

ThinApp Factory Installation

This document supports the version of each product listed and supports all subsequent versions until the document is replaced by a new edition. To check for more recent editions of this document, see <http://www.vmware.com/support/pubs>.

EN-000708-00

vmware[®]

You can find the most up-to-date technical documentation on the VMware Web site at:

<http://www.vmware.com/support/>

The VMware Web site also provides the latest product updates.

If you have comments about this documentation, submit your feedback to:

docfeedback@vmware.com

Copyright © 2012 VMware, Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/go/patents>.

VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware, Inc.
3401 Hillview Ave.
Palo Alto, CA 94304
www.vmware.com

Contents

ThinApp Factory Installation	5
ThinApp Factory System Requirements	5
Installing ThinApp Factory on Workstation	7
Installing ThinApp Factory in vSphere	8
Post-Installation Tasks	10
Install Additional Instances of ThinApp Factory	15
Index	17

ThinApp Factory Installation

ThinApp Factory Installation explains how to install a ThinApp Factory virtual appliance and configure a ThinApp Factory workpool. You can install a virtual appliance and create a workpool of Windows virtual machines in a VMware® vSphere or VMware Workstation environment.

Intended Audience

This information is intended for anyone who wants to install and configure ThinApp Factory. The information is written for experienced Windows administrators who are familiar with virtual machine technology and Windows application packaging.

ThinApp Factory System Requirements

ThinApp Factory software runs on a Debian GNU/Linux 6.0 virtual appliance that must be installed in a vSphere or Workstation environment. ThinApp Factory generates application packages using Windows virtual machines that must be configured in the same vSphere or Workstation environment.

VMware Virtualization Software Requirements for ThinApp Factory

The vSphere or Workstation environment in which you install ThinApp Factory has certain minimum requirements.

Table 1. Virtualization Software Support for ThinApp Factory

Virtualization Software	Version
vSphere	4.1 U1 or later
	5.0 or later
The computer on which you run the ThinApp Factory installer must have network access to the vCenter Server computer.	
Workstation	8.0 or later
The host system on which Workstation is installed must have at least two CPUs.	

Storage Requirements for ThinApp Factory Components

ThinApp Factory components require a certain minimum storage space on a vSphere datastore or the Workstation host computer.

- The ThinApp Factory virtual appliance requires at least 500MB of space.
- By default, each Windows XP and Windows 7 virtual machine in a workpool is pre-allocated with 20GB of storage. Your storage requirements depend on the number of workpools and maximum number of virtual machines per workpool that you configure.

- The storage requirements for ThinApp application packages depend on the type, size, and number of applications that you package. In vSphere, we recommend that you allow 80GB of space. In Workstation, you might allow a much smaller space to test the building of a few application packages.

In a production vSphere environment, in addition to the datastore that you select during installation, we recommend that you configure a CIFS share as the default datastore for your ThinApp package output. As a best practice, allocate at least 100GB of storage for the CIFS share.

Supported Operating Systems for a Workpool Virtual Machine

The virtual machines that ThinApp Factory creates as instances in a workpool must run a supported operating system. ThinApp Factory uses workpool virtual machines to convert application installations into ThinApp packages.

Table 2. Operating System Support for ThinApp Factory Workpool Virtual Machines

Operating System	Version	Edition	Service Pack
Windows 7	32-bit	Professional, Enterprise, Ultimate	None and SP1
Windows XP	32-bit	Professional	SP3

Browser Requirements for ThinApp Factory

You run ThinApp Factory by browsing to the ThinApp Factory virtual appliance. To use ThinApp Factory, you must have one of the following Web browsers:

- Internet Explorer 8 or 9
- Firefox 3.5 or later
- Chrome 11.0 or later (not available in the Beta release)

Supported Operating Systems for the ThinApp Factory Installer

The virtual machine or physical computer on which you run the ThinApp Factory installer must run in a supported operating system.

Table 3. Operating System Support for the ThinApp Factory Installer

Operating System	Version	Edition	Service Pack
Windows 7	32-bit and 64-bit	Professional, Enterprise, Ultimate	None and SP1
Windows XP	32-bit and 64-bit	Professional	SP3

Supported VMRC Plug-in

To use the ThinApp Factory manual capture feature, you must install the VMware Remote Console (VMRC) plug-in on the system on which you browse to ThinApp Factory. The supported VMRC version is 428727.

Installing ThinApp Factory on Workstation

You can install ThinApp Factory on Workstation to test the features and capabilities of ThinApp Factory. When you run the installer, Workstation creates a Linux virtual appliance on which the ThinApp Factory software is installed.

Worksheet for Installing ThinApp Factory on Workstation

The ThinApp Factory installer prompts you to configure certain options for the ThinApp Factory appliance that will be created on Workstation. Use this worksheet to prepare your configuration options before you begin the installation.

Table 4. Worksheet: Configuration Options for Installing ThinApp Factory on Workstation

Option	Description	Fill in Your Value Here
Administrator user name and password	The username and password that provide administrator credentials for the computer on which Workstation is installed.	
Appliance host name	The computer name of the virtual appliance on which the ThinApp Factory software will be installed.	
Internet connection settings	<p>If your organization's network connects directly to the Internet, select My network has a direct connection to the Internet in the installer wizard.</p> <p>If your organization uses an HTTP proxy to connect to the Internet, take these steps in the installer wizard:</p> <ul style="list-style-type: none"> ■ Select My network uses an HTTP proxy to access the Internet. ■ Specify your proxy host and port number. ■ Specify exception domains that do not connect through your proxy server. 	
ThinApp license key and license display name	<p>The 25-character Enterprise license key and display name that are required to install and run ThinApp.</p> <p>ThinApp Factory uses ThinApp version 4.7 to capture application installations and package applications.</p> <p>The ThinApp license display name appears whenever a user starts a virtual application generated by ThinApp Factory.</p>	

Install ThinApp Factory on Workstation

You can install the ThinApp Factory appliance on Workstation by running the ThinApp Factory installer.

Prerequisites

- Verify that Workstation 8.0 or later is installed on your system.
- Verify that the host system on which Workstation is installed has at least two CPUs.
- Gather the configuration information you must provide to the ThinApp Factory installer. See [“Worksheet for Installing ThinApp Factory on Workstation,”](#) on page 7.

Procedure

- 1 Download the ThinApp Factory installer file from the VMware product page at <http://www.vmware.com/products/> to the system where Workstation is installed.
The installer filename is `ThinApp-Factory-Setup-e.x.p-build`, where *build* is the release build number.
- 2 Double-click the installer file.

- 3 Select the **Deploy a new ThinApp Factory virtual appliance** option.
- 4 On the Select Destination page, select **VMware Workstation 8.0 or higher**.
- 5 Follow the prompts in the ThinApp Factory installation wizard and finish the installation.
- 6 Keep a record of the IP address of the ThinApp Factory virtual appliance.

The IP address is displayed on the installer Finish page. You use this IP address to browse to ThinApp Factory.

The installer asks if you want to display the release notes, save the installation profile to a file, and start a Web browser to display the ThinApp Factory UI.

What to do next

Start ThinApp Factory in a Web browser by browsing to the IP address of the appliance.

Perform the configuration tasks required to use ThinApp Factory. You must create a workpool. To use the manual capture feature, you must install the VMRC plug-in. See [“Post-Installation Tasks,”](#) on page 10.

If you save the installation profile to a file, you can use the profile to install other instances of ThinApp Factory with the same attributes you used during this installation. See [“Install Additional Instances of ThinApp Factory,”](#) on page 15.

Installing ThinApp Factory in vSphere

You can install ThinApp Factory on a vSphere platform, which provides a production environment for generating and managing ThinApp packages. When you run the installer, vCenter Server creates a Linux virtual appliance on which the ThinApp Factory software is installed.

Worksheet for Installing ThinApp Factory in vSphere

The ThinApp Factory installer prompts you to configure certain options for the ThinApp Factory appliance that will be created in vSphere. Use this worksheet to prepare your configuration options before you begin the installation.

Table 5. Worksheet: Configuration Options for Installing ThinApp Factory in vSphere

Option	Description	Fill in Your Value Here
IP address/Name	The IP address or fully qualified domain name (FQDN) of the vCenter Server instance that will manage the ThinApp Factory appliance, workpool virtual machines, and other ThinApp Factory components.	
vCenter Server user name and password	The administrator username and password that you use to log in to vCenter Server.	
ESXi host or cluster	The ESXi host or cluster on which the ThinApp Factory appliance and the workpool virtual machines are installed.	

Table 5. Worksheet: Configuration Options for Installing ThinApp Factory in vSphere (Continued)

Option	Description	Fill in Your Value Here
Datastore	<p>The vCenter Server datastore that stores the ThinApp Factory virtual machines and output data.</p> <p>The datastore must have available capacity to store the following ThinApp Factory components:</p> <ul style="list-style-type: none"> ■ The ThinApp Factory virtual appliance. <p>Allow approximately 500MB for the virtual appliance.</p> ■ The maximum number of virtual machines that you configure in all the ThinApp Factory workpools that you configure. <p>Allow 20GB for each Windows XP and Windows 7 virtual machine.</p> ■ The ThinApp application packages that are generated when applications are installed and built from this ThinApp Factory appliance. 80GB of space are recommended. 	
Appliance host name	<p>The computer name of the virtual appliance on which the ThinApp Factory software will be installed.</p> <p>Use a host name that can be resolved with a DNS suffix, or a fully qualified domain name (FQDN), so that the host name resolves to the virtual appliance IP address.</p> <p>With a resolvable host name, you can start ThinApp Factory by typing the host name in a browser instead of using the virtual appliance IP address.</p>	
Appliance IP configuration settings	<p>The IP address and related IP configuration settings for the ThinApp Factory virtual appliance.</p> <p>Provide the following settings:</p> <ul style="list-style-type: none"> ■ IP address. You must use a static IP address for the virtual appliance. ■ Subnet mask ■ Gateway ■ DNS server 1 ■ DNS server 2 ■ DNS suffix. The DNS suffix is optional. If you do not provide an FQDN for the appliance host name, provide a DNS suffix so that the host name is resolvable. 	
Internet connection settings	<p>If your organization's network connects directly to the Internet, select My network has a direct connection to the Internet in the installer wizard.</p> <p>If your organization uses an HTTP proxy to connect to the Internet, take these steps in the installer wizard:</p> <ul style="list-style-type: none"> ■ Select My network uses an HTTP proxy to access the Internet. ■ Specify your proxy host and port number. ■ Specify exception domains that do not connect through your proxy server. 	
ThinApp license key and license display name	<p>The 25-character Enterprise license key and display name that are required to install and run ThinApp.</p> <p>ThinApp Factory uses ThinApp version 4.7 to capture application installations and package applications.</p> <p>The ThinApp license display name appears whenever a user starts a virtual application generated by ThinApp Factory.</p>	

Install ThinApp Factory in vSphere

You can install the ThinApp Factory appliance in a vSphere environment by running the ThinApp Factory installer.

Prerequisites

- Verify that vSphere 4.1 U1 or later is installed on your system.
- Verify that the system on which you run the ThinApp Factory installer has network access to the vCenter Server computer.
- Gather the configuration information you must provide to the ThinApp Factory installer. See [“Worksheet for Installing ThinApp Factory in vSphere,”](#) on page 8.

Procedure

- 1 Download the ThinApp Factory installer file from the VMware product page at <http://www.vmware.com/products/> to the system on which you will run the installer.
The installer filename is `ThinApp-Factory-Setup-e.x.p-build`, where *build* is the release build number.
- 2 Double-click the installer file.
- 3 Select the **Deploy a new ThinApp Factory virtual appliance** option.
- 4 On the Select Destination page, select **VMware vSphere 4.1 U1 or higher**.
- 5 Follow the prompts in the ThinApp Factory installation wizard and finish the installation.
- 6 Keep a record of the IP address of the ThinApp Factory virtual appliance.

The IP address is displayed on the installer Finish page. You use this IP address to browse to ThinApp Factory.

If you provided a resolvable ThinApp Factory virtual appliance host name, you can also use the host name to browse to ThinApp Factory.

The installer asks if you want to display the release notes, save the installation profile to a file, and start a Web browser to display the ThinApp Factory UI.

What to do next

Start ThinApp Factory in a Web browser by browsing to the IP address of the appliance.

Perform the configuration tasks required to use ThinApp Factory. You must create a workpool. To use the manual capture feature, you must install the VMRC plug-in. In a production environment, configure a CIFS share to store ThinApp packages. See [“Post-Installation Tasks,”](#) on page 10.

If you save the installation profile to a file, you can use the profile to install other instances of ThinApp Factory with the same attributes you used during this installation. See [“Install Additional Instances of ThinApp Factory,”](#) on page 15.

Post-Installation Tasks

After you install ThinApp Factory, you must configure workpools and install the VMRC plug-in. In a production vSphere environment, we recommend that you configure a CIFS share for your ThinApp package output.

Related topics:

- [“Configuring ThinApp Factory Workpools,”](#) on page 11
- [“Install the VMRC Plug-in,”](#) on page 13

- [“Configure a CIFS Share for ThinApp Package Output,”](#) on page 14

Configuring ThinApp Factory Workpools

A workpool is a dynamically managed pool of Windows virtual machines that you use to convert application installers into ThinApp packages. You must configure at least one workpool to allow ThinApp Factory to create ThinApp packages.

ThinApp Factory dynamically clones multiple workpool virtual machines up to the maximum number that you configure, allowing you to generate multiple ThinApp packages in parallel. For details, see [“Building ThinApp Packages with Workpools,”](#) on page 13.

All the virtual machines in a workpool run the same Windows operating system version. If you manage different applications that must be installed and run in particular Windows versions, you must create a separate workpool for each Windows version that you require.

Preparing a Source ISO Image or Virtual Machine

When you configure a workpool, you must select a source ISO image or existing virtual machine that ThinApp Factory uses to create the virtual machines in the new workpool.

You can create workpool virtual machines from the following sources:

- An existing virtual machine.
 - This option is available in vSphere only.
 - The virtual machine must run a supported version of Windows XP or Windows 7.
 - VMware Tools must be installed on the virtual machine.
 - The virtual machine must be powered off.
 - Make sure that the virtual machine is in a clean state. Previous application installations might leave registry values and other configuration settings on the virtual machine. These settings might interfere with the building of new application packages.
- A Windows ISO image.
 - This option is available in vSphere or Workstation.
 - The ISO image must be a supported version of Windows XP or Windows 7.
 - In vSphere, upload the ISO image to a network location or datastore that is accessible to your vCenter Server instance.

In Workstation, upload the the ISO image to the Documents > Shared Virtual Machines folder on the Workstation machine.
 - On Workstation platforms, a bridge network is recommended.
- An existing virtual machine image in another workpool.
 - This option is available in vSphere only.
 - The base image is in a clean state because ThinApp Factory clones workpool virtual machines from snapshots of the original virtual machine.
 - The existing workpool and the new workpool that you configure will run the same Windows version.

Configure a Workpool

You configure a workpool of virtual machines in ThinApp Factory to capture installations and generate ThinApp packages.

Prerequisites

- Verify that a ThinApp Factory appliance is installed in your virtualization software platform (vSphere or Workstation).
- Verify that a Windows ISO file or an existing Windows virtual machine is accessible from your vCenter Server or Workstation. See [“Preparing a Source ISO Image or Virtual Machine,”](#) on page 11.
- Verify that you have a valid license key for your Windows virtual machines.

For Windows XP operating systems, you must use a volume license key so that cloned virtual machines do not require activation. For Windows 7, ThinApp Factory can use either MKS or KMS licensing to activate the cloned virtual machines.

- In vSphere, verify that the Sysprep tool is installed on the system on which vCenter Server is installed.

The Sysprep files are installed in the `C:\ALLUSERSPROFILE\Application Data\VMware\VMware VirtualCenter\syprep` folder, where `ALLUSERSPROFILE` is the default profile folder for all users. Sysprep must be installed with vCenter Server so that Windows XP workpool virtual machines can be customized.

- If you use Workstation, log in as a user with administrator privileges on the Workstation machine.

Procedure

- 1 Start ThinApp Factory by typing the IP address or resolvable host name of the ThinApp Factory virtual appliance in a Web browser.

For example, type `http://123.123.123.123`.

- 2 In ThinApp Factory, click **Settings**, select the Workpools tab, and click **Add**.

- 3 Type a name in the **Workpool name** text box.

- 4 Slide the bar to select the maximum number of virtual machines in the workpool.

On Workstation, a workpool can contain only one virtual machine. The slide bar is disabled.

- 5 Select a source ISO image or virtual machine from which ThinApp Factory creates the new virtual machines in the workpool.

Option	Description
Select an existing VM	Select an existing virtual machine as the base image.
Use ISO to create a new VM	Select a Windows ISO image. <ol style="list-style-type: none"> a In vSphere, select a network on which the ISO image is located. Networks available from your vCenter Server instance are displayed. b In vSphere, browse to the ISO location in your datastore and select an ISO image. <p>In Workstation, browse to the Documents > Shared Virtual Machines folder on the Workstation machine and select an ISO image.</p>
Pick a VM image previously created	Select an existing virtual machine in another workpool to use as the base image.

- 6 Select a Windows operating system version for the workpool virtual machines.

- 7 Type a Windows operating system license key.

- 8 Type the user name and organization name that are associated with the Windows license.

- 9 Click **Save**.

ThinApp Factory creates one workpool virtual machine and takes a snapshot of the base image. As you use the workpool to build ThinApp packages, ThinApp Factory clones additional virtual machines from the snapshot.

What to do next

Use ThinApp Factory to add application sources and build, customize, and manage ThinApp packages.

Building ThinApp Packages with Workpools

ThinApp Factory dynamically uses workpools of Windows virtual machines to run application installations and convert them into ThinApp packages.

ThinApp Factory uses workpools in the following operations:

- When you create a ThinApp package, ThinApp Factory selects an available virtual machine in a workpool that is configured with the appropriate Windows operating system version.

ThinApp Factory runs the application installation on the selected virtual machine and converts the installation into a ThinApp package.

- If no virtual machine is available in the workpool, ThinApp Factory dynamically clones a new virtual machine to build the package.

ThinApp Factory clones multiple virtual machines up to the maximum number that you configure, allowing you to create multiple ThinApp packages in parallel.

NOTE On Workstation, a workpool can contain only one virtual machine. ThinApp Factory can create one ThinApp package at a time.

- If the maximum number of virtual machines are building packages concurrently, the build operation for your selected application is placed in a queue until a virtual machine becomes available.
- When the conversion to a ThinApp package is completed, ThinApp Factory stores the package in the vCenter Server datastore or Workstation folder that stores your ThinApp Factory components.

If you configure a CIFS share as the default datastore, ThinApp Factory stores the ThinApp package on the CIFS directory.

Install the VMRC Plug-in

To use the ThinApp Factory manual capture feature, you must install the VMware Remote Console (VMRC) plug-in on the system on which you browse to ThinApp Factory. The VMRC plug-in allows Internet Explorer or Firefox to display a remote console on a virtual machine.

When you select the manual capture feature to convert an application into a ThinApp package, ThinApp Factory runs the application installer interactively in a workpool virtual machine. To respond to the installer prompts, you must have a remote console that can access the workpool virtual machine.

With the VMRC plug-in enabled, when you start the manual capture of an application, ThinApp Factory opens a remote console in your browser that displays the interactive installation.

Prerequisites

Close your Internet Explorer and Firefox browsers. Verify that the `iexplore.exe` and `firefox.exe` processes are not running.

Procedure

- 1 Download the VMRC plug-in installer from the ThinApp Factory Beta Communities page at <http://communities.vmware.com/community/vmttn/beta/thinapp-factory> to the system on which you browse to ThinApp Factory.

The installer filename is `vmware-vmrc-win32-x86-e.x.p.build.exe`, where *build* is the release number build.

- 2 Double-click the installer file.
- 3 Select the browsers you use to browse to ThinApp Factory.
You can add the VMRC plug-in to Internet Explorer and Firefox.
- 4 Follow the prompts in the VMRC plug-in installation wizard and finish the installation.

The VMRC plug-in is enabled on your browsers.

Configure a CIFS Share for ThinApp Package Output

The ThinApp packages generated by ThinApp Factory can quickly use many gigabytes of storage. In a production environment, we recommend that you configure a Common Internet File System (CIFS) share as the default datastore for your ThinApp package output.

When you install ThinApp Factory, the datastore that you select for the ThinApp Factory virtual appliance also stores the ThinApp package output. In a production environment, the appliance datastore can fill up as ThinApp Factory generates package output.

The storage capacity of the CIFS share that you select depends on the type, size, and number of applications that you capture as ThinApp packages. As a best practice, allocate at least 100GB of storage for the CIFS share.

Prerequisites

- Verify that ThinApp Factory is installed in your vSphere environment.
- Verify that your vCenter Server machine has network access to a CIFS share with adequate storage capacity.

Procedure

- 1 Start ThinApp Factory by typing the IP address or resolvable host name of the ThinApp Factory virtual appliance in a Web browser.
For example, type `http://123.123.123.123`.
- 2 In ThinApp Factory, click **Settings**, select the Storage tab, and click **Add**.
- 3 In the **Name** text box, type a name for the CIFS share.
- 4 In the **Type** menu, select **CIFS**.
- 5 In the **Share location** text box, type the UNC path to the CIFS share, including the full path to the CIFS directory.
- 6 Type the username and password of the user that is authenticated to use the CIFS share.

ThinApp Factory stores ThinApp package output on the CIFS share by default.

Install Additional Instances of ThinApp Factory

You can install multiple instances of the ThinApp Factory appliance by using the installation properties you provided in your initial installation.

When you install an instance of ThinApp Factory, in the final installation wizard page you can check the **Save the installation profile to a file** checkbox. The installer saves the initial installation properties in a file with an .afsp extension.

You can use the AFSP file to install additional instances of ThinApp Factory with the same installation properties.

Prerequisites

Verify that you installed an instance of ThinApp Factory and saved the installation properties in an AFSP file.

Procedure

- 1 (Optional) Open the AFSP file in a text editor and review the installation properties.

Take this step if you want to examine the properties before you begin the installation.

- 2 (Optional) Copy the AFSP file to the folder in which the installer file is located.

For example, copy the *filename.afsp* file to the folder that contains the `ThinApp-Factory-Setup-e.x.p-build` file.

Having co-located files simplifies the next step.

- 3 Start the ThinApp Factory installer file and use the AFSP file as an installation argument.

Option	Description
Launch interactively	Drag and drop the AFSP file over the ThinApp Factory installer file.
Use a command line	<ol style="list-style-type: none"> a Open a Command window and navigate to the directory that contains the installer file. b Type the ThinApp Factory installer filename, type a space, and type the AFSP filename. For example: <code>ThinApp-Factory-Setup-e.x.p-build filename.afsp.</code>

The ThinApp Factory installer wizard runs interactively. The installation properties appear in the wizard pages.

- 4 On the ESXi host or cluster page, select an ESXi host or cluster.

The wizard does not select a host or cluster for you. To distribute your workload, you can install the ThinApp Factory appliance on a different ESXi host or cluster than the one selected for the initial instance of ThinApp Factory.

- 5 On the appliance host name page, edit the host name.

The host name of the appliance from the initial installation appears in the text box. To create a valid new instance of a ThinApp Factory appliance, provide a different, resolvable host name.

- 6 Follow the remaining prompts in the installation wizard and finish the installation.

The installer provides a new IP address for the ThinApp Factory appliance if you provided a resolvable host name.

What to do next

Create a workpool for the new instance of the ThinApp Factory appliance. See [“Configure a Workpool,”](#) on page 12.

Index

A

AFSP file, installing multiple ThinApp Factory appliances **15**

C

CIFS share, for package output **14**
configuring ThinApp Factory, after installation **10**

E

ESXi, installing ThinApp Factory **8**

I

installation
 configuration for installing in vSphere **8**
 configuration for installing on Workstation **7**
 intended audience **5**
 prerequisites **5**
 running the installer for vSphere **10**
 running the installer for Workstation **7**
 system requirements **5**
ISO image, source for a workpool **11**

M

manual capture, installing the VMRC plug-in **13**

S

system requirements **5**

T

tasks, required after installation **10**
ThinApp Factory appliance, installing multiple instances **15**
Thinapp packages, creating with workpools **13**

V

vCenter Server, installing ThinApp Factory **8**
virtual machine, source for a workpool **11**
VMRC, installing the plug-in **13**
VMware Remote Console plug-in, installing **13**
vSphere
 installation worksheet **8**
 installing ThinApp Factory **8**
 running the ThinApp Factory installer **10**

W

workpool
 adding **12**
 and ThinApp packages **13**

 configuring **11**

 source ISO image **11**

Workstation

 installation worksheet **7**

 installing ThinApp Factory **7**

 running the ThinApp Factory installer **7**

