

Getting Started



Citrix[®] Installation Manager[™]

**Application Packaging and Delivery
for MetaFrame XP[™] for Windows, Feature Release 2**

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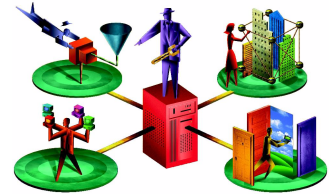
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Welcome



Welcome to Citrix Installation Manager (Installation Manager) for MetaFrame XP 1.0 Application Server for Windows Feature Release 2 (MetaFrame XP Feature Release 2), the Application Packaging and Delivery feature type that lets you easily install application *packages* on the servers in your MetaFrame XP server farm from a central location.

Installation Manager is a MetaFrame XP feature that allows you, the administrator, to add and install packages on target MetaFrame XP servers and perform the following tasks using Citrix Management Console (the console):

- Retrieve an *Application Deployment File (ADF)* or *Microsoft Installer (MSI)* package from a network share point
- Add a package to the Installation Manager database
- Schedule a package for installation and install the package
- Publish and install an application
- Uninstall a package

The packaging component of Installation Manager, the Citrix Packager utility (Packager), allows you to create ADF packages that can include:

- Legacy or custom applications
- Compatibility scripts
- Other files such as service packs, software upgrades, patches, and so on

Important Before you install MetaFrame XP and Installation Manager, follow the requirements in the *MetaFrame XP Administrator's Guide*, then read the `Installation_Manager_Readme.txt` file in the `\Docs` directory at the root of the distribution CD-ROM. This file contains important information that includes last-minute documentation updates and corrections.

Installation Manager Documentation

The MetaFrame XP documentation set includes electronic manuals and online application help for Installation Manager.

On a MetaFrame XP server, the Installation Manager documentation is located in the Documentation folder. You can display the contents of this folder in Program Files\Citrix\Documentation on your local drive.

The following documentation is included with MetaFrame XP:

- This manual, *Citrix Installation Manager Getting Started (Installation Manager Getting Started)*, provides conceptual information and basic procedures for system administrators who install and uninstall Installation Manager, create packages, and install packages on target servers. To get the most out of this manual, review the table of contents to familiarize yourself with the topics included in this book.
- Online help for the console and Packager provides detailed steps about how to use Installation Manager. The online help can be accessed from the Help menu of your console or Packager main window. Refer to the online help for specific tasks.

Note The Packager utility and online help are available in English and Japanese only.

- The Installation_Manager_Readme.txt file contains last minute updates, corrections to the documentation, and a list of known problems. This file is in the \Docs directory of the distribution CD-ROM.
- A supplementary manual, *Citrix Installation Manager Application Compatibility Guide (Application Compatibility Guide)*, provides useful information about specific compatibility issues that occur if you package, install, or uninstall applications using Installation Manager. This guide is available on the Citrix Web site at <http://www.citrix.com/support> in Product Documentation.

This Getting Started manual is available in the following locations:

- In the \Docs directory of your MetaFrame XP CD-ROM.
- Installed in the Documentation folder of your MetaFrame XP server, <drive>\Program Files\Citrix\Documentation.
- On the Citrix Web site at <http://www.citrix.com/support>. Select **Product Documentation**. You can check the Product Documentation area of the Web site at any time for the latest updates to Citrix technical manuals. Any updates to the manuals published after the release of this product will be posted there.

Using PDF Documentation

To access the documentation that is provided in PDF files, use Adobe Acrobat Reader 4 or later. Acrobat Reader lets you view, search, and print the documentation.

You can download Acrobat Reader for free from the Adobe System Web site at <http://www.adobe.com/>. The self-extracting file includes installation instructions.

Documentation Conventions

Citrix documentation uses the following typographic conventions for menus, commands, keyboard keys, and items in the program interface:

Convention	Meaning
Boldface	Commands, names of interface items such as text boxes and option buttons, and user input.
<i>Italics</i>	Placeholders for information or parameters that you provide. For example, <i>filename</i> in a procedure means you type the actual name of a file. Italics also are used for new terms and the titles of books.
UPPERCASE	Keyboard keys, such as CTRL for the Control key and F2 for the function key that is labeled F2.
Monospace	Text displayed at a command prompt or in a text file.
%SystemRoot%	The Windows system directory, which can be WTSRV, WINNT, WINDOWS, or other name specified when Windows is installed.
{ braces }	A series of items, one of which is required in command statements. For example, { yes no } means you must type yes or no . Do not type the braces themselves.
[brackets]	Optional items in command statements. For example, [/ping] means that you can type /ping with the command. Do not type the brackets themselves.
(vertical bar)	A separator between items in braces or brackets in command statements. For example, { /hold /release /delete } means you type /hold or /release or /delete .
... (ellipsis)	You can repeat the previous item or items in command statements. For example, /route:devicename [...] means you can type additional <i>devicenames</i> separated by commas.
►	Step-by-step procedural instructions

Citrix on the World Wide Web

The Citrix Web site, at <http://www.citrix.com/>, offers a variety of information and services for Citrix customers and users. From the Citrix home page, you can access Citrix online Technical Support Services and other information designed to assist MetaFrame XP administrators, including the following:

Citrix Documentation Library. The library, which contains the latest documentation for all Citrix products, is at <http://www.citrix.com/support/> (select Product Documentation). You can download updated editions of the documentation that ships with Citrix products, as well as supplemental documentation that is available only on the Web site.

Citrix ICA Clients. Downloadable Citrix ICA Clients (at <http://www.citrix.com/download>).

Support Options. Program information about Citrix Preferred Support Services options is available in the Support area of the Citrix Web site at <http://www.citrix.com/support>.

Software Downloads. An FTP server provides access to the latest service packs, hotfixes, utilities, and product literature for download.

Online Knowledgebase. An online Solution Knowledge Base contains an extensive collection of application notes, technical articles, troubleshooting tips, and white papers.

Discussion Forums. The interactive online Solution Forums provide outlets for discussion of technical issues with other Citrix users.

FAQs. Frequently Asked Questions (FAQ) pages provide answers to common technical and troubleshooting questions.

Education. Information about programs and courseware for Citrix training and certifications is available at <http://www.citrix.com/training/>.

Contact Information. The Citrix Web site provides contact information for Citrix offices, including the worldwide headquarters and headquarters from Europe, Asia Pacific, and Japan operations.

Developer Network. The Citrix Developer Network (CDN) is at <http://www.citrix.com/cdn/>. This open enrollment membership program provides access to developer tool kits, technical information, and test programs for software and hardware vendors, system integrators, ICA licensees, and corporate IT developers who incorporate Citrix computing solutions into their products.

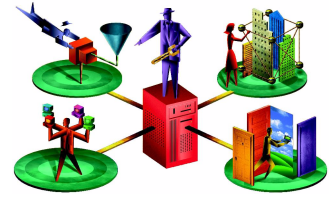
SDKs. The Citrix Server Software Development Kit (SDK) is available for free from <http://www.citrix.com/cdn/>. Most of the operations that you can perform through Citrix GUI tools can be scripted by using the Citrix Server SDK. The SDK also lets programmers customize most aspects of MetaFrame XP.

Providing Feedback About This Guide

We strive to provide accurate, clear, complete, and usable documentation for Citrix products. If you have any comments, corrections, or suggestions for improving our documentation, we want to hear from you.

You can send e-mail to the documentation authors at documentation@citrix.com. Please include the product name and version number, and the title of the document in your message.

Introduction to Installation Manager



Installation Manager is a powerful feature in MetaFrame XPe that facilitates the rapid installation of applications and other software components. These deployments can run on Microsoft Windows 2000 Server with Terminal Services (Windows 2000 Server) MetaFrame farms.

Important Microsoft Windows NT Server 4.0, Terminal Server Edition (Windows NT Server 4.0 TSE) is not supported in MetaFrame XP Feature Release 2.

Installation Manager lets you install applications and other software components to any or all available servers in your farm—attended or unattended—using any MetaFrame XP server on the network regardless of physical location, network connection type, or hardware setup.

This chapter covers the following topics:

- Why you should install Installation Manager
- The advantages of using this product
- New features in Feature Release 1
- New features in Feature Release 2

Why You Should Install Installation Manager

Imagine the administrative burden of installing Microsoft Office 2000 on 200 servers by sitting in front of each server and manually installing every piece of the software. The thought is daunting. It can take weeks to complete the task only to find that you have to begin the cycle again. Six months later, you have to upgrade these servers with the latest service packs or software patches. Installing the files can become an endless task.

Installation Manager lets you install an application package, such as Microsoft Office 2000, *from* one server *to* all the servers in a domain or in a farm. Use Installation Manager to deploy applications, files, service packs, or software patches on the servers in your farm.

The Advantages of Using Installation Manager

Installation Manager provides the following advantages:

Install and Publish Applications Quickly and Conveniently. Installation Manager includes enhancements to published applications. These enhancements give the application publishing feature the ability to push application installations to servers and publish those applications when scheduled. Further, unpublishing an application does not uninstall the package in which the application resides.

Create or Change an ADF Package. Installation Manager allows you to create packages as *ADF files* (a package format) or change existing *ADF packages* (a package type) to include updated files.

Install Applications, Service Packs, Patches, and Upgrades. Installation Manager installs applications, service packs, patches, or upgrades to existing applications. In addition, you can replace a corrupted application.

Install Existing Packages. You can add to and install ADF or MSI packages built by other software products from Installation Manager.

Customize Packages. ADF packages are fully customizable. A set of Packager commands lets you change an ADF file at the command prompt.

Schedule Packages. You can schedule package installations on *target servers* in farms or change the order of the packages you install.

View Package Information. You can view the contents of a package, schedule the package to install or uninstall, or view the status of the package. The console tree view displays the current status and other information about the package.

Manage Packages. You can manage package installations and uninstallations in the farm or across domains. You can schedule new application installations for any time, such as when farm usage is low or when a new application becomes available.

Install an Application Remotely Without Installation Rewrites. Installation Manager includes its own monitoring utility that lets you replay any application installation without modifying the install program in the application. The Packager utility frees you of any dependency on application vendors to package their applications in a way that is not compatible with Installation Manager.

Save Time. You can save a significant amount of time installing packages on servers in the farm from a central location, using the Citrix Management Console.

Restart Servers Automatically. You can automate server restarts immediately after an application installs on the target server, making the application and the server ready for use.

Run the Same Software in ICA Client Sessions. All ICA Client users in the farm or across farms can be assured that they are running the same version of an application. Running the same application version resolves application compatibility problems if multiple users access the same files.

Make Internationalization Easier with UNICODE Compatibility. Installation Manager is UNICODE compatible, solving problems with internationalization.

Add Compatibility Scripts in ADF Packages. You can add an application *compatibility script* to any ADF package as you create your package.

Add Transform Files in MSI Packages. You can add a *transform* file to any MSI package.

Replace Damaged Applications. You can replace a damaged application quickly on all affected servers by uninstalling the package and installing a new packaged application, or forcing the reinstallation of the package.

Note If you uninstall a program on a server locally without the use of Installation Manager, the program may still appear to be installed in the Citrix Management Console.

New Features in Feature Release 1

Feature Release 1 of Installation Manager includes these features and enhancements.

Create Server or Package Groups. The console allows you to create an unlimited number of server or *package groups*, saving time when several packages require managing.

Edit Restart Behavior. You can specify whether you want an application within a package to restart after Installation Manager installs the package on target servers.

Filter Servers. You can select the operating system platforms on which to deploy your packages.

Improve Integration with Application Publishing. You can use the MetaFrame XP Application Publishing wizard to publish the application automatically after you install it.

Check Package Versions. You can use this feature to check the version of a package to determine if you are installing the correct package.

Simplify Your Package Management. You can use the console for easier package installations and package management.

Improve Handling of MSI Transform Files. You can add a transform file to an MSI package when you add a package to the Installation Manager database.

Simplify ADF Package Creation. Packager uses several wizards that makes ADF package creation easier.

New Features in Feature Release 2

Feature Release 2 of Installation Manager includes these new features and enhancements.

Install an MSI Package. You can install or remove MSI packages. Installation Manager can detect an MSI package on the network share point, saving you time when ascertaining a package type. In some cases, identifying an MSI file is not apparent.

Uninstall an MSI Package. You can customize how you want your MSI package to uninstall.

Install an Application on Multiple Servers from a Central Location. You can use the console to install the applications contained in a package or package group to any or all servers or *server groups*.

Use Two Packages with the Same Name. As long as a package is included in another package group, two custom packages can use the same package name.

Install Patches. You can add a software patch (.msp files) to a package that includes other components or you can create a package just for the patch.

Manage Packages in a Mixed Farm. You can use the console to connect to servers that have MetaFrame XP with Feature Release 1 or Feature Release 2 and perform similar tasks. For best results, Citrix recommends that you upgrade your Feature Release 1 servers to Feature Release 2.

Install or Uninstall Package Groups. You can use the Job Scheduler wizard in the console to select a package group to install or uninstall. This feature installs all of the packages in the group, in the order you select. You can also customize a package to install at various times and dates using the **Installation Window** option.

Enjoy Easier Network Account Setup. The Installation Manager Properties dialog box has been improved for easier network account setup and customized installs or uninstalls. The Installation Manager subsystem installs automatically with MetaFrame XPe. In addition, you can define a default file share location, simplifying the package addition process.

Control Access to Installation Manager. Use delegated administration to set the network share point rights. You can even prevent access to Installation Manager.

View Packages with the Same Product Code. You can view links to packages that have the same product code.

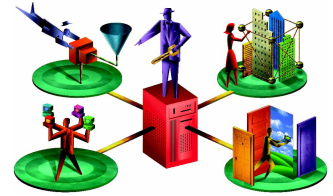
Schedule Installations More Easily. You can drag and drop a package onto a server or a server group item in the console tree to initiate immediate scheduling. A graphical calendar control is also available for scheduling future package installations.

Identify a Transform File. Installation Manager identifies and displays a transform file name in an MSI package. This feature eliminates the need to search for a transform file in an MSI package.

Create or Manage Package Groups More Easily. GUI dialogs are provided to allow you to create a package group and set its installation sequence. Network account information and default file share locations can be set specifically for a package group.

Job Results Monitoring. The Job Results dialog has been improved for easier package install progress monitoring.

Deploying Applications Using Installation Manager



This chapter gives you an overview for using Installation Manager to plan and deploy packaged applications on your target servers. See the online help in the Citrix Management Console and in Packager for detailed information about performing the tasks in this chapter.

This chapter covers the following topics:

- Choosing the servers on which you want to install your packages
- Choosing the Installation Manager components
- Deciding what you want to install
- Deciding which package format to use
- Creating an ADF package
- Setting up rights on the network and in the domain
- Copying the package to a network share point
- Adding the package to Installation Manager
- Scheduling the deployment
- Publishing the application

Installation Manager expedites application installations on target servers so that ICA Client users can run the published applications they need and use the most current software versions available. Packaging an application or other software can be performed in your company or you can purchase pre-packaged applications from a software manufacturer such as Microsoft.

Choosing the Servers on Which to Install Packages

Any server that Terminal Services uses to connect to ICA Client workstations and run common applications can benefit from Installation Manager.

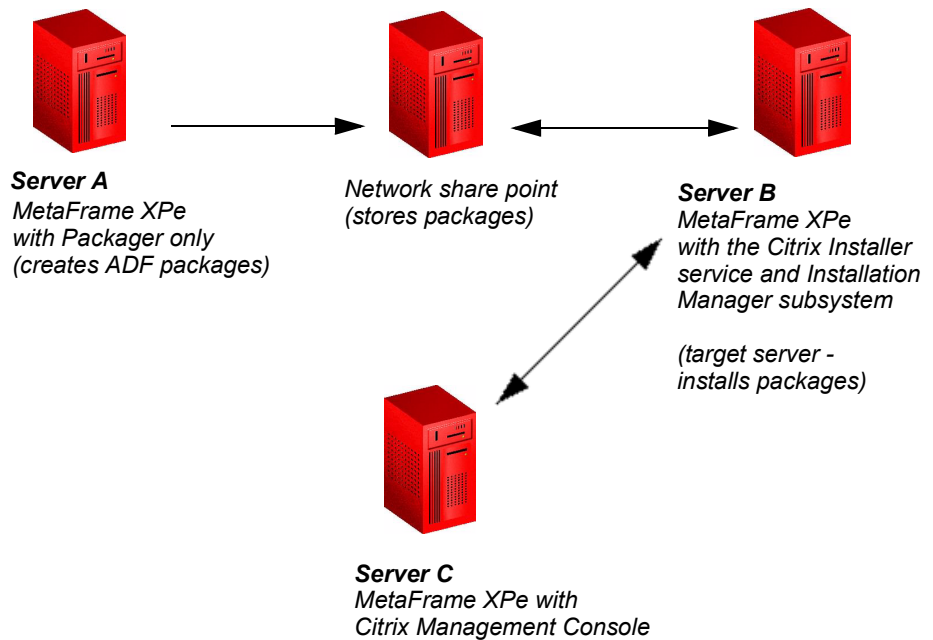
The goal of the application deployment process is to ultimately publish applications that either do not exist on servers or that require updates to the servers in your farm. Installation Manager works by letting you select the *target server* that will receive the packaged application before installation occurs. Then you use the console to schedule the installation of that application on a specific day and time.

Each target server must have the Installation Manager *Citrix Installer service (Installer service)* component installed. The Installer service runs in the background on target servers and executes the installation scripts in your package. The Installer service performs all installation actions user intervention. This service is installed with the Installation Manager subsystem.

Before you install Installation Manager:

- Determine which servers in your farm require applications, upgrades, patches, and so on. These are the target servers on which you install your software components in the form of packages.
- Decide if the applications you want to deploy come pre-packaged or if you have to package them yourself. You can find out if an application is pre-packaged by searching for a file with either the .msi or .wfs extension. If you package an application yourself, you can use either Installation Manager's *Packager* utility or another packaging product.
- Determine which operating system is installed on your target servers. You need this information because packages must be customized to run on the operating system platform that the application uses.
- Determine which Installation Manager components you want to install on your servers (see "Choosing the Installation Manager Components to Install" on page 19). Citrix recommends that some of the Installation Manager components be installed on separate servers; for example:
 - Install Packager on MetaFrame XPe, Server A
 - Install Installation Manager with the Installer Service on the MetaFrame XPe target server, Server B
 - Install Installation Manager plug-in without the Installer Service or Packager on a remote MetaFrame XPe server, Server C, or use Installation Manager as installed on Server B)

The following illustration shows a simple farm configuration with Installation Manager components.



Choosing the Installation Manager Components to Install

Installation Manager includes the following software components that perform the ADF packaging and installation operations:

- **Installation Manager plug-in**

In Feature Release 2, the Installation Manager plug-in is installed at the same time as the Citrix Management Console. Each server that you want to use for package scheduling and installation requires the Installation Manager plug-in. At least one server in the farm must have the Installation Manager plug-in or you cannot manage Installation Manager packages in your farm.

Note If you install the Citrix Management Console on a server without installing the Installation Manager components, the Installation Manager node will still appear in the Citrix Management Console if any other MetaFrame servers in the farm have Installation Manager installed.

The Citrix Management Console is a Java application that requires a Java Runtime Environment (JRE). If your system does not have a JRE, MetaFrame XP Setup installs one. If your system has a JRE but it is not the one

recommended for the console, MetaFrame XP Setup installs the recommended JRE. Installation Manager Setup does not replace or affect any previously installed JRE. You can install the console on the supported Windows servers.

Use the console and Installation Manager plug-in to add, schedule, and install packages on your target servers. You do *not* need the other Installation Manager components installed on this server (Citrix Installer service, or Packager).

See Chapter 4, “Using Citrix Management Console to Manage Packages” on page 41 for more information.

- **Installer Service (and Installation Manager subsystem)**

The Installer service and the Installation Manager subsystem function together.

The Installation Manager subsystem for Citrix Management Console is an administration tool based on Independent Management Architecture (IMA) developed by Citrix. This allows you to add an existing ADF or MSI package to the Installation Manager database and schedule the package for installation on Citrix servers in the farm either locally or remotely. It maintains a database of packages located on the network and allows you to schedule installation jobs, view job status, create package groups, view packages, and change package properties in addition to performing other package management tasks.

The Installer service runs on each target server (managed by Installation Manager) and executes scheduled requests from the console to install applications. The Installer service is a background process that waits for instructions from Installation Manager before it processes a package.

The Installation Manager subsystem provides the logic for managing packages and scheduling installations on target servers.

The Installer service receives notification from the Installation Manager subsystem that a package has been scheduled for installation. The ADF, MSI, or MSP file in the package is then interpreted and the software is installed on the target server.

- **Packager**

Packager is a utility that monitors and records application installation routines—the changes that an application’s installation makes on the packaging server. This utility records the changes as installation commands in a script and packages all application files for distribution on target servers.

An ADF script file plus ADF support files complete the ADF package.

Packager runs on Windows 2000 Server and is the tool you use to create ADF packages.

To optimize package creation, the Packager’s system configuration should be as similar as possible to the target servers on which the packages will be deployed. Citrix strongly recommends that MetaFrame XPe be installed on your Packager machine.

Note Packager does not install on Windows NT Server 4.0 TSE in MetaFrame XP Feature Release 2, nor does it support packaging or deploying applications that run on Windows NT Server 4.0.

Installation Manager can install MSI and MSP packages, but you must create those package types using a software program other than Packager.

Review the following table, which shows the Windows platforms supported in each MetaFrame XPe and Installation Manager release.

MetaFrame XPe Version and Installation Manager Component	Windows NT Server 4.0 TSE	Windows 2000 Server with Terminal Services
MetaFrame XPe 1.0		
Installation Manager Subsystem	X	X
Installation Manager Installer Service	X	X
Installation Manager Packager	X	X
MetaFrame XPe 1.0, Feature Release 1		
Installation Manager Subsystem	X	X
Installation Manager Installer Service	X	X
Installation Manager Packager	X	X
MetaFrame XPe 1.0, Feature Release 2		
Installation Manager Subsystem		X
Installation Manager Installer Service		X
Installation Manager Packager		X

What You Can Deploy

Prior to packaging or deploying a packaged application, you must decide which applications and other files you want to package and deploy.

The following list provides examples of the types of software components that you can install on your target servers. MetaFrame XP Feature Release 2 runs on and supports Windows 2000 Server.

New Applications. Keep your users updated on the most current applications on the market.

Legacy Applications. Some of your users may run older applications that your company may still use.

Applications Developed at Your Company. Your company may have proprietary software, such as applications developed for your Human Resources department or your manufacturing facility. All of the employees in your company may need to use these applications.

Upgrades. The servers in your farm may need occasional upgrades to keep applications current.

Service Packs and Patches. The servers in your farm may contain applications that are performing poorly and require a service pack or patch install.

Other Files. Special files can be added to your company-developed software.

Deciding on the Package Format

Installation Manager installs a number of different software types: applications, service packs, upgrades, application suites, patches, or other files as *packages*. A package can include combinations of these software components. For example, the package can include an application and a patch file or an application and other related files.

You can combine several related packages into a *package group*, such as packages that include various types of accounting applications or packages created specifically for a department or workgroup. Combining packages makes them easier to categorize and faster to locate.

Installation Manager supports three package format types: *ADF*, *MSI* and *MSP*.

ADF Packages

An ADF package is created by the Packager utility in Installation Manager. ADF packages work well for silent (unattended) installations, application recordings, or other files that do not require a *recording*. A recording contains an application's installation routine for replay on target servers.

An ADF package can include a new application, the upgrade to an existing application already installed on your target servers, or other files that your ICA Client users require. The ADF file has a .wfs extension.

Some applications, such as Microsoft Project 98, require that a *compatibility script* be added to the package for successful installation on target servers. The Packager software can add a compatibility script prior to the build process.

Note The Packager software can record only one application for each package. If you have several applications to package, create a new package for each recording or use a packaging product that can create multiple recordings in one package.

MSI and MSP Packages

An MSI package is created by a software manufacturer or by using a software packaging product that builds MSI packages. MSI packages work well for application suites such as Feature Release 2 of MetaFrame XPe where several applications (or feature types) are included in the package. For example, MetaFrame XP Feature Release 2 includes a database and application installations that use the Windows Installer service for packaging.

MSI packages sometimes use *transform* database files. Transform files act like filters that you apply to MSI packages. These files modify instructions about how a package is installed; for example, to enable an application to run on Terminal Services.

Note You cannot edit MSI packages or transform files using Packager. Use a packaging product that can edit these file types.

An MSP package is created by a software manufacturer or by using a software packaging product that builds MSP packages. These are typically used to patch or update application installations that use the Windows Installer service for packaging.

Creating an ADF Package

In general, the Packager installation setup program performs these tasks as it creates an ADF package:

- Adds, modifies, and deletes registry keys
- Adds and modifies initialization (.ini) files
- Creates desktop shortcuts
- Copies other program files such as executables and Dynamic Link Libraries (dlls) to servers during application installations

Packager records all such tasks so that Installation Manager can reproduce the application installation by replaying the recorded tasks on your target servers. This process ensures that the installation is complete and accurate. Recording an installation routine is called *packaging* an application. Packager executes an application's setup program while running in the background.

When you package an application, Packager creates an *installation script* plus copies of the application files to install. The installation script is a text file that provides instructions to the Installer service about how to install the application on the target servers. In this script, Packager uses a script language to record all of the installation tasks that the target servers can interpret and execute when replaying the installation.

Use the Packager utility to create an ADF package.

Note This section does not give you step-by-step instructions about how to create an ADF package. Use the online help in Packager for specific details or see “Setting Up the Packaging Environment” on page 45.

Not all applications can be packaged. For example, you cannot package applications that require components or files to be downloaded from the Internet as part of the installation process. To determine if you can package an application, run the application's Setup.exe file in Packager. If the application does not record, the installation likely will fail when deployed.

Note Make sure the application that you are trying to package is not already packaged as an ADF or MSI file. If it is, do not package it again. Some MSI files may not be easy to identify in an application suite. For best results, search for a file with the .msi extension.

See the *Application Compatibility Guide* for a list of popular applications that were tested using Packager and in which issues were found.

Setting Up Access to Copy, Retrieve, and Install Packages

After you create a package, you must copy the package to a network share point. Before you do that, you must set up rights by performing the following tasks:

Network Share Point Setup. Read and Write permissions must be set at the network share point to allow you to copy packages to that share point and retrieve them for deployment on the target servers. The user accounts adding and retrieving packages must have local administrative rights and. See your Windows documentation for more information.

Domain Administrator Setup. You must be a MetaFrame or domain administrator to run Installation Manager. See your Windows documentation for more information.

Network Account Setup. You must set up a network account in the console. Use the Installation Manager Properties page in Citrix Management Console to set up this account before you begin copying packages. Otherwise, the first time you add a package to the Installation Manager database, a Network Account dialog box opens, allowing you to set up a network account.

The screenshot shows the 'Installation Manager Properties' dialog box with the 'Network Account' tab selected. The dialog has three tabs: 'Options', 'Network Account', and 'About Installation Manager'. The 'Network Account' tab contains two sections: 'Default Network Credentials' and 'Default File Share Location'. The 'Default Network Credentials' section has three text boxes: 'User Name' (containing 'domain\user'), 'Password' (containing '*****'), and 'Verify Password' (containing '*****'). There is a 'Browse...' button to the right of the 'User Name' box. The 'Default File Share Location' section has a 'Location' text box and a 'Browse...' button to its right. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

See your console help for more information.

Copying a Package to a Network Share Point

You must copy an existing package to a network share point before you can add the package to Installation Manager in the console and schedule the package for deployment on your target servers. Copying the package to a share point makes it accessible from the console.

Copying MSI Packages

You can copy an MSI package manually to the network share point.

Note Microsoft recommends that MSI packages be installed on a share point using the following command at the command line: **msiexec /a <package name>**. This command string uncompresses the cabinet file (.cab) and allows you to set package properties such as the product ID. After entering the command, the software prompts you for the share point to the package.

Copying ADF packages

Installation Manager allows you to copy an ADF package to the network share point two ways:

- Use the **Tools** menu. If you create an ADF package in Packager, **Build Option** allows you to copy the package to the network share point and add it to the Installation Manager database during package creation. Select the **Add Package to Citrix Server** option and enter the path to a Citrix server.
- Copy the file manually.

Adding a Package to Installation Manager

You must add packages to the Installation Manager database before you can install them. You can use the **Add Package** option in the console to add your package to the Installation Manager database or you can add an ADF package in Packager.

Packager. You can add an ADF package in Packager by selecting the **Add Package to Citrix Server** option during the build process.

Console. You can also add ADF, MSI, or MSP packages using the **Add Package** option in the console. This option can be accessed from the **Actions** menu when the **Packages** node is selected in the console, or by right-clicking on the **Packages** node.

See your console help for more information.

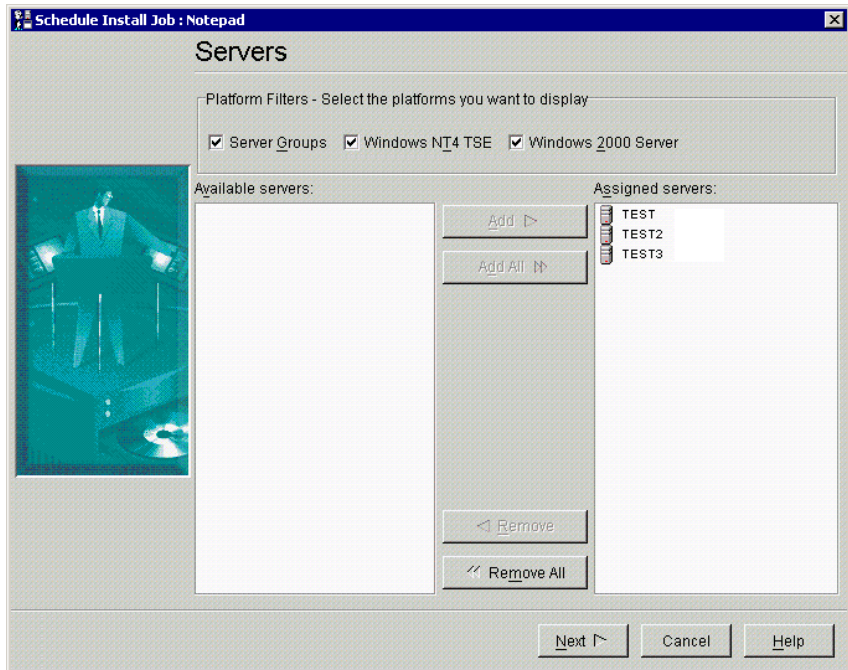
Scheduling a Package to Install

The console and IMA allow management of MetaFrame XP servers and server farms from any location. Administrators with proper credentials can run the console on any connected Windows 2000 Server (Windows NT Server 4.0 is not supported in MetaFrame XP Feature Release 2).

With the console installed, Installation Manager Setup installs the files necessary for IMA protocol communication on any supported workstation or server. The console lets you set up network rights and add, install, and schedule packages for installation on your target servers. You can schedule an uninstall of an ADF or MSI package in the console also. When you schedule a package, it becomes a *job*.

Installation Manager allows you to schedule a package installation four ways in the console:

Packages and Package Groups Item. Expand **Installation Manager** in the console tree and right-click **Packages** in the console tree or on the **Contents** tab to add a package or create a package group. Select a package or package group and choose **Install Package**. The Schedule Install dialog box appears.



Applications Item. Right-click **Applications** and choose **Publish Application**.

Drag and Drop. Drag and drop a package item onto a server or server group in the console tree or on the **Contents** tab. The **Schedule Install** dialog appears.

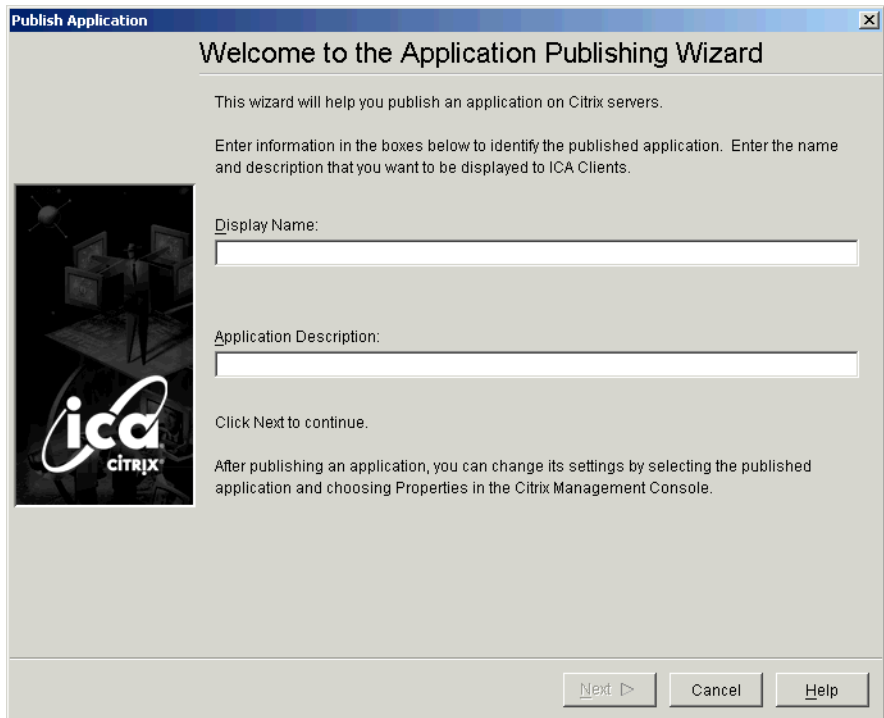
Server and Server Groups. Right-click a server or server group node in the console tree or **Content** tab. Choose **Install Package**. The **Package Selection** panel appears.

See the console help for information about scheduling a package installation.

Publishing a Packaged Application

The Publish Application item is the central point of Installation Manager's application administration. Publish Application lets you create connection items, called *published items*, that point to specific applications on your servers.

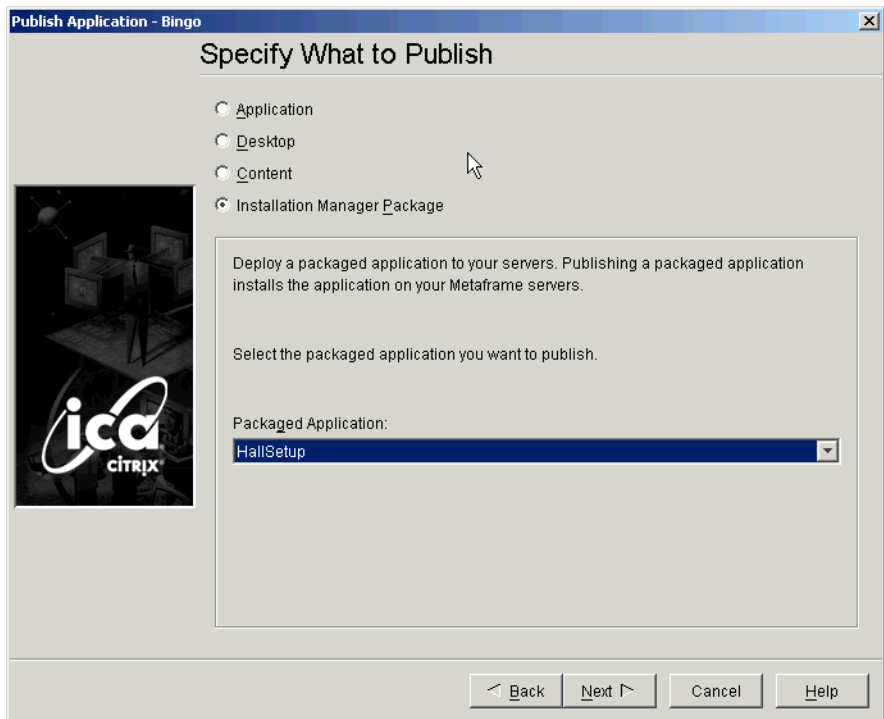
Note The MetaFrame XP Application Publishing wizard can use Installation Manager to install and publish applications automatically on any server in the farm.



Using Application Publishing to Deploy Packages

When an ICA Client user connects to a published application, the software initiates an ICA session containing the application specified during application publishing. To the ICA Client user, a published application appears to be running locally. The user doesn't need to know the name or address of the Citrix server executing the application.

In Installation Manager, you can use the **Applications** item in the console tree to install and publish a packaged application (after you add the package to the Installation Manager database). When you request to publish an application in Publish Application, you can select **Installation Manager Package**, then select the application to install on the selected target server in the same session.



The **Packaged Application** box lists all of the files in the package. You can select any one of the files to install the package.

Important In MetaFrame XP Feature Release 1, if you use Packager to package the same application on Windows NT Server 4.0 and Windows 2000 Server platforms and you specify different paths or customize the application for each platform, two entries appear in the list even though you are packaging the same application in two packages. You may not be able to distinguish the platform on which the application is packaged. Make sure you use the same path for each platform. This problem does not exist in MetaFrame XP Feature Release 2 because Feature Release 2 does not support Windows NT Server 4.0.

Using Packages that Contain the Same Applications

Installation Manager uses *preferred packages*. Various packages on the network can and often do contain the same applications. MSI packages usually contain a suite of applications, such as Microsoft Office 2000. The packages may be different, for example, if you add a compatibility script or a transform file to the package during the package build process.

For example, you may want to install a specific application suite that includes Microsoft Word and Microsoft Excel and another package that contains Microsoft Word only. You can designate one of the packages as a preferred package in Installation Manager. When the user selects Microsoft Word, the application in the preferred package is started. The Installation Manager Package option in Application Publishing lets you install and publish the preferred package, or you can use the Installation Manager item in the console tree.

Note The Installation Manager node cannot publish the application automatically after installation. Use **Applications** in the console tree.

See the Installation Manager online help in the console for more information about how to set up preferred packages.

Managing the Loads of Published Applications

When ICA Client users attempt to connect to a load-balanced published application, Load Manager directs the requests to the least busy server configured to run the published application.

Citrix recommends that you use Load Manager included with MetaFrame XPe to load balance your servers and applications across all of the MetaFrame XP and Installation Manager servers in your farm. In that way, servers that run ICA Client sessions are less likely to connect to a Citrix server that is approaching its load capacity.

See the *Client Administrator's Guide* for more information about ICA Client software, the *MetaFrame XP Administrator's Guide* for application publishing information, and the *Load Manager Getting Started Guide* for information about setting up Load Manager.

Unpublishing an Application

Unpublishing an application installed with Installation Manager does not result in the application being uninstalled from the target server. Uninstalling the application or package from that server, however, both uninstalls and unpublishes the application. Use the console to uninstall a packaged application installed using Installation Manager.

See the *MetaFrame XP Administrator's Guide* for more information about unpublishing an application.

Note If you uninstall a program on a target machine locally without the use of Installation Manager, the program may still appear to be installed in the Citrix Management Console.

Installing Installation Manager



This chapter explains how to prepare for and install Installation Manager or upgrade to Feature Release 2 of Installation Manager.

This chapter covers the following topics:

- Requirements
- Preparing to install the product
- Starting to install Installation Manager
- Upgrading to Feature Release 2
- Using Installation Manager in the console
- Granting administrators access to Installation Manager
- Uninstalling Installation Manager

Requirements

To package applications and run Installation Manager, your farm must contain the following items:

Application Packaging Server. A packaging server to package applications in the ADF format.

Package Management Server. A MetaFrame XPe server with Citrix Management Console installed for package management.

Network Share Point Server. A file server that functions as storage on a network share point for ADF and MSI packages.

Target Servers. IMA target servers in the farm that receive installed applications through the Installer service.

MetaFrame XPe Server Requirements

In MetaFrame XP Feature Release 2, Installation Manager is installed on Windows 2000 Server with MetaFrame XPe.

Note MetaFrame XP Feature Release 2 does not support Windows NT Server 4.0 TSE.

You can install all of the Installation Manager components on one server, even if you build ADF packages on a separate server. If you build ADF packages on a separate server, it is not necessary to install Packager on more than one server in the farm.

Installation Manager Requirements

The requirements for installing Installation Manager depend on the components you are installing. The total amount of disk space required to install the Installation Manager components is 7187KB.

Install MetaFrame XPe and Installation Manager on Windows 2000 Servers. Microsoft recommends a 133MHz or faster Pentium-compatible processor, 256MB RAM, and a 2GB hard disk with at least 1GB of free space.

Requirements for the Packaging Server

To create ADF packages, install MetaFrame XPe and the Packager component on a separate Windows 2000 Server system dedicated to packaging only.

Before you package an application, run Packager in an environment that closely approximates the environment of the servers on which you are installing the application.

Note MetaFrame XP Feature Release 2 does not support Windows NT Server 4.0 TSE.

The Packager software requires over 4933KB of disk space, in addition to the Windows operating system requirements and the disk space required to package any applications, service packs, and other files. During packaging, all of the component files are copied to a package source directory. As much disk space used for the component files is needed for the package source files. For example, if you package an application that totals 10MB, you will need an additional 10MB of disk space for the package source files.

The server used as the packaging environment must include:

- A partition on the hard drive dedicated only to packaging applications. The partition must be at least 500MB and must not contain any files or data other than those required by Installation Manager.
- A Windows operating system installed on the partition. This operating system must be a fresh installation of Windows 2000 Server.

Important This installation cannot be an existing installation of Windows 2000 Server. Use this installation exclusively for the purpose of packaging applications and not for any other work-related tasks.

- The Packager software installed on the same partition. This software is included on the *MetaFrame XP 1.0 for Windows, Feature Release 2* CD.

Set up your rights in Windows so that you can install the packages on your target servers successfully. See your Windows documentation for information about setting up these rights.

Before you create and build packages in Packager:

- Create a Windows network share point to serve as a repository for your packages.
- Create a Windows domain account that has a minimum of Read and Write access rights to the network share point. See *Preparing to Install and Set Up Feature Release 2* on page 37 for more information. If you record an installation that requires administrator rights, you need those rights before you can begin the packaging process.
- Create a network account in the console to add your package to the Installation Manager database, making the package ready to schedule the installation. See *Granting Access to Citrix Administrators* on page 42 for more information.

Requirements for the Package Management Server

The Installation Manager plug-in installs in the Citrix Management Console on any MetaFrame XP Feature Release 2 server that you want to use to manage packages. This allows you to install, uninstall, and manage your installation packages and package groups.

The console requires the following:

- Minimum 25MB of disk space for installation of the console and Java Run-Time Environment
- 64MB RAM for running the console (in addition to RAM required for the operating system and other applications)
- Pentium-class processor

Requirements for the Network Share Point Server

Your file server must:

- Have adequate free disk space to hold all of the packaged applications and other software components (such as service packs or upgrades) that you plan to install. The disk space required for each application is almost the same as that recommended by the software manufacturer (some additional disk space is required for registry entries, dlls, .ini files, and so on, during and after the build process).

For example, an application that requires 40MB of disk space for a local installation requires just over 40MB of free space on the file server.

- Support Universal Naming Convention (UNC) share points.
- Be accessible to all servers using Installation Manager to install applications. If you publish applications from packages, you must have Read and Write access to this file server.

Requirements for the Target Servers

To install applications on the target servers in your network, the servers must have MetaFrame XPe and the Installer Service installed.

The Installer Service software requires 2254KB of disk space in addition to the Windows operating system requirements.

Preparing to Install and Set Up Feature Release 2

Carefully plan out which component you want to install on the servers that will use Installation Manager.

For example, if you have five servers in your farm, you can install:

- The Packager component on a MetaFrame XP server for packaging
- Citrix Management Console and Installation Manager plug-in on a MetaFrame XPe server for package management
- The Installer service and the Installation Manager subsystem on three MetaFrame XP target servers

Setting up your environment for application installation includes these general tasks:

- Install MetaFrame XPe, the current feature release, the current console, and the necessary Installation Manager components on the servers in your farm.
- Install the Citrix Installer Service on target servers that will receive packages.
- Set up a domain account. A Windows 2000 Server domain account must be set up as the Installation Manager administrator account. Configure this account in the console.
- If you install an *unattended program* in the console and the program requires local administrator rights, the Installation Manager network account must have the same rights. Applications generally do not require the user to have administrator rights.
- The network account will also be used by the Installer to deploy packages; you must verify which applications will and will not require administrator rights. To set up the rights, use the following options in Windows 2000 Server: from the **Start** menu, click **Programs > Administrative Tools > Computer Management**.
- To install MSI or MSP packages, you can add and schedule the package in the console. No setup is required other than placing the packages on a network share point.
- To create ADF packages, set up the packaging server for building ADF packages by installing Packager on a MetaFrame XPe server in your farm. If you create ADF packages from an installation recording, this server must be a *clean* server. A clean server does not contain any applications that the target servers do not have. All applications you want to add to the package must be installed during the packaging session. The recording process does not add any files to the ADF packages that were on the server before the recording process began.

Note Only one recording is allowed for each package you create.

For example, if the file Mfc42.dll (required by an application that you want to package) is on the clean server before packaging begins, Mfc42.dll is not added to the package. The application runs correctly if Mfc42.dll exists on the target server before you install the package. If Mfc42.dll is not on the target server, the application will not run after it is installed.

- Make sure the Packager server operating system and its environment matches the environment of the MetaFrame XP servers on which you install your applications.

Starting to Install Feature Release 2

You can install Installation Manager from the *MetaFrame XP 1.0 for Windows, Feature Release 2* CD or from a network share point if it is available.

The following procedures explain how to install Installation Manager from the distribution CD, assuming that MetaFrame XPe and Installation Manager are not installed on your server.

If you have installed a prior version of MetaFrame XPe and Installation Manager, see *Upgrading Installation Manager to Feature Release 2* on page 40.

If you have installed Feature Release 2 of MetaFrame XPe, Installation Manager was installed with MetaFrame XPe unless you specified otherwise during the installation process.

If you have not installed MetaFrame XPe and Installation Manager, follow these steps.

► To begin installing MetaFrame XPe and Installation Manager

Before you begin the installation, determine whether Installation Manager is already installed by verifying whether the Installation Manager item appears in the left pane of the console tree. If the item is displayed there, skip this section.

Note This setup procedure focuses primarily on Installation Manager installation. Because the steps to installing Installation Manager are integrated into the MetaFrame XPe installation, the general MetaFrame XPe installation steps are described here also. See the Feature Release 2 version of the *MetaFrame XP Administrator's Guide* for complete MetaFrame XPe installation instructions.

1. Exit all applications.
2. Insert the CD-ROM into the drive on a Windows server.

- If your CD drive supports Autorun, the MetaFrame XP splash screen appears.
 - If the splash screen does not appear or if you are installing from a network share point, from the **Start** menu, click **Run** and type **d:\autorun.exe**, where *d* is the letter of your CD drive or network share point.
3. On the Welcome page, click **Install Checklist** or **Install or update MetaFrame XP**.
Install Checklist provides a list of pre-installation items to check before starting the installation.
 4. Click **MetaFrame XP Feature Release 2**.
 5. On the Citrix MetaFrame XP for Windows, Feature Release 2 setup page, click **Next**.
 6. On the Citrix MetaFrame XP License page, read the Citrix license agreement text. Select **I accept the license agreement** if you accept the license agreement and click **Next**.
 7. On the Citrix MetaFrame XP Installation Type page, select **MetaFrame XPe** and click **Next**.
This option installs MetaFrame XPe and all of the components, including Installation Manager.
 8. Select your **Product Type** and click **Next**.
 9. On the Component Selection page, click **Installation Manager** and choose the Installation Manager components to install or not install and where the Packager is to be installed (local drive or network).
 - Install all of the Installation Manager components. If you install all of the Installation Manager components, the Installation Manager subsystem, the Citrix Installer Service, and Packager install on your server or on the network.
 - Install separate components. The Citrix Packager components do not have to be installed on the same servers as Citrix Installer Service.
Citrix Installer Service. Install this component on every server that receives package installations.
The Installation Manager subsystem and Installer Service install together.
Install this component on servers not only where you want to manage packages, but also on the target servers where the Installer service is used.

Packager. Packager does not require the Installation Manager subsystem or the Citrix Installer Service to build ADF packages. The Packager software installs by default unless you choose not to install it.

In MetaFrame XP Feature Release 2, each Windows 2000 Server that you want to use to build ADF packages requires this utility. If you install the Packager without the Installation Management subsystem, no Installation Management functions will be available in the Citrix Management Console.

10. Click **Next**.
11. On the Citrix MetaFrame XP Farm Selection page, create a new farm or choose to join an existing farm, then click **Next**.
If you create a new farm, type the farm name, select the database option and zone name, then click **Next**.
If you join a farm, configure the data store and zone name, then click **Next**.
12. On the Citrix MetaFrame XP Farm Administrator page, type the administrator user name and domain, then click **Next**.
If you choose to join a farm, the Citrix MetaFrame XP Farm Join page is displayed. Add the settings information.
13. On the Citrix MetaFrame XP Shadowing page, select the shadowing options you will use and click **Next**.
14. On the Citrix MetaFrame XP XML Service page, select either **Share default TCP/IP port with Internet Information Services** or **Use a separate port** and enter the appropriate port number. Click **Next**.
15. On the Citrix MetaFrame XP Installation Options page, review the installation summary, and farm details, and click **Finish**.
16. When the installation is complete, click **Close**.

Upgrading Installation Manager to Feature Release 2

When you insert the *MetaFrame XP 1.0 for Windows, Feature Release 2* CD in your drive and click through the installation wizard, the program detects if a previous version of MetaFrame XP and Installation Manager is present and updates both MetaFrame XPe and Installation Manager automatically on your server. Click **Finish** to complete the upgrade. The installation process updates your current settings to Feature Release 2.

If Installation Manager Is not Installed

If you did not install MetaFrame XPe and Installation Manager on any of your servers, use the *MetaFrame XP 1.0 for Windows Feature Release 2* CD to install Installation Manager with MetaFrame XPe. See Starting to Install Feature Release 2 on page 38 or the *MetaFrame XP Administrator's Guide* for instructions.

Note See the *Application Compatibility Guide* for information about upgrading to Feature Release 2 using Installation Manager in a Feature Release 1 environment.

Upgrading The Installation Manager Plug-In on Other Servers

The Installation Manager plug-in is upgraded as part of the Citrix Management Console installation when you install Feature Release 2 of MetaFrame XP.

You can also install the Citrix Management Console on a separate server that does not contain the Installer Service or Packager. This allows you to manage packages on a server not used to package applications or receive packages.

Using Citrix Management Console to Manage Packages

Citrix Management Console with Installation Manager can manage ADF, MSI, or MSP packages. Authenticated administrators can use the console to:

- Grant access to domain administrators
- Change user rights
- Configure network share user accounts
- Create server or package groups
- Add packages to the Installation Manager database
- Schedule or edit package scheduling for installation on target servers
- Install packages on target servers
- Monitor installation status
- Uninstall packages from target servers

Starting Citrix Management Console

► To use the console

1. From the **Start** menu, choose **Programs > Citrix > Citrix Management Console**.
2. When the console starts, a dialog box asks you to log on to the farm. Type or choose the Citrix server name, user name, password, and domain. Click **OK**.

► To view online help in the console

From the **Help** menu, choose **Contents and Index**. You can press **F1** in the interface to access help if preferred.

Views in Citrix Management Console

Several common terms in the documentation refer to the items you see in the console window. The list of items in the left pane are parts of the *tree structure*. The windows of editable information that appear in the right pane are called *tabs*. Tabs can contain lists of information or configuration options. For example, if you select Installation Manager in the left pane, the Contents tab displays in the right pane.

Using Tabs

When an item in the left pane contains more items than can fit in the right pane, the items are displayed on the tabs. The name of the tab appears at the top of each tab. One tab at a time is displayed in the right pane. To use a different tab, click the tab name.

Instructions about performing specific Installation Manager tasks in the console are provided in the online help.

Granting Access to Citrix Administrators

You can control the management of server farms by controlling access to the console. The console uses standard Windows user authentication. By default, all users who are included in the server's local Administrators group can log on to the server and use the console to manage package installations to server farms.

To give a user authorization to manage target servers, add the user account to the local Administrators group. By default, members of the global Domain Administrators group are included in the local Administrators group on each server, so your domain administrators have access to the servers in the domain. You can change the users who have access by changing user and group accounts.

► **To configure the domain account in the console**

Configure the Windows 2000 Server domain account as the Installation Manager administrator account.

1. Log on to the farm and start the console.
2. At the top of the console tree, click the farm name item.
3. Right-click **Installation Manager** and choose **Properties**.
4. Click the **Network Account** tab.

Configure settings for the default network credentials.

See your Installation Manager online help for more information about setting up a network share point user account.

See your Windows documentation or online help for more information about user accounts and groups.

Uninstalling Installation Manager in Feature Release 2

You can uninstall Installation Manager in Feature Release 2 by running the installation program for MetaFrame XPe, selecting **Install or update MetaFrame**, and modifying the installation to remove all components of Installation Manager. Alternatively, you can remove the entire installation of MetaFrame XP.

Before you uninstall Installation Manager:

- Log off any currently connected ICA Clients and the console, and exit all programs executing on the Windows server.
- If Installation Manager is still running on another server in the farm, the Installation Manager folder still appears in the console even though it is empty. This does not cause any harm.

After you uninstall MetaFrame XPe and Installation Manager:

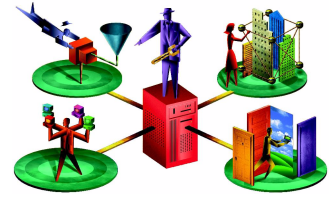
- If you plan to reinstall Installation Manager on the same server, restart your server first to remove any residual files left after the previous installation.
- After you uninstall Installation Manager, restart your server, otherwise, the IMSSS.dll component remains in a deleted state, and reinstallation is corrupted. Restarting your server removes the Installation Manager subsystem, making it ready for a new install.

► **To uninstall MetaFrame XPe and Installation Manager entirely**

1. From the **Start** menu, click **Settings**.
2. Click **Control Panel**.

3. Double-click **Add/Remove Programs**.
4. Remove Citrix MetaFrame XP. Click **Change or Remove Programs**. Choose **Citrix MetaFrame XP** and click **Remove**. Click **yes** twice to restart your server.
5. Restart your server.

Setting Up the Packaging Environment



This chapter describes how to set up an environment in which you can run Packager and accurately capture an application installation for your target servers by creating ADF packages. The sections in this chapter describe what Packager is, how to set up a clean environment in which to run Packager, and how to restore the packaging server to its original condition after recording and packaging the application.

Note If you have not installed Packager, see Chapter 4, “Installing Installation Manager” on page 33 for installation instructions.

This chapter covers the following topics:

- How Packager works
- The Packager components
- Creating a package
- Returning the Packager server to its original state

Installing applications on a Windows server is dependent on two major factors: the type of operating system on which you install the application and the *freshness* of that operating system. A single application performs disparate setup routines depending on the operating system under which the application is installed. For example, an application installation on a Windows NT Server 4.0 writes a different set of keys in the registry than an application installation on Windows 2000 Server.

Packaging application installations on a Packager server requires a dedicated partition of Windows 2000 Server and a fresh operating system installation.

Important The Packager operating system must be a fresh installation with no changes made to it by any other applications. Packaging on a fresh operating system ensures that the recorded installation portion of Packager performs all of its possible configuration actions. You can then reproduce that installation on your target servers with varying configurations and previously installed applications and be assured that all necessary installation routines replay in the correct order.

Installation routines for different applications often repeat the same steps too, including writing and deleting common registry keys, modifying common initialization (.ini) files, and placing shared .dll files in common directories.

For example, if you install an application that copies a dll file to a system directory and later you install a second application that copies the same dll file to the same system directory, the second application recognizes that the dll file already exists and does not attempt to replace it (depending on the version of the .dll file).

To record an application installation accurately for reproduction on your target servers, you must package the application in an environment that runs the same operating system as your target servers.

How Packager Works

Packager is an application that monitors application installation routines. Packager monitors an application installation's changes on the packaging server, records the changes as installation commands in a script, and then packages all application files so you can deploy the package on target servers.

Projects and Packages

The first time you open Packager (see “Creating an ADF Package” on page 24), a Project wizard appears to guide you through the packaging process.

Before you create an ADF package, you must create a *project* to which you assign a project name. The project can include the recording of an application's installation by installing the application and collecting information about the application's environment, resources, and components. Packager analyzes the information and stores it in a recorder log file. Packager then uses the log file to create an ADF file and to copy the installed application files to a package folder.

After you create the project, you add components to the project—the application or other files, the ADF, and the ADF support files. Packager then builds these components into a package. During the package creation process, you can choose to add the package to the console and later install the package on the selected target servers. The project stays in Packager and can be edited any time (by adding or deleting files), unless you roll back Packager or delete the project.

The ADF File

The Packager software creates an ADF text file that contains information about the environment, resources, and files required to install and run an application on a server. The file name reflects the name of the target application with the extension .wfs (for example, Winword.wfs). The Installer service uses the ADF file to recreate the installation on the target server.

ADF Parameters

The ADF parameters allow you to customize an ADF file at the command line. Using the ADF parameters you can:

- Install an application without using the product CD-ROM disc
- Repair a damaged application
- Remove or uninstall an application
- Describe the application and its requirements
- Inform the Installer service how to access the application files

See the *Advanced packaging features* book in the Packager online help for information about ADF creation, format, and syntax.

ADF Limitation

The ADF file has a limitation: the recording of an ADF file cannot always detect the intent of the install program when the registry keys change. To take advantage of the full intent of the application developer's logic, such as reference counts to the dll files, Citrix recommends that you use the **Add Unattended Program** option in Packager if Setup has a silent install option.

See the online help in Packager for information about the ADF file or an unattended program.

Using the Packager Window

This section describes the Packager main window and provides basic steps for creating a package. See the Packager online help for more detailed information about how to create a package.

For most ADF packages, you will:

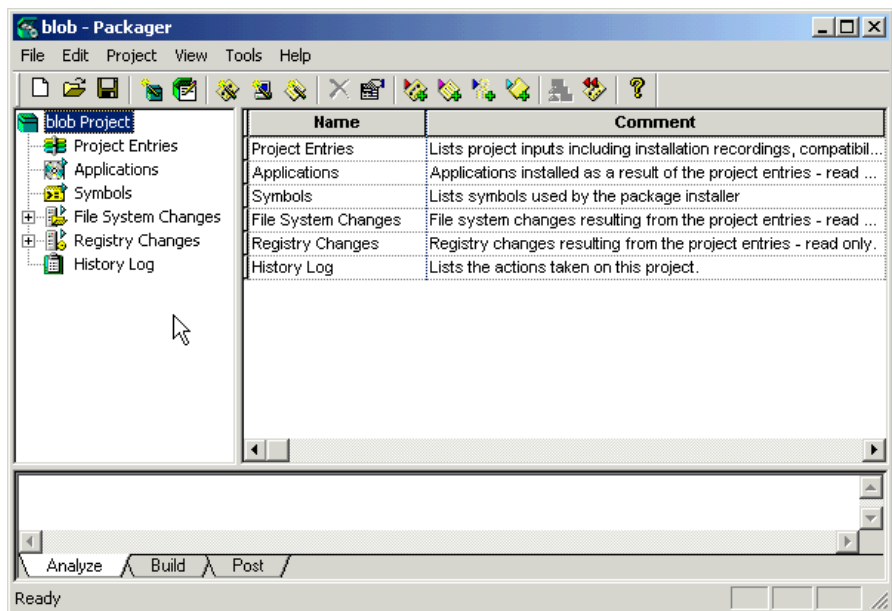
- Create a new project
- Record the application setup
- Add other necessary components to the project

- Build the package
- Copy the package to a network share point

► **To start Packager**

1. From the Start menu, click **Programs > Citrix > Citrix Installation Manager > Citrix Packager**.
2. Before you build a package, you must create a new project when you run Packager, either by selecting **Create a new project using project wizard** from the Packager **Project** dialog box or from the **File** menu of the Packager if the wizard is not displayed.

When active, Packager displays a window with two panes.



- The left pane displays a list of the possible items in the project known as the *Packager* tree.
- The right pane displays detailed information in columns about the item selected in the left pane. When you add components to the project, the details appear in this pane. You can edit some of the items in the left pane, but not all of them.

Using Tabs

When a process in the creation of an ADF package finishes, the **Analyze**, **Build**, and **Post** tabs at the bottom of the Packager window display output messages. For example, during or after the *build* phase of the package (as you build the package), output messages appear. Click the **Build** tab, then click and drag the horizontal bar up to expand the message viewing area.

Using the Menus

You can perform most of the tasks required to package applications from the menus.

File. This menu contains options to run the Project wizard, create a new project, open or save a project, view the project properties, select another project, close the project, or exit Packager.

Edit. This menu contains options to delete a package or to view its properties.

Project. This menu contains options to add the components of your project: run the recording of an application setup, add a compatibility script or an unattended program for silent installs, add other files, or build the package.

View. This menu contains options to display the toolbar, the status bar, the Project wizard, package output, or to refresh the Packager window.

Tools. This menu contains options to add a package automatically to the Installation Manager database in the console, specify where to build the package, and to roll back a package recording process.

Help. This menu contains options to launch the online help system and includes general information about Installation Manager.

Using the Toolbar

You can use the toolbar to perform most tasks that appear in the menus.

Creating a Package

The following steps describe how to create a basic package. See the online help for more information.

► To use Packager

1. From the **Project** dialog box, select one of these options:
 - **Create a new project using project wizard.** This option starts the Project wizard.
 - **Open an existing project.** Displays a list of existing projects.
 - (Optional) Select **Don't show this dialog box again** to go directly to the wizard or the last open project the next time Packager starts (depending on the option you select).
2. Click **Next**.

► To use the Project wizard

The Project wizard guides you through the process of adding your package components, adding a compatibility script if needed, building the package, and saving your package to a network share point so it can be managed from the console.

1. To simplify package creation, select one of the following wizards and click **Next**.
 - **Package an Installation Recording.** This wizard records an application installation.
 - **Package an Unattended Program.** This wizard installs an application without user intervention, such as a service pack or patch.
 - **Package Selected Files.** This wizard packages other files, such as a service pack.
2. Click through the wizard screens and add each of your components.
3. Click **OK** to finish.

► To create a package without the Project wizard

This procedure describes how to create a simple package manually. You must create a project before you build the package.

See the online help for detailed information about each step.

1. If the **Project** dialog box opens when you start Packager, click **Cancel** to close it.

2. To create a new project, from the **File** menu, choose **New Project** and click **OK**. Name the project and specify the name of the project file.
To open an existing project, from the **File** menu, choose **Open Project**. Alternatively, in the **Project** dialog box, select the project to open and click **Open**.
3. From the **Project** menu, choose **Add Recording**.
When you start the installation of an application, Packager records the installation setup routine.
4. In the **Start Recording** dialog box, browse to the location of the application or choose the application.
5. (Optional) Click **Advanced** to customize your recording.
 - Include the events for the selected drive
 - Select the actions to include in the recording
6. Click **Start**.
The application installs and Packager records the installation.
7. Click **Done** when the recording finishes.
8. From the **Tools** menu, choose **Build Options**.
9. Browse or type the UNC path to the network share point where the package will be located.
10. Select **Add packages to the Installation Manager database** if you want this package to be available in the console after you create rights on the network share point and set up a network account. Selecting this option saves a step later.
11. Type the name of the Default server and click **OK**. The Default server can be any server in the server farm.
12. From the **Project** menu, choose **Build Package**.
13. (Optional) Click the **Build** tab to view the results of the build.
14. Check the network share point to see if the package is there.

Example: Create an ADF Package

The general steps required to create an ADF package, add it to Installation Manager, and schedule it for installation on target servers are:

1. Make sure the Packager server is *clean*.
2. Start Packager.
3. Create a new project in Packager or use the Project wizard to guide you through Steps 3–5. See “Projects and Packages” on page 46 for information about projects.

Note Make sure you disable all sessions before you begin a recording.

4. Record the application setup. Only one recording is allowed for each package.
5. Build an ADF package and copy the package to a share point on the network.
6. Roll back the Packager server to its original state before the package was created.
7. Set up a user account in the console with Read and Write permission to copy the package to a share point on the network.
8. Add the new package to the Installation Manager database using Packager or the console.
9. Schedule a job to install the package on the target server.
10. View the result to determine if the installation was successful.

Creating ADF Packages of Legacy (Non-MSI) Applications

This method creates legacy application packages that you can install unattended. Legacy applications are generally applications not written for use on a multi-user system.

You can use the following options to build the components of your ADF package:

Add Recording. Record an application’s installation.

Add Compatibility Script. Merge application compatibility scripts.

Add Unattended Program. Install legacy applications directly by launching silent or unattended installations (such as service packs).

Add Files. Add one or more files to a package.

The following procedure gives you a basic understanding of how to create various packages.

Important Make sure you use a *clean* Packager server before recording your installation.

► **To create packages for legacy applications**

1. Launch Packager.
2. From the **File** menu, choose **New Project** to create a new project for your package. Enter the project name and location.
3. (Optional.) To record the application's installation, from the **Project** menu, choose **Add Recording**. Browse to the application you want to record and add the application to the package.

Note The recording does not continue if a reboot is required during an application installation unless your application supports an unattended installation. If you do not want your application to reboot the server (which stops the recording process), choose **No** when the application prompts you to reboot. If you do not have a choice to reboot, press ALT+TAB at the recording progress dialog box, then click **Done** and save the project. Click **OK** at the request to reboot.

4. To choose the package location, from the **Tools** menu, choose **Build Options**. Browse to the location to which you want to copy the package.

Tip You can select **Add packages to the Installation Manager database** to copy this package to a network share point. Make sure the share point has the proper rights and that you set up the network account in the console before you proceed to copy the file. Otherwise, you will have to add the package in the console.

5. To build the package, from the **Project** menu, choose **Build Package**.
6. To view the build output messages, from the **View** menu, choose **Output** at the bottom of the Packager window.

Creating ADF Packages that Include Other Files

This procedure explains how to add specific files for updates to legacy applications. An installation script is not needed in this procedure.

► **To create installation packages using one or more files**

1. Launch Packager.
2. From the **File** menu, choose **New Project** to create a new project for your package.
3. To add the files, from the **Project** menu, choose **Add Files**. Browse to and select the files you want to include in the package.
4. To choose the package location, from the **Tools** menu, choose **Build Options**. Browse to the location to which you want to copy the package.

Tip You can select **Add packages to the Installation Manager database** to copy this package to a network share point. Make sure that you set up the network account in the console.

5. To build the package, from the **Project** menu, choose **Build Package**.
6. To view the build output messages, from the **View** menu, choose **Output**.

Creating ADF Packages of Applications that Include a Silent Install

This method allows you to install applications using the application vendor's defaults (called a *silent install*). Use this method when your input is not required to install the package.

► **To create installation packages using the defaults**

1. Launch Packager.
2. From the **File** menu, choose **New Project** to create a new project for your package.
3. Add the unattended program. From the **Project** menu, choose **Add Unattended Program**.
4. To choose the package location, from the **Tools** menu, choose **Build Options**. Browse to the location to which you want to copy the file.

Tip You can select **Add packages to the Installation Manager database** to copy this package to a network share point. Make sure that you set up the network account in the console. If you add your package using this option, you do not have to add the package in the console.

5. To build the package, from the **Project** menu, choose **Build Package**.
6. From the **View** menu, choose **Output** to view the history.

The left pane displays the project name and all data that you added to this project.

Adding Packages to the Installation Manager Database

This method allows you to schedule and install an ADF or MSI package on a target server from the console.

Note Make sure proper administrative rights are set up for your domain, the user account is set up for the person who will be adding and installing the package on the target servers, and that file sharing is allowed for the package you add.

► To add the package

1. On the desktop, open **Citrix Management Console**.
2. Log on to the server farm.
3. In the tree view, right-click **Installation Manager** and choose **Properties**.
4. Click the **Network Account** tab.
 - In the **User Name** box, type the account name or click **Browse** to add the account name.
If you click **Browse**, in the Look in list, choose the domain name and choose an account name from the list.
 - In the **Password** box, type the password.
 - In the **Verify Password** box, type the same password again.
 - Click **OK**.
5. Click to expand the Installation Manager item in the tree view.
6. Click to expand **Packages** and the package group if applicable.

Note If you create a package group, you can view the packages and applications in each package by clicking the package group, and then the package.

7. Right-click **Packages** and choose **Add Package**.
 - In the **Package Name** box, enter a unique name for the package.
 - In the **File** box, enter the pathname of the package that you want to add or click **Browse** to locate the file. Look for the package with the .wfs or .msi extension.
 - Click **OK** twice. The package appears in the Packages or Package Groups item in the tree.
 8. To install the package, right-click the package item and select **Install Package**.
 9. Select the operating system platform on which to install the package.
 10. Select a server on which to install the package and click **Add**.
 11. Click **Next**.
 12. To schedule the installation, specify the date and time to install the package in the **Schedule Details** dialog box.
-
- Tip** You can view the package and all of the servers that you selected for the package in Schedule Targets.
-
13. (Optional) You can force the target server to restart after the package installation by selecting **Force reboot after install**.
 14. Click **Finish**.
 15. To view the results, click the package in the tree and click the **Jobs** tab.

Restoring the Packager Server to its Original State

Use Packager to restore your operating system to its original state before you created your project and built your ADF package. Perform this task every time you create a new package.

► **To roll back your operating system to a clean state**

1. Launch Packager.
2. From the **Tools** menu, choose **Rollback**.
3. Select the project that you want to roll back.
4. Click **Rollback** to roll back the session or click **Delete** to remove the session permanently.
5. Click **Yes**.
6. Click **Close**.

Glossary



ADF file See *Application Deployment File*.

ADF package An installation package that includes the Installer service script file and all of the support files necessary to complete an installation without user intervention. ADF packages are built using Citrix Packager.

application compatibility script A file containing commands and registry settings necessary for some applications to run in multisession environments such as Windows 2000 Server.

Application Deployment File A script file that describes steps used by the Installer service to install applications in the Application Deployment File (ADF) package without user intervention. The format of the Installer service script file interpreted and generated by Citrix Packager that contains installation information such as packaged files and directories plus registry settings.

application package An ADF or MSI package that includes the instructions and files to complete installation without user intervention.

Application Publisher A wizard you use to publish applications and other items on MetaFrame servers.

attended machine A server with a logged-on user who can respond to system prompts.

Citrix administrators A system administrator who is responsible for installing, configuring, and maintaining MetaFrame servers.

Citrix Installation Manager Subsystem The software component that controls scheduling and initiates an installation on a target server.

Citrix Installation Manager (Installation Manager) A MetaFrame XPe feature type that allows administrators to install packaged applications on target servers from a single server running Citrix Management Console. Installation Manager runs on IMA.

Citrix Management Console The extensible, platform-independent tool for administering Citrix servers and management products.

Citrix Packager An application that monitors the changes that an application's installation makes on a server, records those changes as installation commands in an ADF file, and packages all the required support files for distribution on target servers.

ICA The acronym for Independent Computing Architecture. The architecture that Citrix uses to separate an application's logic from its user interface. With ICA, only the keystrokes, mouse clicks, and screen updates pass between the client and server on the network, while 100 percent of the application's logic executes on the server.

ICA Client Citrix software that enables users to connect to MetaFrame servers from a variety of client devices.

Independent Management Architecture (IMA) Citrix's server-to-server infrastructure that provides robust, secure, and scalable tools for managing any size server farm. Among other features, IMA enables centralized platform-independent management, an ODBC-compliant data store, and a suite of management products that plug in to Citrix Management Console.

installation script An editable text file with a .wfs extension that describes the steps for the Installer service to install an application in an ADF package without user intervention. In an installation script, Citrix Packager records all installation activities using a script language that the Installer service can interpret and execute to reproduce the installation.

Installer service A service that runs on a Citrix server that uses IMA. The Installer service executes a request to install ADF or MSI packages without user intervention.

job A package that is scheduled for installation or uninstallation.

mixed mode The mode of operation in which MetaFrame XP and MetaFrame 1.8 servers are able to function together in the same farm. Not all MetaFrame XP features are available in mixed-mode operation.

MSI package An installation package based on Microsoft's Windows Installer Service. MetaFrame XP 1.0, Feature Release 2 is an example of a suite that ships as an MSI package for installation on target servers.

package See *Application package*.

package group A group of ADF or MSI packages used for easier application deployment on target servers.

preferred package A package that may contain the same application as another package, but one that must be used to deploy on specific target servers.

project A container to package components for an ADF package. A project includes the application and any other files added to the project in which the package can be built.

published application An application installed on a Citrix server or server farm that is configured for multiuser access from ICA Clients.

- record log file** A log file of file system and registry changes recorded during an application installation.
- recorder** A feature of Packager that records installation events.
- rollback** 1. An action that restores the file system and registry settings to the initial condition prior to recording an installation using Packager. 2. An action that restores the file system and registry to its initial state if an error occurs during the installation of an MSI package.
- server farm** A group of MetaFrame servers managed as a single entity, with some form of physical connection between servers and an IMA-based data store.
- server group** A group of servers used for easier application deployment on target servers.
- silent install** See *unattended install*.
- target server** The server on which ADF or MSI packages are installed by Citrix Management Console and the Installer service.
- transform file** A database that can modify an MSI database without changing the MSI file. For example, Microsoft Office cannot run in a Terminal Services environment without the addition of a transform file.
- unattended install** An installation type that does not require user intervention during application installations.
- unattended server** A server that does not require user intervention during application installations.

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