobe Reader 9.1.msi</td> <td>\\...\\VirtualizationSolutions\\ThinApp\\_Prod</td> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	MSI File	Path	Adobe Reader 9.1.msi	\\...\\VirtualizationSolutions\\ThinApp\\_Prod																																
MSI File	Path																																				
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<p>The ThinApp application is now added to the repository. Click "Finish".</p>	 <p><b>Scanning:</b> Scanning completed. 1 ThinApps added.</p> <table border="1" data-bbox="799 1252 1437 1529"> <thead> <tr> <th>Name</th> <th>Path</th> <th>MSI File</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Adobe Reader 9.1</td> <td></td> <td>Adobe Reader 9.1.msi</td> <td>Added</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Name	Path	MSI File	Status	Adobe Reader 9.1		Adobe Reader 9.1.msi	Added																												
Name	Path	MSI File	Status																																		
Adobe Reader 9.1		Adobe Reader 9.1.msi	Added																																		

Step	Screenshot
<p>Now select the ThinApp application and click on "Add Assignment". You can choose to assign the application to pools and to desktops.</p>	
<p>In this example a desktop pool named "W7-ViewTA" is chosen. You can select to stream the ThinApp application or to copy the executable to the desktops (Full). In this case, "Streaming" is selected.</p> <p>Note: You can only select streaming, when "MSIStreaming=1" is added to the package.ini.</p>	
<p>When a user logs on to the desktop, the login script will execute the Thinreg command. The shortcuts and filetype associations will be registered for the user as provided in the package.ini from the application.</p>	

### 4.2.4 Advantages en disadvantages

Advantages	Disadvantages
<p>Integrated into the VMware View Administrator console. Applications can be "installed" or can be streamed.</p>	<p>You can only assign applications to desktops and pools, not to users. Shortcuts and FTA are configured in the package. If you want to change this, you must rebuild the application.</p>

## 4.3 DEPLOY WITH ACTIVE DIRECTORY (MSI INSTALL)

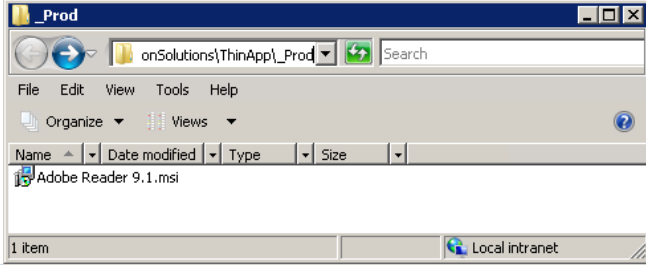
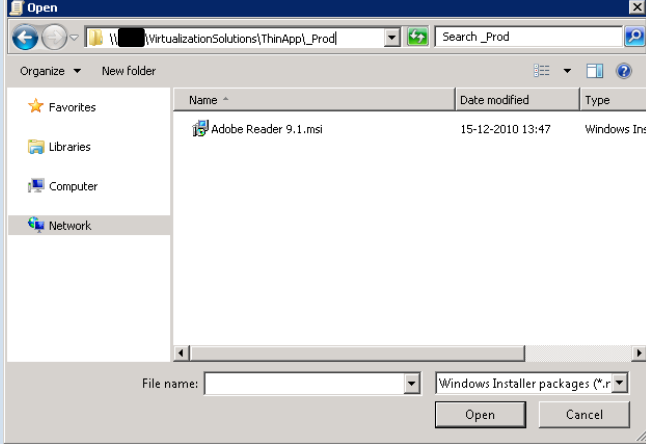
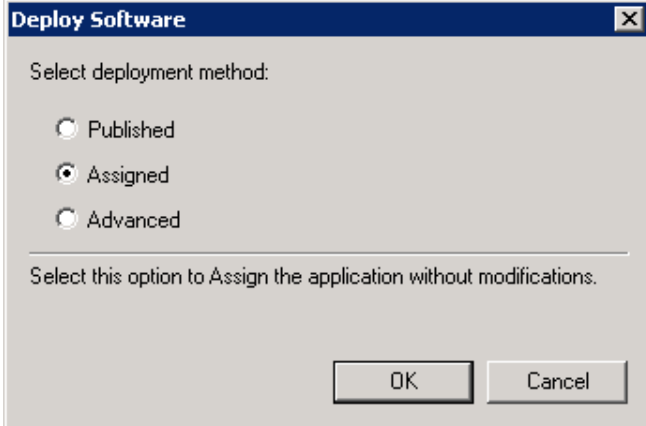
### 4.3.1 Introduction

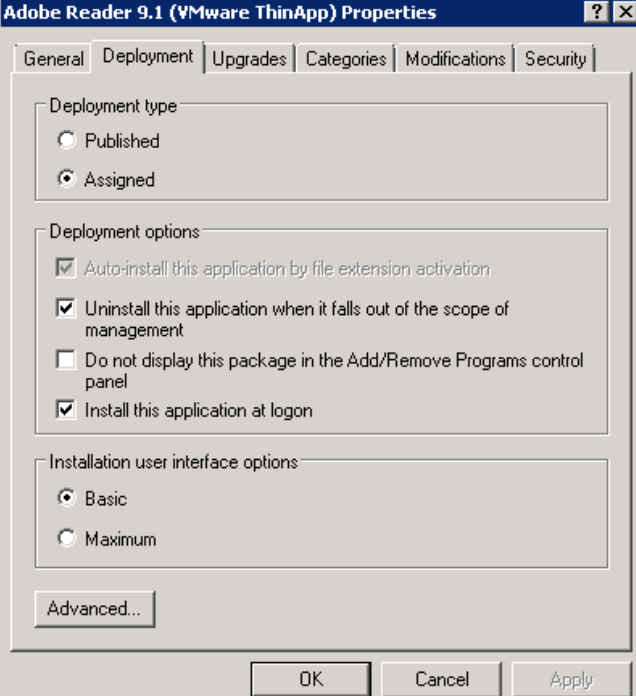

The MSI created during the build process can be used to deploy the ThinApp application. One of the methods is to use an Active Directory Group Policy.

### 4.3.2 Requirements

- Microsoft Active Directory
- A network share

### 4.3.3 Steps to take

Step	Screenshot
<p>Build the ThinApp application with the option to create a MSI file. Store the MSI on a network share. Users should have Read access to this share.</p>	
<p>Configure a group policy and link it to the OU where the user is located. Configure a Software Installation Package:</p> <p><i>User Configuration\Policies\Software Settings</i></p> <p>Right-click "Software Installation" and select "New\Package..."</p> <p>Select the MSI package created during the build of the ThinApp application.</p>	
<p>Select "Assigned" to assign the application to the users. Click on "OK".</p>	

Step	Screenshot
<p>Now right-click on the application and select properties. Select the "Deployment"-tab. Select the following options:</p> <ul style="list-style-type: none"> <li>- Uninstall this application when it falls out of the scope of management</li> <li>- Install this application at logon</li> <li>- Installation user interface options: Basic</li> </ul> <p>Click on "OK".</p>	
<p>When a user logs on to the desktop, the Software Installation group policy will "install" the application for the user. The executable is copied to the local disk and the shortcuts and filetype associations will be registered for the user as provided in the package.ini from the application.</p>	

#### 4.3.4 Advantages en disadvantages

Advantages	Disadvantages
Deploy applications to users.	Streaming applications is not an option. ThinApp applications will be copied to the local disk.
Shortcuts and FTA are automatically configured.	Shortcuts and FTA are configured in the package. If you want to change this, you must rebuild the application.

## 4.4 DEPLOY WITH GROUP POLICY PREFERENCES (STREAM)

### 4.4.1 Introduction

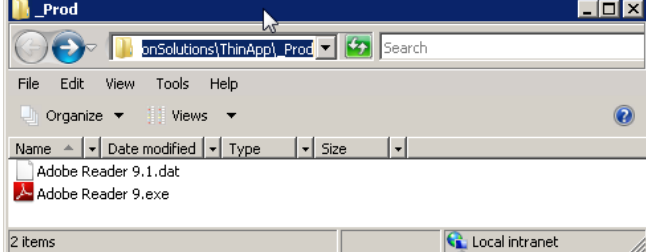
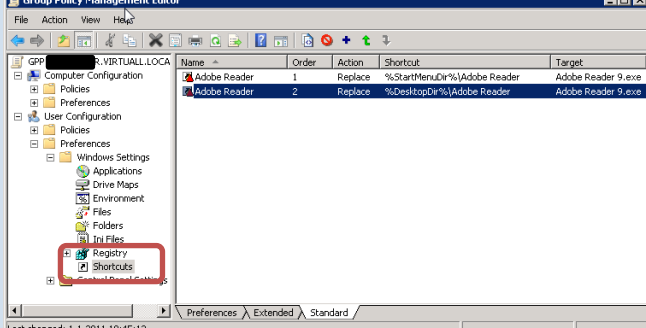
Group Policy preferences, new for the Windows Server 2008 operating system, include more than 20 new Group Policy extensions that expand the range of configurable settings within a Group Policy object (GPO). These new extensions are included in the Group Policy Management Editor window of the Group Policy Management Console (GPMC), under the new Preferences item. Examples of the new Group Policy preference extensions include folder options, mapped

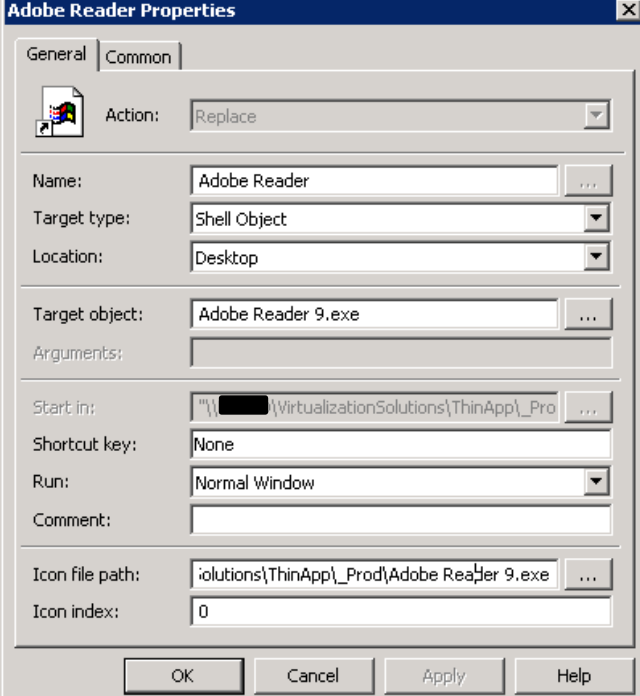
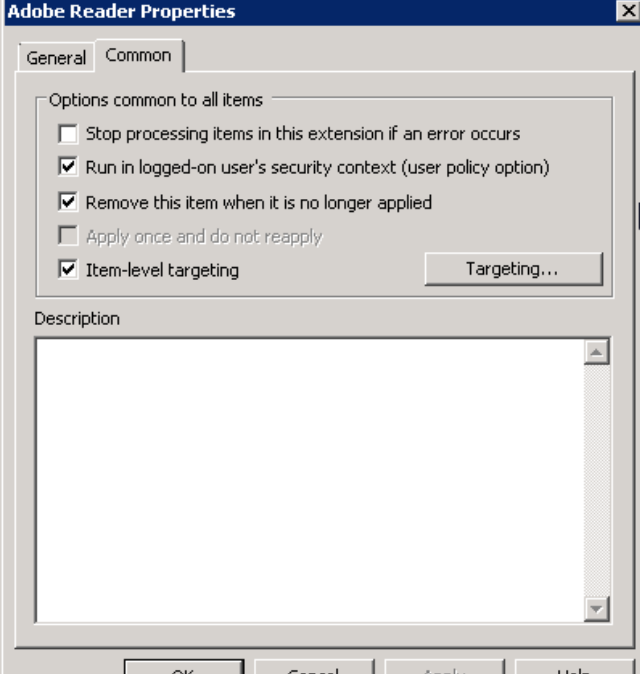
drives, printers, scheduled tasks, services, and Start menu settings. Shortcuts and file type association is also an option and these are the two needed to deploy ThinApp applications.

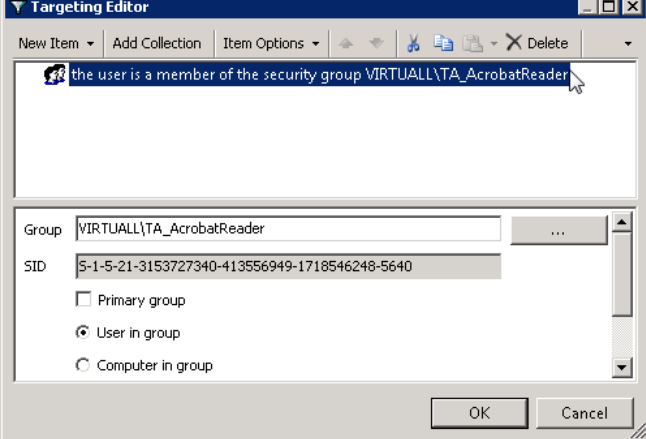
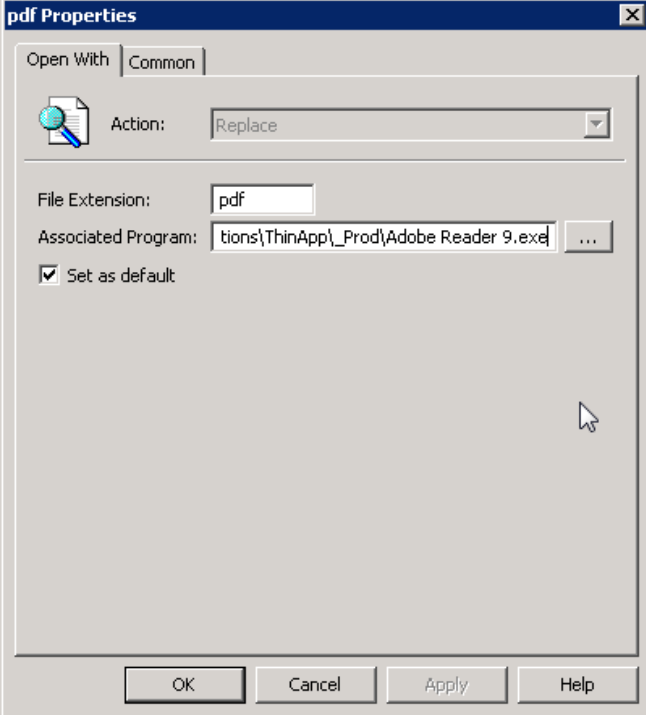
### 4.4.2 Requirements

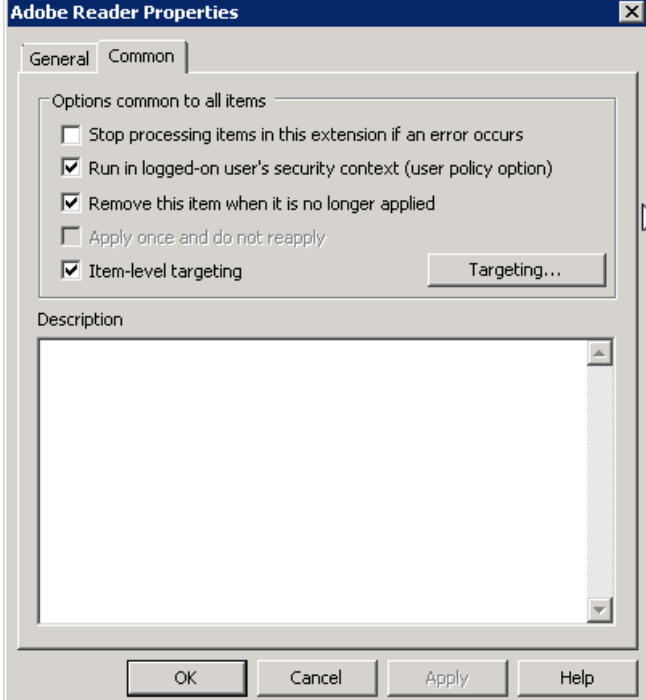

- Client-side extensions (CSEs) on client computers with XP (SP2 or higher), Windows 2003 (SP1 or higher) or Vista.
- XMLLite low-level XML parser on client computers with XP (SP2 or higher), Windows 2003 (SP1 or higher).
- Active Directory 2008 or higher.
- A network share.

### 4.4.3 Steps to take

Step	Screenshot
<p>Store the executable on a network share. Users should have Read access to this share.</p>	
<p>Create a group policy object and link it to the OU where the users are located. Configure Group Policy Preferences (GPP) to create shortcuts on the desktop and in the start menu.</p> <p><i>User Configuration\Preferences</i> <i>Windows Settings\Shortcuts</i></p>	

Step	Screenshot
<p>Right-click on "Shortcuts" and select "New&gt;Shortcut". Type in a name for the shortcut and select "Shell Object". The "target object" should be the ThinApp application located on the network share.</p>	
<p>Now go to the "Common" tab. Select all options except the first one. Select "Targeting...". With this option you can configure who gets the shortcut.</p>	

Step	Screenshot
<p>In this case, this option is configured so that only members of the group "TA_AcrobatReader" gets the shortcut for the application.</p>	 <p>The screenshot shows the 'Targeting Editor' window. The 'Group' field is set to 'VIRTUALL\TA_AcrobatReader'. The 'SID' field shows 'S-1-5-21-3153727340-413556949-1718546248-5640'. The 'User in group' radio button is selected. The 'OK' button is visible at the bottom right.</p>
<p>Next to configure is File Type Association. With Group Policy Preferences it's possible to associate a file type with an application. Go to: <i>User Configuration\Preferences\Control Panel Settings</i></p> <p>Right-click "Folder Options" en select "New&gt;Open With"</p> <p>Action: replace File Extension: pdf Associated Program: the UNC path to the ThinApp application of Adobe Reader.</p>	 <p>The screenshot shows the 'pdf Properties' dialog box. The 'Open With' tab is active. The 'Action' dropdown is set to 'Replace'. The 'File Extension' field contains 'pdf'. The 'Associated Program' field contains 'tions\ThinApp\_Prod\Adobe Reader 9.exe'. The 'Set as default' checkbox is checked. The 'OK' button is visible at the bottom left.</p>

Step	Screenshot
<p>As with the shortcuts, you should select the "Common" tab and configure Item-level targeting, so only members of the group "TA_AcrobatReader" gets the FTA for the application.</p>	
<p>When a user logs on to the desktop, the group policy configured for the shortcuts and filetype associations will be processed and the user can access the application. Now when the user is removed from the group, the next time the user logs in, the shortcuts and FTA will be removed as well.</p>	

#### 4.4.4 Advantages en disadvantages

Advantages	Disadvantages
<p>Shortcuts and File type associations are configured and managed centrally.            Application assignment can be targeted to different types of target, including users, security groups or sites.</p>	<p>More manual work to add all shortcuts and file types.</p>



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