Novell
ZENworks® 10 Configuration Management

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Contents

About This Guide

This *ZENworks 10 Configuration Management Software Distribution Reference* includes conceptual and task-based information to help you effectively manage software distribution in your ZENworks® system. This guide is organized as follows:

Audience

This guide is intended for ZENworks Configuration Management administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to the Novell® Documentation Feedback site (http://www.novell.com/documentation/feedback.html) and enter your comments there.

Additional Documentation

ZENworks Configuration Management is supported by other documentation (in both PDF and HTML formats) that you can use to learn about and implement the product. For additional documentation, see the ZENworks 10.1 Configuration Management documentation (http://www.novell.com/documentation/zcm101/index.html).

Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux*, should use forward slashes as required by your software.

Basic Concepts

1

Novell® ZENworks® Configuration Management provides great flexibility in distributing software. You can distribute applications and individual files, or simply make modifications to existing files on a device.

The following sections contain additional information that is important as you begin creating and managing bundles:

1.1 Bundles

Software is distributed through the use of bundles. A bundle consists of all the files, configuration settings, installation instructions, and so forth required to deploy and manage the application or files on a device. There are four types of bundles you can create:

- **Directive Bundle:** Performs one or more actions on a device. For example, you can use a Directive bundle to edit a Windows* INI file or text file. You can run a script, start or stop a service, or delete a file. In addition, the bundle can include multiple actions to perform.

- **File Bundle:** Copies or installs files or directories to a device. For example, you can use a File bundle to include configuration files or data files. A File bundle is useful to distribute files that are not part of a Windows bundle.

- **Imaging Bundle:** Performs operations before the operating system boots. The various Imaging bundle types let you install images on one or more devices, or run ZENworks scripts containing any commands that you can issue from the imaging bash prompt.

- **Windows Bundle:** Distributes a Microsoft* Windows Installer (MSI) package, Microsoft Windows Software Patch (MSP) package, thin-client application, or other Windows-based applications to a Windows device.

The software included with a bundle is uploaded to the ZENworks Server repository. This enables the ZENworks Server and ZENworks Adaptive Agent to distribute the software without requiring access to any other network locations.

To create a software bundle, you use the Create New Bundle Wizard in ZENworks Control Center or by using the zman command line utility.

The sections in this guide provide conceptual and task-based information to help you effectively manage software distribution in your ZENworks system. You can also use the online Help system for information about creating bundles.

1.2 Assigning Bundles to Devices vs. Users

You can assign bundles to both users and devices. There are differences between the two assignment types that you need to be aware of. When you assign a bundle to users, the bundle is available to all assigned users regardless of the device they log on to. When you assign a bundle to a device, the bundle is available to all users who log on to the assigned device.

1.3 Packaging Considerations

Because of the way that ZENworks Configuration Management handles bundle packaging, be aware of the following when you create bundles:

◆ **Time Required for Packaging:** Creating large MSI and MSP bundles might take several hours to package before they are available on ZENworks content servers (ZENworks Servers and Content Distribution Points) in your Management Zone.

Large application files are compressed and encrypted, resulting in smaller bundles that reduce bandwidth during transmission and provide greater security during transmission and on the content server. The encrypted bundles cannot be removed from the content server and inappropriately used.

◆ **Space Required for Packaging:** Creating bundles that contain content temporarily requires up to twice the amount of disk space as the original files. The bundle creation process uploads copies of the original files from the local machine to a temporary directory on the ZENworks content server. The process then packages those files as encrypted, compressed ZENworks content files. After the ZENworks content files are created, the original uploaded files are automatically deleted.

If you are using ZENworks Control Center to create the bundle, and if for some reason you do not log out correctly (you close your browser before completing the Create New Bundle Wizard, you browse to somewhere else, or your machine crashes), the temporary directory mentioned above is automatically cleared after the session timeout is reached (30 minutes, by default).

In some circumstances (the ZENworks Server goes down during processing, for example), the bundle creation process is unable to delete these temporary files. You can manually delete these temporary files, as needed.

Depending on the operating system and the utility used to create the bundle, the temporary files are located in the following directories:

Table 1-1   *Location of Temporary Files for Windows*

Utility Used to Create Bundle	Location of Temporary Files
ZENworks Control Center	*zenworks_home*\share\tomcat\temp
zman (command line utility)	*zenworks_home*\work\content-repo\tmp
ZENworks Migration Utility	*zenworks_home*\work\collection\datamodel

Table 1-2 *Location of Temporary Files for Linux*

Utility Used to Create Bundle	Location of Temporary Files
ZENworks Control Center	`/opt/novell/zenworks/share/tomcat/temp/`
zman (command line utility)	`/var/opt/novell/zenworks/content-repo/tmp/`
ZENworks Migration Utility	`/var/opt/novell/zenworks/collection/datamodel/`

1.4 Dependency Bundles

When you create the following actions for a bundle, you create bundle dependencies:

- Action - Install Bundle
- Action - Launch Bundle
- Action - Uninstall Bundle
- Action - Verify Bundle

A bundle's Dependency Bundles tree shows the chaining information of that bundle and the action sets that each dependency is in. To view the Dependency Bundles tree in ZENworks Control Center, click the *Bundles* tab, click a bundle that has dependent bundles, then on the *Summary* tab, click the *Display Bundle Dependencies* link in the *Dependency Bundles* row. If the selected bundle does not have dependent bundles, the link displays *None* instead of *Display Bundle Dependencies*.

The following sections contain additional information:

1.4.1 Primary Applications vs. Dependent Applications

When working with bundle dependencies, the primary bundle is the bundle for which you are establishing dependencies. The bundles that are defined as dependencies are called the dependent bundles. The following illustration shows this relationship. Application A as the primary bundle with Applications B, C, and D as dependent bundles.

Figure 1-1 *Dependency Bundle Tree*
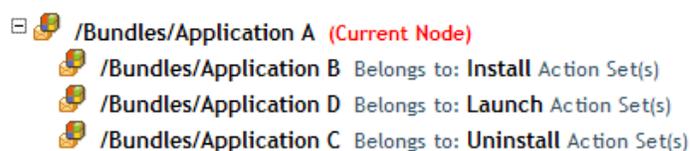
A primary bundle can have one dependent application or, as shown in the above example, it can have multiple dependent applications.

In addition, a bundle can be both a primary bundle and a dependent bundle, as shown in the following illustration. Application A as the primary bundle, with Applications B, B1, B2, C, and D as dependent bundles.

Figure 1-2 *Dependency Bundle Tree*
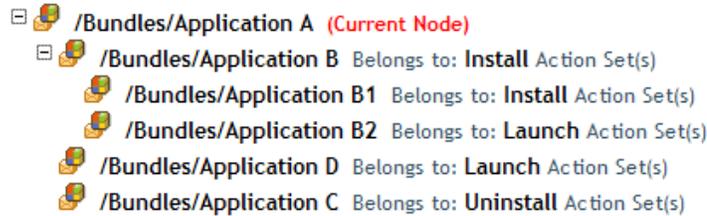
In the above example, Application B is one of Application A's dependent bundles. At the same time, Application B has dependencies on two bundles, Application B1 and Application B2.

1.4.2 Bundle Chains

A bundle chain is two or more bundles linked together by dependencies. In its simplest form, a application chain consists of two levels, as shown in the following illustration.

Figure 1-3 *Dependency Bundle Tree*
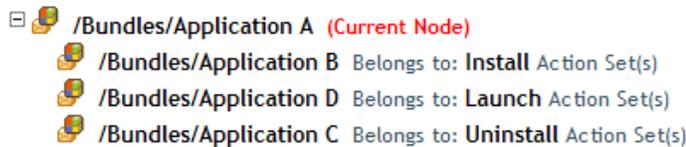
However, when bundle dependencies are nested, a bundle chain can grow to include many levels. In the following example, Application A has a dependency on Application B. Application B, in turn, has dependencies on Application B1 and Application B2. As a result, all three bundles (B, B1, B2), in addition to applications C and D, must be present in order for Application A to run.

Figure 1-4 *Dependency Bundle Tree*
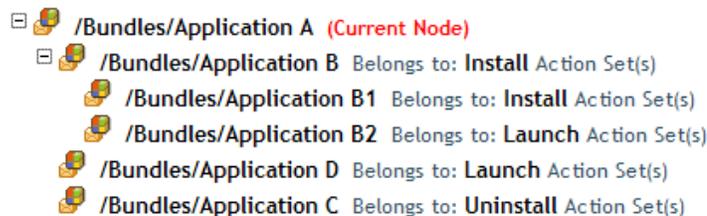
In some cases, a bundle might belong to more than one bundle chain, as in the following example where Application D is a dependent application for both Application A and Application E.

```
⊟ 🗂 /Bundles/Application A
    ⊟ 🗂 /Bundles/Application B  Belongs to: Install Action Set(s)
        ⊟ 🗂 /Bundles/Application B1  Belongs to: Launch Action Set(s)
             🗂 /Bundles/Application B3  Belongs to: Launch Action Set(s)
         🗂 /Bundles/Application B2  Belongs to: Launch Action Set(s)
     🗂 /Bundles/Application D  Belongs to: Launch Action Set(s) (Current Node)
     🗂 /Bundles/Application C  Belongs to: Uninstall Action Set(s)
⊟ 🗂 /Bundles/Application E
     🗂 /Bundles/Application D  Belongs to: Launch Action Set(s) (Current Node)
```

1.4.3 Distributing, Installing, and Launching a Bundle That Has Dependencies

When setting up bundle dependencies, you should be aware of the following:

Bundle Assignment: A dependent bundle does not need to be assigned to devices or users. The primary bundle, however, must be assigned to one or more devices or users for it to function properly.

Distribution and Installation: If dependent bundles have not already been distributed to or installed on the user's workstation, when a user launches or installs a bundle, ZENworks Adaptive Agent distributes and installs them. ZENworks Adaptive Agent distributes a dependent bundle only once, unless the dependent bundle's version is updated or the distribution or installation is unsuccessful. If ZENworks Adaptive Agent is unable to distribute or install a dependent bundle (for example, the user's workstation does not meet the dependent bundle's system requirements), the primary bundle is not launched or installed.

Distribution Through an Add-On Image: If you distribute a bundle through an image add-on, its dependent bundles must be included as another image add-on. Otherwise, the distribution of the primary bundle fails.

Distribution to Disconnected Workstations: For disconnected workstations, the bundles must be force cached to the workstation before it becomes disconnected. If changes are made to dependent bundles after the bundles have been cached to workstations, the version number of the primary bundle must be updated in order to force a re-cache of the bundles.

Launch: Each time a bundle is launched, ZENworks Adaptive Agent performs any launch operations, such as other actions, defined for its dependent bundles.

1.5 Content

When you create bundles containing content, the content is copied to content servers (ZENworks Servers or Content Distribution Points), replicated to other content servers, and delivered to managed devices.

The following sections contain additional information:

1.5.1 Content Replication

Content Replication lets you determine how often content (bundle and policy files) is updated on the ZENworks (primary) Servers and Content Distribution Points. ZENworks Servers and Content Distribution Points are collectively referred to as content servers when discussing them in their roles of hosting content.

When a bundle or policy that contains content is added to the Management Zone, the ZENworks database is updated to reflect the addition of the content. Content servers are responsible for periodically reading the ZENworks database to discover new content. Each content server that does not have the content then retrieves the content from a content server where it resides.

If content has been removed from the Management Zone, each content server also removes the obsolete content during the periodic update.

For more information, see "Content Replication" in the *ZENworks 10 Configuration Management System Administration Reference*.

1.5.2 Content Delivery

Content delivery, or distribution, refers to the process of transferring bundle and policy content from a content server (ZENworks Server or Content Distribution Point) to a managed device.

There are a variety of settings you can use to determine how content is delivered to managed devices. You can:

- Set up Closest Server rules that determine from which content server a managed device downloads its content.
- Schedule times, referred to as delivery blackout dates, when content cannot be downloaded by managed devices.
- Decide how often you want managed devices to look for new content to download.

For information about performing these tasks, see "Content Delivery" in the *ZENworks 10 Configuration Management System Administration Reference*.

Creating Bundles

<div style="text-align: right; font-size: 3em;">2</div>

A bundle consists of all the files, configuration settings, installation instructions, and so forth required to deploy and manage the application or files on a device.

Novell® ZENworks® Configuration Management lets you create bundles by using ZENworks Control Center or by using the zman command line utility.

The following sections contain step-by-step instructions about creating bundles by using ZENworks Control Center:

The following section explains how to create bundles by using the zman command line utility:

2.1 Creating Directive Bundles

A Directive bundle lets you perform one or more actions on one or more devices, regardless of platform. For example, you can use a Directive bundle to edit a Windows INI file or text file. You can run a script, start or stop a service, delete a file, and more. In addition, the bundle can include multiple actions to perform.

You can use ZENworks Control Center or the zman command line utility to create bundles. The following procedure explains how to create a bundle using ZENworks Control Center. If you prefer the zman command line utility, see "Bundle Commands" in "ZENworks Command Line Utilities".

To create a Directive bundle:

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundle* list, click *New*, then click *Bundle* to display the Select Bundle Type page.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│ Create New Bundle   DirectiveBundle1                                          │
│ ⚙  Step 1: Select Bundle type                                                 │
├─────────────────────────────────────────────────────────────────────────────┤
│ Select the type of Bundle you wish to create from the list of options.        │
│                                                                               │
│   New Bundle Type:          Description:                                       │
│   ┌───────────────────┐     Directive Bundle - Select this option to create   │
│   │ Directive Bundle ▲│     a bundle which performs a set of tasks on a        │
│   │ File Bundle       │     number of managed devices, regardless of platform  │
│   │ Imaging Bundle    │                                                        │
│   │ Windows Bundle    │                                                        │
│   │                   │                                                        │
│   │                 ▼ │                                                        │
│   └───────────────────┘                                                       │
│                                                                               │
│ ───────────────────────────────────────────────────────────────────────      │
│                                    << Back    Next >>    Cancel                │
└─────────────────────────────────────────────────────────────────────────────┘
```
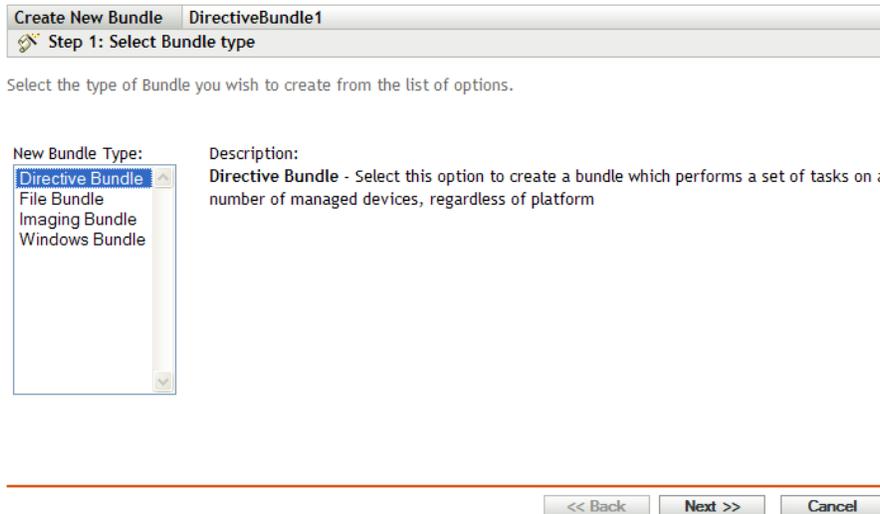
3 Select *Directive Bundle*, click *Next* to display the Define Details page, then fill in the fields.

Bundle Name: Provide a name for the bundle. The bundle name must be different than the name of any other item (bundle, group, folder, and so forth) that resides in the same folder. The name you provide displays in ZENworks Control Center and the ZENworks Adaptive Agent (on managed devices).

For more information, see Appendix A, "Naming Conventions in ZENworks Control Center," on page 79.

Folder: Type the name or browse to and select the ZENworks Control Center folder where you want the bundle to reside. The default is /bundles, but you can create additional folders to organize your bundles.

Icon: ZENworks Configuration Management lets you select an icon that users see during installation of a particular bundle. This icon applies only to the icon displayed by ZENworks Adaptive Agent on the managed device. ZCC uses default icons to represent the different bundles (Directive, File, Imaging, and Windows).

To select an icon, click *Browse*, then browse to and select the icon you want to display on managed devices.

If the desired icon is embedded in a .exe, .dll, or .ico file that has multiple icons from which to choose, you must install additional items before you can browse to and select the desired icon.

For Mozilla Firefox, if you have not already installed the Novell File Upload extension on this device, you must do so before you can download and install the download plugin or browse to and upload the icon. For more information, see "Novell File Upload Extension" on page 89. After you install the Novell File Upload extension, you must also install the download plugin. To do so, click the *Click here to download plugin* message box that displays in the Select Icon dialog box (if you have already installed the plugin on this device, the plugin box does not display), click *Manual Install*, then click *Install Now*.

For Microsoft Internet Explorer, you must install the Novell File Upload ActiveX control only; there is no download plugin for Internet Explorer. For more information, see "Novell File Upload Extension" on page 89.

After you have downloaded and installed the necessary extensions and plugin, click 🔍 to browse to and select the icon you want ZENworks Adaptive Agent to display to represent the

bundle. If the icon is embedded in a `.exe`, `.dll`, or `.ico` file that contains multiple icons, an additional dialog box displays to let you select the desired icon.

If you do not specify an icon, a default icon is used.

Description: Provide a short description of the bundle's contents. This description displays in ZENworks Control Center and in the ZENworks Adaptive Agent.

4 Click *Next* to display the Add Actions page, click *Add*, then select an action.

5 Fill in the options in the dialog box that displays. Click the *Help* button if you need additional information, or for a list of each action and its description, including in-depth configuration information for each action, see Appendix E, "Actions," on page 97.

You can add multiple actions to the bundle.

6 (Conditional) Select the *Continue on Failure* check box next to the action (or actions) you want to bypass on failure.

If one of the actions in the action set fails, the remaining actions in the set are performed.

7 Click *Next* to display the Summary page, then review the information on the Summary page, making any changes to the bundle settings by using the *Back* button as necessary.

8 (Conditional) Select the *Define Additional Properties* check box to display the bundle's Summary page after the wizard completes. You can use the various tabs to edit the bundle's assignments, requirements, actions, settings, and content replication settings.

9 Click *Finish* to create the bundle as configured per settings on the Summary page.

When you click *Finish*, the bundle is created but it does not have users or devices assigned, schedules, or group membership. At some point in the future, you need to configure additional options for the bundle by continuing with Section 3.2, "Assigning Existing Bundles to Devices," on page 39 or Section 3.3, "Assigning Existing Bundles to Users," on page 42.

2.2 Creating File Bundles

A File bundle lets you copy or install files or directories to a device. For example, you can use a File bundle to include configuration files or data files. A File bundle is useful to distribute files that are not part of a Windows bundle.

You can use ZENworks Control Center or the zman command line utility to create bundles. The following procedure explains how to create a bundle using ZENworks Control Center. If you prefer the zman command line utility, see "Bundle Commands" in "ZENworks Command Line Utilities".

For important information about creating File bundles, see Section 1.3, "Packaging Considerations," on page 12.

To create a File bundle:

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundle* list, click *New*, then click *Bundle* to display the Select Bundle Type page.

Create New Bundle

Step 1: Select Bundle type

Select the type of Bundle you wish to create from the list of options.

New Bundle Type:

- Directive Bundle
- **File Bundle**
- Imaging Bundle
- Windows Bundle

Description:

File Bundle - Select this option to create a bundle which copies or installs files or directories to a number of managed devices.

| << Back | Next >> | Cancel |
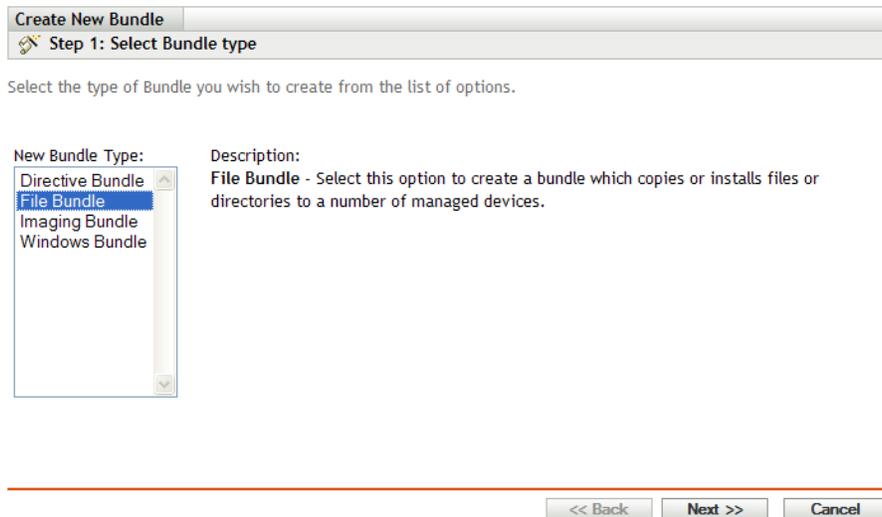
3 Select *File Bundle*, then click *Next* to display the Select Bundle Category page.
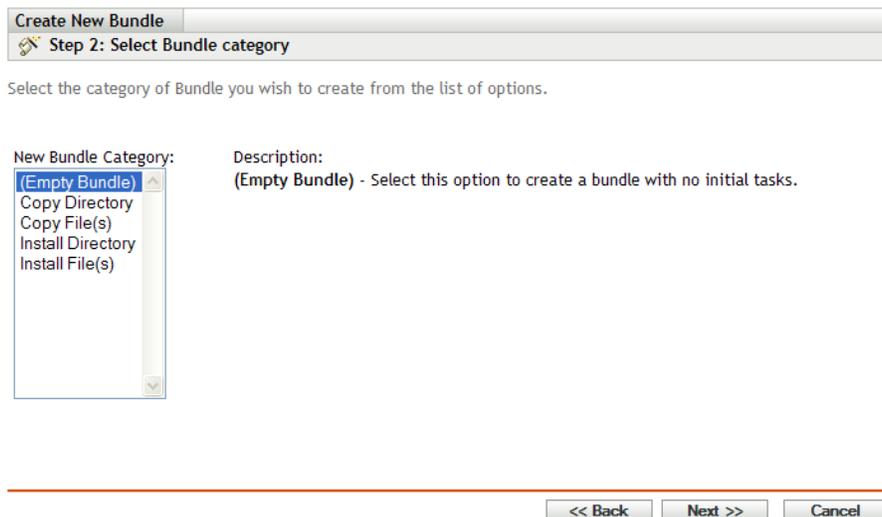
Create New Bundle

Step 2: Select Bundle category

Select the category of Bundle you wish to create from the list of options.

New Bundle Category:

- **(Empty Bundle)**
- Copy Directory
- Copy File(s)
- Install Directory
- Install File(s)

Description:

(Empty Bundle) - Select this option to create a bundle with no initial tasks.

| << Back | Next >> | Cancel |

4 Select the desired bundle category:

Empty Bundle: A bundle with no initial tasks. This bundle category is useful to quickly create a bundle without performing all of the tasks in the Create New Bundle Wizard. After you create the empty bundle, you can edit its details to add assignments, actions, and so forth, at a later time.

Copy Directory: Copies a directory (folder) onto a managed device (or from the device to somewhere else). The directory is copied from one location to another at the time this bundle is launched on the managed device. The directory is not uploaded to the ZENworks content system.

Copy Files: Copies one or more files onto a managed device (or from the device to somewhere else). The files are copied from one location to another at the time this bundle is launched on the managed device. The files are not uploaded to the ZENworks content system.

Install Directory: Uploads the contents of a directory and all of its subdirectories to the ZENworks content system and then installs them to the destination path on the managed device. The content (by default) is replicated to all primary servers.

Install Files: Uploads selected files to the ZENworks content system and then installs them to the destination path on the managed device. The content (by default) is replicated to all primary servers.

NOTE: Copying a file or directory copies the file or directory from one location to another without uploading the files into the ZENworks content repository. Copying a file or directory is described as copying without using content. When copying a file or directory, the managed device performs the copy operation and must be able to resolve both the source and destination paths. Also, when copying a file or directory, the file or directory is not cached on the managed device.

Installing a file or directory uploads the file or directory to the ZENworks content repository before it is distributed to assigned devices. Installing a file or directory is described as copying using content. When installing a file or directory, the file or directory is cached on the managed device.

Installing an executable file does not launch or execute the file. To launch or execute the file, you must add a launch executable action (Launch Windows Executable, Launch Java Application, and so forth) to the bundle. For more information, see Appendix E, "Actions," on page 97.

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5 Click *Next* to display the Define Details page, then fill in the fields:

Bundle Name: Provide a name for the bundle. The bundle name must be different than the name of any other item (bundle, group, folder, and so forth) that resides in the same folder. The name you provide displays in ZENworks Control Center and the ZENworks Adaptive Agent (on managed devices).

For more information, see Appendix A, "Naming Conventions in ZENworks Control Center," on page 79.

Folder: Type the name or browse to and select the ZENworks Control Center folder where you want the bundle to reside. The default is /bundles, but you can create additional folders to organize your bundles.

Icon: ZENworks Configuration Management lets you select an icon that users see during installation of a particular bundle. This icon applies only to the icon displayed by ZENworks Adaptive Agent on the managed device. ZCC uses default icons to represent the different bundles (Directive, File, Imaging, and Windows).

To select an icon, click *Browse*, then browse to and select the icon you want to display on managed devices.

If the desired icon is embedded in a .exe, .dll, or .ico file that has multiple icons from which to choose, you must install additional items before you can browse to and select the desired icon.

For Mozilla Firefox, if you have not already installed the Novell File Upload extension on this device, you must do so before you can download and install the download plugin or browse to and upload the icon. For more information, see "Novell File Upload Extension" on page 89. After you install the Novell File Upload extension, you must also install the download plugin. To do so, click the *Click here to download plugin* message box that displays in the Select Icon dialog box (if you have already installed the plugin on this device, the plugin box does not display), click *Manual Install*, then click *Install Now*.

For Microsoft Internet Explorer, you must install the Novell File Upload ActiveX control only; there is no download plugin for Internet Explorer. For more information, see "Novell File Upload Extension" on page 89.

After you have downloaded and installed the necessary extensions and plugin, click 🔍 to browse to and select the icon you want ZENworks Adaptive Agent to display to represent the bundle. If the icon in embedded in a `.exe`, `.dll`, or `.ico` file that contains multiple icons, an additional dialog box displays to let you select the desired icon.

If you do not specify an icon, a default icon is used.

Description: Provide a short description of the bundle's contents. This description displays in ZENworks Control Center and in the ZENworks Adaptive Agent.

6 Click *Next*, then skip to the appropriate step, depending on which bundle category you chose in Step 4:

- ◆ **Copy Directory:** Continue with Step 7 on page 22.
- ◆ **Copy Files:** Skip to Step 8 on page 22.
- ◆ **Install Directory:** Skip to Step 9 on page 23.
- ◆ **Install Files:** Skip to Step 10 on page 24.

7 (Conditional) If you are creating a Copy Directory bundle, follow the wizard prompts until you reach the Summary page, then skip to Step 11 on page 25.

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select Directory page > *Source Directory* field	Specify the source directory. The path must be resolved by the device on which the bundle is run.
Select Directory page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.
Select Directory page > *Destination Directory* field	Specify the destination directory on the device in which you want to copy the directory.

8 (Conditional) If you are creating a Copy Files bundle, follow the wizard prompts until you reach the Summary page, then skip to Step 11 on page 25.

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select Files page > *File* field	Click *Add* to display the Select Files dialog box, specify the files you want to copy to the device, then click *Open*. Repeat this step as many times as necessary to copy the desired files.
Select Files page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.

Wizard Page and Field	Details
Select Files page > *Destination Directory* field	Specify the destination directory on the device in which you want to install the file. The path must be resolved by the device on which the bundle is run.
Select Files page > *Hidden* check box	Select the *Hidden* check box to specify that the file is hidden after installation.
Select Files page > *Read-only* check box	Select the *Read-only* check box to specify that the file is read-only after installation.
Select Files page > *Copy Option* list	Select a copy option from the list: **Copy Always:** Copies the file regardless of whether the file currently exists on the workstation. **Copy If Exists:** Copies the file only if the file currently exists on the workstation. **Copy If Does Not Exist:** Copies the file only if the file does not currently exist on the workstation. **Copy If Newer:** Copies the file only if its date and time are newer than the existing file's date and time, or if the file does not currently exist on the workstation. **Copy If Newer and Exists:** Copies the file only if it already exists on the workstation and has an older date or time. **Copy if Newer Version:** Copies the file only if its internal version is newer than the existing file's version (if version information is present). **Request Confirmation:** Prompts the user to verify that the file should be copied. **Copy If Different:** Copies the file if its date, time, or size is different than the existing file's date, time, or size.

9 (Conditional) If you are creating an Install Directory Files bundle, follow the wizard prompts until you reach the Summary page, then skip to .

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select Directory page > *Source Directory* field	Click 🔍 to display the Select Directory dialog box. Browse to and select the file to upload. The *Status* field displays each file's upload status.
Select Files page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see .
Select Directory page > *Destination Directory* field	Specify the destination directory on the device in which you want to install the directory.
Select Directory page > *Hidden* check box	Select the *Hidden* check box to specify that the directory is hidden after installation.

Wizard Page and Field	Details
Select Directory page > *Read-only* check box	Select the *Read-only* check box to specify that the directory is read-only after installation.
Select Directory page > *Copy Option* list	Select a copy option from the list:
	Copy Always: Installs the directory regardless of whether the directory currently exists on the workstation.
	Copy If Exists: Installs the directory only if the directory currently exists on the workstation.
	Copy If Does Not Exist: Installs the directory only if the directory does not currently exist on the workstation.
	Copy If Newer: Installs the directory only if its date and time are newer than the existing directory's date and time, or if the file does not currently exist on the workstation.
	Copy If Newer and Exists: Installs the directory only if it already exists on the workstation and has an older date or time.
	Copy if Newer Version: Installs the directory only if its internal version is newer than the existing directory's version (if version information is present).
	Request Confirmation: Prompts the user to verify that the directory should be installed.
	Copy If Different: Installs the directory if its date, time, or size is different than the existing directory's date, time, or size.

10 (Conditional) If you are creating a Install Files bundle, follow the wizard prompts until you reach the Summary page, then skip to .

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select Files page > *File* field	Click *Add* to display the Select Files dialog box, specify the files you want to install on the device, then click *Open*. Repeat this step as many times as necessary to copy the desired files.
	You can click *Clear* to remove files from the list.
Select Files page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.
Select Directory page > *Destination Directory* field	Specify the destination directory on the device in which you want to install the file.
Select Files page > *Hidden* check box	Select the *Hidden* check box to specify that the file is hidden after installation.
Select Files page > *Read-only* check box	Select the *Read-only* check box to specify that the file is read-only after installation.

Wizard Page and Field	Details
Select Files page > *Copy Option* list	Select a copy option from the list:
	Copy Always: Copies the file regardless of whether the file currently exists on the workstation.
	Copy If Exists: Copies the file only if the file currently exists on the workstation.
	Copy If Does Not Exist: Copies the file only if the file does not currently exist on the workstation.
	Copy If Newer: Copies the file only if its date and time are newer than the existing file's date and time, or if the file does not currently exist on the workstation.
	Copy If Newer and Exists: Copies the file only if it already exists on the workstation and has an older date or time.
	Copy if Newer Version: Copies the file only if its internal version is newer than the existing file's version (if version information is present).
	Request Confirmation: Prompts the user to verify that the file should be copied.
	Copy If Different: Copies the file if its date, time, or size is different than the existing file's date, time, or size.

11 Review the information on the Summary page, making any changes to the bundle settings by using the *Back* button as necessary.

12 (Conditional) Select the *Define Additional Properties* check box to display the bundle's Summary page after the wizard completes. You can use the various tabs to edit the bundle's assignments, requirements, actions, settings, and content replication settings.

13 Click *Finish* to create the bundle as configured per settings on the Summary page.

When you click *Finish*, the bundle is created but it does not have users or devices assigned, schedules, and group membership. At some point in the future, you need to configure additional options for the bundle by continuing with

2.3 Creating Imaging Bundles

Imaging bundles let you performs operations before the operating system boots. The various Imaging bundle types let you install images on one or more devices, or run ZENworks scripts containing any commands that you can issue from the imaging bash prompt.

For more information about Imaging bundles, see the *ZENworks 10 Configuration Management Preboot Services and Imaging Reference*.

2.4 Creating Windows Bundles

A Windows bundle lets you distribute a Microsoft* Windows Installer (MSI) package, Microsoft Windows Software Patch (MSP) package, thin-client application, or other Windows-based applications to a Windows device.

You can use ZENworks Control Center or the zman command line utility to create bundles. The following procedure explains how to create a bundle using ZENworks Control Center. If you prefer the zman command line utility, see "Bundle Commands" in "ZENworks Command Line Utilities".

To create a Windows bundle:

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundle* list, click *New*, then click *Bundle* to display the Select Bundle Type page.

Create New Bundle
Step 1: Select Bundle type

Select the type of Bundle you wish to create from the list of options.

New Bundle Type:
- Directive Bundle
- File Bundle
- Imaging Bundle
- Windows Bundle

Description:
Windows Bundle - Select this option if you want to create a Windows Application: Simple, MSI, MSP, Thin Client

<< Back   Next >>   Cancel
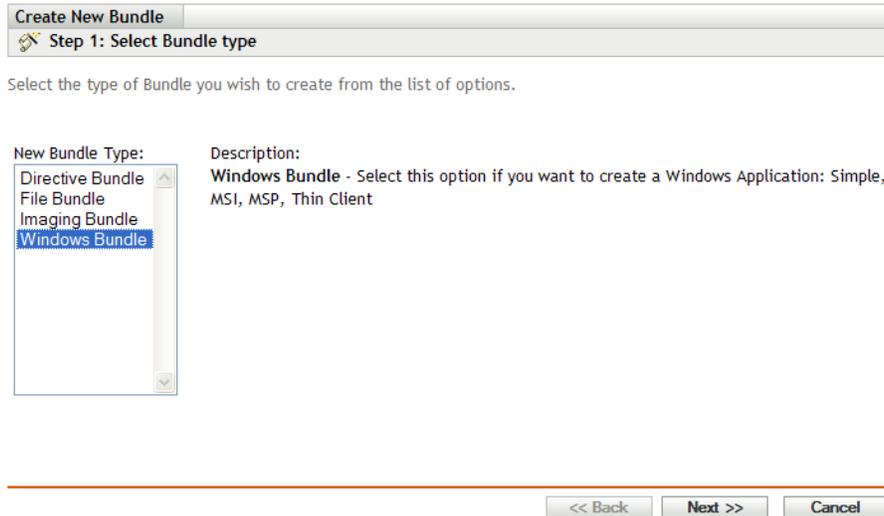
3 Select *Windows Bundle*, then click *Next* to display the Select Bundle Category page.
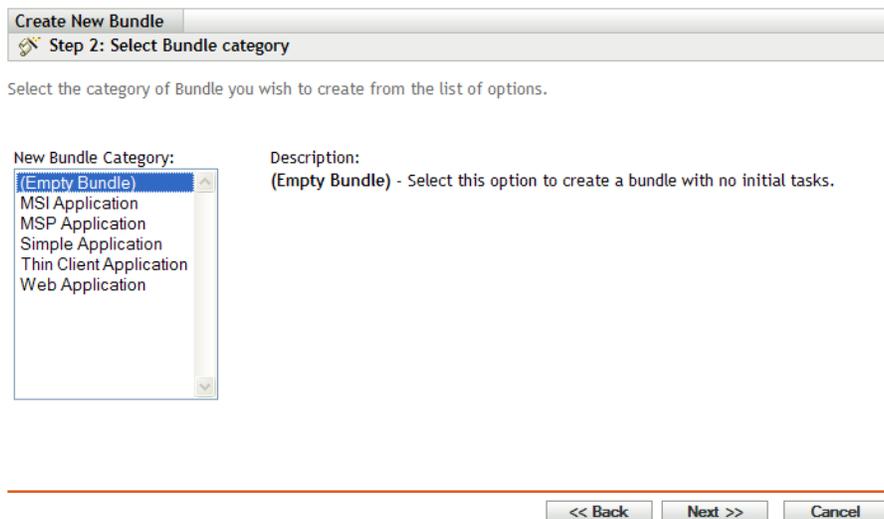
Create New Bundle
Step 2: Select Bundle category

Select the category of Bundle you wish to create from the list of options.

New Bundle Category:
- (Empty Bundle)
- MSI Application
- MSP Application
- Simple Application
- Thin Client Application
- Web Application

Description:
(Empty Bundle) - Select this option to create a bundle with no initial tasks.

<< Back   Next >>   Cancel

4 Select the desired bundle category:

Empty Bundle: A bundle with no initial tasks. This bundle category is useful to quickly create a bundle without performing all of tasks in the Create New Bundle Wizard. After you create the empty bundle, you can edit its details to add assignments, actions, and so forth, at a later time.

MSI Application: An application that is packaged as a `.msi` file so that it can be installed by the Microsoft Windows Installer program.

For important information about creating MSI Application bundles, see Section 1.3, "Packaging Considerations," on page 12.

MSP Application: An application patch that is packaged as a `.msp` file so that it can be applied by the Microsoft Windows Installer program.

For important information about creating MSP Application bundles, see Section 1.3, "Packaging Considerations," on page 12.

Simple Application: An application that is not packaged as a `.msi` or `.msp` file. Typically, this is an application that requires ZENworks Adaptive Agent to copy few files to the workstation and make few changes to the workstation's registry, INI files, environment variables, and so forth. An example is Windows Notepad.

If you have a non-MSI application that is more complex than this, we recommend that you use ZENworks Software Packaging, powered by AdminStudio* ZENworks Edition, to create an MSI package for the application and then use the MSI Application option to create a bundle. For more information, see the Macrovision* AdminStudio 8.0 ZENworks Edition Installation Guide (http://www.novell.com/documentation/zcm10/pdfdoc/adminstudio/ AS8ZENworksInstallGuide.pdf).

Thin-Client Application: An application, running on a terminal server, that is accessed through a terminal server client session (either RDP or ICA).

Web Application: An application that is launched by using a URL in a Web browser.

5 Click *Next* to display the Define Details page, then fill in the fields:

Bundle Name: Provide a name for the bundle. The bundle name must be different than the name of any other item (bundle, group, folder, and so forth) that resides in the same folder. The name you provide displays in ZENworks Control Center and the ZENworks Adaptive Agent (on managed devices).

For more information, see Appendix A, "Naming Conventions in ZENworks Control Center," on page 79.

Folder: Type the name or browse to and select the ZENworks Control Center folder where you want the bundle to reside. The default is `/bundles`, but you can create additional folders to organize your bundles.

Icon: ZENworks Configuration Management lets you select an icon that users see during installation of a particular bundle. This icon applies only to the icon displayed by ZENworks Adaptive Agent on the managed device. ZCC uses default icons to represent the different bundles (Directive, File, Imaging, and Windows).

To select an icon, click *Browse*, then browse to and select the icon you want to display on managed devices.

If the desired icon is embedded in a `.exe`, `.dll`, or `.ico` file that has multiple icons from which to choose, you must install additional items before you can browse to and select the desired icon.

For Mozilla Firefox, if you have not already installed the Novell File Upload extension on this device, you must do so before you can download and install the download plugin or browse to and upload the icon. For more information, see "Novell File Upload Extension" on page 89. After you install the Novell File Upload extension, you must also install the download plugin. To do so, click the *Click here to download plugin* message box that displays in the Select Icon dialog box (if you have already installed the plugin on this device, the plugin box does not display), click *Manual Install*, then click *Install Now*.

For Microsoft Internet Explorer, you must install the Novell File Upload ActiveX control only; there is no download plugin for Internet Explorer. For more information, see "Novell File Upload Extension" on page 89.

After you have downloaded and installed the necessary extensions and plugin, click 🔍 to browse to and select the icon you want ZENworks Adaptive Agent to display to represent the bundle. If the icon in embedded in a `.exe`, `.dll`, or `.ico` file that contains multiple icons, an additional dialog box displays to let you select the desired icon.

If you do not specify an icon, a default icon is used.

Description: Provide a short description of the bundle's contents. This description displays in ZENworks Control Center and in the ZENworks Adaptive Agent.

6 Click *Next*, then skip to the appropriate step, depending on which bundle category you chose in Step 4:

* **MSI Application:** Continue with Step 7 on page 28.
* **MSP Application:** Skip to Step 8 on page 30.
* **Simple Application:** Skip to Step 9 on page 31.
* **Thin Client Application:** Skip to Step 10 on page 32.
* **Web Application:** Skip to Step 11 on page 33.

7 (Conditional) If you are creating an MSI Application bundle, follow the wizard prompts until you reach the Summary page, then skip to Step 12 on page 33.

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select .msi File page > *Upload .msi file for normal install* field	Use this option if you want the `.msi` file copied to the ZENworks Server and then distributed from the ZENworks Server to assigned users and devices. This is referred to a normal install because ZENworks Adaptive Agent copies the `.msi` file to the managed device's local drive and then the Microsoft Windows Installer program installs the application from the local `.msi` file. **NOTE:** By default, ZENworks Control Center has a 30-minute timeout value. If you leave ZENworks Control Center idle on your computer for more than 30 minutes, you are prompted to log in again before continuing. Because the upload process can take considerable time for a large `.msi` file, the default timeout value does not apply for this page.
Select .msi File page > *Enter UNC path of .msi file for network install* field	Use this option if you want the Microsoft Windows Installer program to install the application from the `.msi` file on a network location. You must specify the complete path to the `.msi` file to use as the source file during distribution to the workstation. You can use a mapped drive or UNC path. If you use a drive mapping, you must ensure that all workstations have the same drive mapped to the source location. For this reason, we recommend that you specify a UNC path. After you create the MSI bundle, you cannot change the `.msi` filename; however, you can change the path to the `.msi` file. If you change the `.msi` filename, the installation fails.

Wizard Page and Field	Details
Select .msi File page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.
Select .msi File page > Install Parameters field	Click to display the Install Parameters dialog box, then specify the desired parameters. For more information, click the *Help* button or see Section B.1, "Install Parameters," on page 81.
Select .msi File page > *Unistall Parameters* field	Click to display the Uninstall Parameters dialog box, then specify the desired parameters. For more information, click the *Help* button or see Section B.2, "Uninstall Parameters," on page 83.
Select .msi File page > *Repair Parameters* field	Click to display the Repair Parameters dialog box, then specify the desired parameters. For more information, click the *Help* button or see Section B.3, "Repair Parameters," on page 85.
Select .msi File page > *Select Transforms File* field	Click *Add* to browse to and select the desired transform file. You can upload the transform file or you can specify its location.

Different groups within an organization often use the same application, but that doesn't mean they require the same feature set. One of the benefits of Windows Installer is that if you have 10 groups needing 10 different feature sets or other alterations for the same application, you can deploy the same MSI package to all 10 user groups, but with a different transform file (MST) applied for each group.

A transform file is a collection of changes applied to an MSI installation. It contains all modification information, such as whether features are installed; how they are installed; which files, shortcuts, and registry entries are included; and Add/Remove Programs applet information.

If you have vendor-supplied MSI packages, you can use Macrovision AdminStudio 8.0 ZENworks Edition to create and manage transforms. |

Wizard Page and Field	Details
Select .msi File page > *MSI Properties* field	The MSI package contains the property values that were defined during the administrative installation of the application. These property values determine the way the Microsoft Windows Installer installs the application to the workstation. In some cases, you might want to change one or more of the property values. For example, a property value might define the default location for a user's work files. By adding the property to the list and changing the property's value, you can override the default location defined in the MSI package.
	If necessary, you can add public properties that were not included in the MSI package. When doing so, you should be careful to add only those properties that are valid for the package.
	To override a property value, you change the property value and add the property to the Properties list so that Application Launcher knows to use that property value rather than the one defined in the MSI package. To do so, click *Add* to display the *MSI Properties* dialog box. In the *Name* field, select the property whose value you want to override, specify the new value in the *Value* field, then click *OK* to add the property to the *MSI Properties* list.
	To modify a property that is in the *MSI Properties* list, select the property, click *Edit*, modify the value data, then click *OK*.
	To remove a property from the *MSI Properties* list, select the property, then click *Remove*. Deleting the property causes future installations of the application to use the property value defined in the MSI package.
Select Command page > *Executable to run* field	The Select Command page lets you specify an optional executable to run after the `.msi` file installs. Click *Browse* to browse for and select the executable to run.
	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.

8 If you are creating an MSP Application bundle, follow the wizard prompts until you reach the Summary page, then skip to Step 12 on page 33.

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Select .msp File page > *Upload .msp file for normal install* field	Use this option if you want the `.msp` file copied to the ZENworks Server and then distributed from the ZENworks Server to assigned users and devices. This is referred to a normal install because ZENworks Adaptive Agent copies the `.msp` file to the managed device's local drive and then it is installed from the local `.msp` file.

Wizard Page and Field	Details
Select .msp File page > *Enter UNC path of .msp file for network install* field	Use this option if you want to install from the `.msp` file on a network location. You must specify the complete path to the `.msp` file to use as the source file during distribution to the workstation. You can use a mapped drive or UNC path. If you use a drive mapping, you must ensure that all workstations have the same drive mapped to the source location. For this reason, we recommend that you specify a UNC path. After you create the MSP bundle, you cannot change the `.msp` filename; however, you can change the path to the `.msp` file. If you change the `.msp` filename, the installation fails.
Select .msp File page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.
Select .msp File page > *Command Line Parameters* field	After you select the `.msp` file, the *Command Line Parameters* field is automatically populated, for example */p patch_package /qn* where `/p` designates a patch file, `patch_package` specifies the `.msp` file, and `/qn` specifies an installation with no user interface (silent installation). To install a `.msp` file, you should normally use the `/qn` option. You can, however, specify additional options. For more information, see the MSDN Web site (http://msdn2.microsoft.com/en-us/library/aa372866.aspx).

9 If you are creating Simple Application bundle, follow the wizard prompts until you reach the Summary page, then skip to Step 12 on page 33.

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Enter the Command to Run page > *Command* field	Specify the command to launch the application. You should include the full path to the executable in case the executable is not in the device's search path. This path, whether the application is on the device's local drive or a network resource, must be relative to the device. For example, if the executable file is on the device's local drive, you would specify something like `c:\winnt\notepad.exe`. If the executable file is on a network resource, you would specify something like `j:\apps\notepad.exe` (if all users will have J: mapped to the location) or `\\server1\vol1\apps\notepad.exe`.
Enter the Command to Run page > *Install the Novell File Upload extension* link	If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see Appendix C, "Novell File Upload Extension," on page 89.

Wizard Page and Field	Details
Enter the Command to Run page > *Command Line Parameters* field	Specify any command line parameters that need to be passed to the executable.
	ZENworks Adaptive Agent passes the parameters exactly as they are specified. Therefore, the parameter syntax you use must exactly match the syntax the executable requires. For example, if `word.exe` has a `/f=filepath` parameter that requires paths with spaces to be enclosed in quotation marks, you would specify the following:
	`/f="c:\my docs\sample.doc"`
Enter the Command to Run page > *Working Directory* field	Specify the path to the directory you want the application to use for its working files.

10 If you are creating a Thin Client Application bundle, follow the wizard prompts until you reach the Summary page, then skip to .

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Configure Thin Client Details page > *ICA Session: Published Application Name* field	Type the published application name exactly as it is defined in Citrix*.
Configure Thin Client Details page > *ICA Session: Servers Hosting the Application* field	Add the Citrix servers that host the application. To add a server, specify the server's IP address or hostname, then click *Add*.
	The order in which the servers are listed is the preferred order for launching. You can use the *Move Up* and *Move Down* buttons to change the order if necessary.
Configure Thin Client Details page > *RDP Session: Terminal Server Address* field	Type the terminal server's IP address or hostname.
Configure Thin Client Details page > *RDP Session: Server Port* field	If the terminal server is not using the default port 3389, specify the correct port number.
Configure Thin Client Details page > *RDP Session: Server Domain* field	If the terminal server is part of a Windows NT* domain or an Active Directory* domain, enter the domain name. If the user's name and password in the domain matches the user name and password in Novell eDirectory™, the user is not prompted to log in to the terminal server when launching the application.
Configure Thin Client Details page > *RDP Session: Application Path* field	Specify the path to the application's executable file from the perspective of the terminal server.
Configure Thin Client Details page > *RDP Session: Application Working Directory* field	Specify the path to the directory you want the application to use for its working files.

Wizard Page and Field	Details
Configure Thin Client Details page > *RDP Session: Color Depth* field	Select the number of colors for the RDP client session. You can select *256 Colors*, *High Color (15 bits)*, *High Color (16 bits)*, or *True Color (24 bits)*. The default is *True Color (24 bits)*.
Configure Thin Client Details page > *RDP Session: Screen Size* field	If you want the RDP client session to use the entire desktop area, select *Operate in full screen mode*. Otherwise, select *Use specified screen size* and manually set the width and height (in pixels).

11 If you are creating a Web Application bundle, follow the wizard prompts until you reach the Summary page, then skip to .

Click *Help* for information about each page or refer to the following table:

Wizard Page and Field	Details
Enter URL page > *URL* field	Specify the location (URL) of the Web application. The URL should point to the primary file for the Web application or to a Web page that allows access to the Web application.
	Click the *Test URL* button to test the URL.

12 Review the information on the Summary page, making any changes to the bundle settings by using the *Back* button as necessary.

13 (Conditional) Select the *Define Additional Properties* check box to display the bundle's Summary page after the wizard completes. You can use the various tabs to edit the bundle's assignments, requirements, actions, settings, and content replication settings.

14 Click *Finish* to create the bundle as configured per settings on the Summary page.

When you click Finish, the bundle is created but it does not have users or devices assigned, schedules, and group membership. At some point in the future, you need to configure additional options for the bundle by continuing with .

2.5 Creating Bundles by Using the zman Command Line Utility

ZENworks Configuration Management allows you to create different types of bundles, such as Windows bundle, File bundle, Directive bundle, and Imaging bundle. Each bundle has its own set of data and configuration settings. Because it is complex to pass the data as arguments in the command line, the zman utility takes XML files as an input to create bundles. To use the zman command line utility to create a bundle, you must have a bundle of the same type already created through ZENworks Control Center and export it to XML. For more information on creating bundles by using ZENworks Control Center, see . You can use the exported XML file as a template to create bundles by using zman.

For example, you can export a File bundle already created through ZENworks Control Center into an XML file, then use it to create another File bundle with zman.

A bundle can have file content associated with it. For example, an MSI file to be installed is a file content associated with a Windows MSI Bundle.

Bundles can also have dependencies on other bundles.

Review the following sections to create a bundle by using the zman command line utility:

2.5.1 Creating a Bundle without Content or Dependency on Another Bundle

1 Create a bundle in ZENworks Control Center.

For example, use ZENworks Control Center to create a Web Application bundle called google, which launches the Google Web site (http://www.google.co.in/).

2 Export the bundle to an XML file by using the following command:

```
zman bundle-export-to-file bundle_name bundle_filename.xml
```

For example, export the google bundle to `google.xml` by using the `zman bundle-export-to-file google google.xml` command.

If you want to create a new bundle with new data, continue with Step 3. If you want to create a new bundle with the same data as the google bundle, skip to Step 4.

3 Modify the XML file according to your requirements.

For example, change the value of `<URL>` from `http://www.google.co.in` to `http://www.yahoo.com` in the `Launch URL Action` section of `Launch ActionSet` in the XML file as shown below.

```
<ns2:ActionSets>
    <Id>104e5d74804052eb7ddc4a2f54358d97</Id>
  <Type>Launch</Type>
  <Version>1</Version>
  <Modified>false</Modified>
  <Data>
      <ns1:Launch/>
  </Data>
  <Actions>
      <Id>2ef5c645774759e9868ba2c157301949</Id>
      <Type>Launch URL Action</Type>
      <Data>
          <ns1:LaunchUrlActionData>
              <URL>http://www.yahoo.com</URL>
              <WaitForExit>false</WaitForExit>
          </ns1:LaunchUrlActionData>
      </Data>
      <ContinueOnFailure>false</ContinueOnFailure>
      <Enabled>true</Enabled>
      <Properties />
```

```
        </Actions>
     </ns2:ActionSets>
```

4 Create a new bundle by using the following command:

```
zman bundle-create new_bundle_name bundle_xml_filename.xml
```

For example, to create the yahoo bundle, enter the `zman bundle-create yahoo google.xml` command at the console prompt.

2.5.2 Creating a Bundle with Content and Dependency on Another Bundle

1 Create two bundles in ZENworks Control Center.

For example, use ZENworks Control Cener to create two MSI application bundles called officeXP and officeXPSP1. The officeXP bundle installs Microsoft Office XP through an MSI. The officeXPSP1 bundle installs the Service Pack 1 for Microsoft Office XP. In the officeXP bundle, add an Install Bundle action to install officeXPSP1.

2 Export the bundle, which has the dependency on another bundle, to an XML file by using the following command:

```
zman bundle-export-to-file bundle_name bundle_filename.xml
```

This creates *bundle_filename*.xml and *bundle_filename*_ActionContentInfo.xml files.

For example, export the officeXP bundle to `officeXP.xml` by using the `zman bundle-export-to-file officeXP officeXP.xml` command. The `officeXP.xml` and `officeXP_ActionContentInfo.xml` files are created.

Sample `xml` format templates, `WindowsMSIBundle.xml` and `ActionInfo.xml`, are available at `/opt/novell/zenworks/share/zman/samples/bundles` on a Linux server and in *ZENworks_Installation_directory*:`\Novell\Zenworks\ share\zman\ samples\bundles` on a Windows server. For more information about `ActionContentInfo.xml`, see Section 2.5.3, "Understanding the zman Bundle XML File Format," on page 36.

If you want to create a new bundle with new data, continue with Step 3. If you want to create a new bundle with the same data as the officeXP bundle, skip to Step 4.

3 Modify the `officeXP.xml` and `officeXP_ActionContentInfo.xml` files according to your requirements.

For example, to create a new bundle to install ApplicationX and its support pack, do the following:

   ◆ Change all references of `officeXP.msi` to `ApplicationX.msi` in the `officeXP_ActionContentInfo.xml` file.

   ◆ Create another bundle called as ApplicationX-SP1 that installs the support pack for Application X.

   ◆ Change the path of the dependent OfficeXPSP1 bundle to ApplicationX-SP1 in the `officeXP_ActionContentInfo.xml` to install both ApplicationX and its support pack.

A sample `officeXP_ActionContentInfo.xml` is as follows:

```
<ActionInformation>
```

```
        <ActionSet type="Install">
              <Action name="Install MSI" index="1">
                  <Content>
                        <ContentFilePath includeAllFilesinFolder="false"
    includeAllFilesinSubFolders="false">E:\files\ApplicationX.msi</
    ContentFilePath>
                  </Content>
              </Action>
              <Action name="Install Bundle" index="2">
               <DependentBundlePath>bundlefolder/ApplicationX-SP1</
    DependentBundlePath>
              </Action>
        </ActionSet>
        <ActionSet type="Uninstall">
              <Action name="Undo Install Actions" index="1">
                  <Content>
                        <ContentFilePath includeAllFilesinFolder="false"
    includeAllFilesinSubFolders="false">E:\files\ApplicationX.msi</
    ContentFilePath>
                  </Content>
              </Action>
        </ActionSet>
    </ActionInformation>
```

4 Create a bundle by using the following command:

```
zman bundle-create new_bundle_name bundle_xml_filename.xml --
actioninfo bundle_name_ActionContentInfo.xml
```

For example, use the following command to create a bundle called ApplicationX:

```
zman bundle-create ApplicationX officeXP.xml --actioninfo
officeXP_ActionContentInfo.xml
```

2.5.3 Understanding the zman Bundle XML File Format

The `bundle-export-to-file` command serializes the bundle information, which is stored in the database, into an XML file. Each bundle contains actions that are grouped into action sets such as Install and Launch. An exported bundle XML file contains information for the bundle, such as UID, Name, Path, PrimaryType, SubType, Category, System Requirements, and information on all ActionSets and their actions. The file does not include information about assignment of the bundle to devices or users, and add-on images for the bundle.

A sample XML format template, `WindowsMSIBundle.xml`, is available at `/opt/novell/ zenworks/share/zman/samples/bundles` on a Linux server and in *ZENworks_Installation_directory*`:\Novell\Zenworks\share\zman\ samples\bundles` on a Windows server.

NOTE: If the exported XML file contains extended ASCII characters, you must open it in an editor by using UTF-8 encoding instead of ANSI encoding, because ANSI encoding displays the extended ASCII characters as garbled.

When you create a bundle from the XMLfile, zman uses the information specified in the `<Description>`, `<SubType>`,`<Category>`, `<ActionSets>`, and `<SysReqs>` elements of the file. The values for the Name and Parent Folder are taken from the command line. For the remaining elements, the default value is used.

Follow the guidelines listed below to work with the XML file:

- If you want to create a bundle without file content or dependency on another bundle, you need only the bundle XML file to create a bundle.

- If you want to create a bundle with content or dependency on another bundle, you must provide an additional XML file, which contains the path of the content file or the dependent bundle, as an argument to the `--actioninfo` option of the `bundle-create` command.

    A sample XML format template, `ActionInfo.xml`, is available at `/opt/novell/ zenworks/share/zman/samples/bundles` on a Linux server and in `ZENworks_Installation_directory:\Novell\ Zenworks\share\zman\ samples\bundles` on a Windows server.

- If you want to modify the `<Data>` element of actions in the exported XMLfile, ensure that the new data is correct and that it conforms to the schema. The zman utility does a minimal validation of the data and does not check for the errors in the data. Hence, the bundle might be successfully created, but with invalid data. Such a bundle fails when deployed on a managed device.

- File content or bundle dependenci es are associated with a particular action in `<ActionSet>`. The Action Content Information XML file should contain the path of the file to which the file content is to be associated and the index of the action in the `<ActionSet>`.

    For example, the MSI file to be installed when you create the Windows MSI Bundle is associated to the first Install MSI action in the Install action set of the created Windows MSI Bundle.

- The `<ActionSet>` is specified by the `type` attribute. It should be the same as the Action Set type of the bundle XML file.

- The `<Action>` element has a name attribute, which is optional, for user readability.

- The `index` attribute is mandatory. It specifies the action to which the content or dependency should be associated to. The index value of the first action in `<ActionSet>` is 1.

- Each action can have multiple `<Content>` elements, each containing a `<ContentFilePath>` element. The `<ContentFilePath>` element contains the path of the file content to be associated with the Action. Ensure that the filename is the same as the filename specified in the bundle XML file in `<Data>` for that action.

- Ensure that the order of the `<Content>` elements is in accordance with the order in the bundle XML file. For example, the Windows MSI bundle should have the MSI file in the first `<Content>` element, followed by `<Content>` elements with the path to the MST files in the order specified in `<Data>` for that action.

- For creating Windows MSI bundles, you can include all the files in the folder or subfolders by setting the `includeAllFilesinFolder` and `includeAllFilesinSubFolders` attributes to True. The dependency to another bundle can be specified by giving the bundle path as a value of the `<DependentBundlePath>` element. The path of the bundle specified should be relative to `/Bundles` as shown below.
    ```
    <ActionSet type="Install">
    <Action name="Install MSI" index="1">
    <Content>
    ```

```
<ContentFilePath includeAllFilesinFolder="false"
includeAllFilesinSubFolders="false">E:\files\ApplicationX.msi</
ContentFilePath>
</Content>
<Content>
<ContentFilePath includeAllFilesinFolder="false"
includeAllFilesinSubFolders="false">E:\files\ApplicationX_MST1.mst
</ContentFilePath>
</Content>
</Action>
<Action name="Install Bundle" index="2">
<DependentBundlePath>bundlefolder/ApplicationX-SP1</
DependentBundlePath>
</Action>
</ActionSet>
```

* To get the UID of an object, use the `object-get-GUID` command. You must manually edit the object UIDs in the bundle XML file in the following scenarios:

   * In the Bundle Installed system requirement, the path and the UID of the bundle must be changed in the `<BundleInstalledReq>` element under the `<SysReqs>` element.

   * In the Imaging bundle, the UID of the server containing the `.img` file must be manually changed in the ZENworks Image and Multicast Image Set actions. Also, the UID of the linked application bundle must be manually changed in the Linked Application Bundle and Multicast Image Set actions. Ensure that the linked bundle already has an add-on image that was created manually, because it is not automatically created when the bundle is linked to the image bundle.

Managing Bundles

<div style="text-align: right; font-size: 3em;">3</div>

The Novell® ZENworks® Configuration Management Software Management features let you effectively manage software and content in your ZENworks system.

For information about creating Directive, File, Imaging, and Windows bundles, see Chapter 2, "Creating Bundles," on page 17. For information about creating Imaging bundles, see the *ZENworks 10 Configuration Management Preboot Services and Imaging Reference*.

The following sections contain information to help you manage existing bundles:

- Section 3.1, "Creating Bundles," on page 39
- Section 3.2, "Assigning Existing Bundles to Devices," on page 39
- Section 3.3, "Assigning Existing Bundles to Users," on page 42
- Section 3.4, "Adding a Bundle to a Group," on page 45
- Section 3.5, "Renaming, Copying, or Moving Bundles," on page 46
- Section 3.6, "Copying a Bundle's System Requirements," on page 47
- Section 3.7, "Deleting a Bundle," on page 47
- Section 3.8, "Incrementing a Bundle's Version Number," on page 47
- Section 3.9, "Installing a Bundle," on page 48
- Section 3.10, "Launching a Bundle," on page 49
- Section 3.11, "Copying a Bundle to a Content Server," on page 50
- Section 3.12, "Preventing a Bundle from Being Deployed," on page 51
- Section 3.13, "Enabling a Bundle to Be Deployed," on page 51
- Section 3.14, "Enabling a Bundle to Be Uninstalled," on page 52
- Section 3.15, "Uninstalling a Bundle," on page 52
- Section 3.16, "Modifying Action Set Options," on page 54

3.1 Creating Bundles

For step-by-step instructions on creating Directive, File, and Windows bundles, see Chapter 2, "Creating Bundles," on page 17. For more information about creating Imaging bundles, see the *ZENworks 10 Configuration Management Preboot Services and Imaging Reference*.

3.2 Assigning Existing Bundles to Devices

When you create bundles, the object is created without assigning devices or users to it, or specifying distribution, launch, or availability schedules. Before the bundle can be used on assigned devices, you must complete the steps in this procedure.

You can use ZENworks Control Center or the zman command line utility to assign bundles. The following procedure explains how to assign a bundle using ZENworks Control Center. If you prefer the zman command line utility, see the "Bundle Commands" in "ZENworks Command Line Utilities".

1 In ZENworks Control Center, click the *Bundles* tab, select the desired bundle in the *Bundles* list by clicking the box next to its name, click *Action*, then click *Assign Bundle to Device*.

A bundle must be assigned to devices and users before it can be distributed to them.

You can assign the bundle to individual devices, users, folders, or groups. Assigning a bundle to a folder or group is the preferred method of assigning bundles. This allows for easier management of the bundle assignments and can decrease the possibility of high server utilization caused by assigning the bundle to a large number of items (for example, more than 250).

2 In the Select Objects dialog box, browse to and select the objects to which you want to assign the bundle.

The Select Objects dialog box opens with the `Devices` folder as the root folder. By default, the `Servers` and `Workstations` folders are displayed along with any custom folders that you have created in the `Devices` folder.

Browse for and select the devices or users, groups, and folders to which you want to assign the bundle. To do so:

   2a Click next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, group, or folder you want to select.

   If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

   2b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

   2c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

3 Specify the bundle's shortcut location.

You can use the Shortcut Location assignments to specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle's icon. The possible locations include the following:

Application Window: Places the icon in the Application window. This location is selected by default.

Quick Launch: Places the icon on the Quick Launch area of the Windows taskbar.

Desktop: Places the icon on the device's desktop.

System Tray: Places the icon in the system tray (notification area) of the Windows taskbar.

Start Menu: Places the icon on the *Start* menu on all Windows devices except for Windows Vista. On Windows Vista, it places the icon in *Start > All Programs*.

4 Click *Next* to display the Schedules Page, then select the schedules you want to define:

Distribution Schedule: Defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device or user. If you do not establish a schedule, the bundle is distributed to the device or user when it is first launched.

Launch Schedule: Defines the dates and times when the ZENworks Adaptive Agent automatically launches the bundle. If you do not establish a schedule, the bundle is launched only when the user launches it.

Availability Schedule: Defines the dates and times when the bundle is available to the device or user. The ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. If you do not establish a schedule, the bundle is available at all times.

5 (Conditional) If you selected *Distribution Schedule* in Step 4, click *Next* to display the Bundle Distribution Schedule page.

The distribution schedule defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device. The default schedule (no schedule) causes the bundle to be distributed to the device when it is first launched.

6 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

- Section D.1, "Date Specific," on page 91
- Section D.4, "Recurring," on page 93
- Section D.2, "Event," on page 92

7 Select the following options as desired:

Wake on LAN: If the device is not on at the scheduled time, ZENworks attempts to use Wake on LAN (WoL) technology to power on the device. The device must support Wake on LAN.

Install Immediately After Distribution: Performs any installation actions immediately after the bundle is distributed to the device.

Launch Immediately After Installation: Performs any launch actions immediately after the bundle is installed. This option is available only if the *Install Immediately After Distribution* option is enabled.

8 (Conditional) If you selected *Launch Schedule* in Step 4, click *Next* to display the Bundle Launch Schedule page.

The launch schedule determines the dates and times when ZENworks Adaptive Agent automatically launches the bundle. The default schedule (no schedule) results in the bundle only being launched if the user launches it.

9 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

- Section D.1, "Date Specific," on page 91
- Section D.4, "Recurring," on page 93
- Section D.2, "Event," on page 92

10 (Conditional) If you selected *Availability Schedule* in Step 4, click *Next* to display the Bundle Availability Schedule page.

The availability schedule defines the dates and times when the bundle is available on the managed device. ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. The default schedule (no schedule) makes the bundle available at all times.

The schedule applies regardless of whether or not the bundle is installed. For example, if a user has not yet installed the bundle, it is only available for installation at the times specified by the schedule. If a user has already installed the bundle, it is only available for running during the scheduled times.

11 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

◆ Section D.1, "Date Specific," on page 91

◆ Section D.4, "Recurring," on page 93

12 Click *Next* to display the Finish page, review the information and, if necessary, use the *Back* button to make changes to the information.

13 Click *Finish*.

3.3 Assigning Existing Bundles to Users

When you create bundles, the object is created without assigning devices or users to it, or specifying distribution, launch, or availability schedules. Before the bundle can be used on assigned devices, you must complete the steps in this procedure.

You can use ZENworks Control Center or the zman command line utility to assign bundles. The following procedure explains how to assign a bundle using ZENworks Control Center. If you prefer the zman command line utility, see the "Bundle Commands" in "ZENworks Command Line Utilities".

1 In ZENworks Control Center, click the *Bundles* tab, select the desired bundle in the *Bundles* list by clicking the box next to its name, click *Action*, then click *Assign Bundle to User*.

A bundle must be assigned to devices and users before it can be distributed to them.

You can assign the bundle to individual devices, users, folders, or groups. Assigning a bundle to a folder or group is the preferred method of assigning bundles. This allows for easier

management of the bundle assignments and can decrease the possibility of high server utilization caused by assigning the bundle to a large number of items (for example, more than 250).

2 In the Select Objects dialog box, browse to and select the objects to which you want to assign the bundle.

The Select Objects dialog box opens with the `Users` folder as the root folder. By default, the user sources that have been defined are displayed, as well as the ZENworks User Groups folder.

Browse for and select the users, groups, and folders to which you want to assign the bundle. To do so:

2a Click 🖝 next to a folder to navigate through the folders until you find the user, group, or folder you want to select.

If you are looking for a specific item, such as a User or a User Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

2b Click the underlined link in the *Name* column to select the user, group, or folder and display its name in the *Selected* list box.

2c Click *OK* to add the selected users, folders, and groups to the *Devices* list.

3 Specify the bundle's shortcut location.

You can use the Shortcut Location assignments to specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle's icon. The possible locations include the following:

Application Window: Places the icon in the Application window. This location is selected by default.

Quick Launch: Places the icon on the Quick Launch toolbar area of the Windows taskbar.

Desktop: Places the icon on the device's desktop.

System Tray: Places the icon in the system tray (notification area) of the Windows taskbar.

Start Menu: Places the icon on the *Start* menu.

4 Click *Next* to display the Schedules Page, then select the schedules you want to define:

Distribution Schedule: Defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device or user. If you do not establish a schedule, the bundle is distributed to the device or user when it is first launched.

Launch Schedule: Defines the dates and times when the ZENworks Adaptive Agent automatically launches the bundle. If you do not establish a schedule, the bundle is launched only when the user launches it.

Availability Schedule: Defines the dates and times when the bundle is available to the device or user. The ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. If you do not establish a schedule, the bundle is available at all times.

5 (Conditional) If you selected *Distribution Schedule* in Step 4, click *Next* to display the Bundle Distribution Schedule page.

The distribution schedule defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device. The default schedule (no schedule) causes the bundle to be distributed to the device when it is first launched.

6 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

- Section D.1, "Date Specific," on page 91
- Section D.4, "Recurring," on page 93
- Section D.2, "Event," on page 92

7 Select the following options as desired:

Wake on LAN: If the device is not on at the scheduled time, ZENworks attempts to use Wake on LAN (WoL) technology to power on the device. The device must support Wake on LAN.

Install Immediately After Distribution: Performs any installation actions immediately after the bundle is distributed to the device.

Launch Immediately After Installation: Performs any launch actions immediately after the bundle is installed. This option is available only if the *Install Immediately After Distribution* option is enabled.

8 (Conditional) If you selected *Launch Schedule* in Step 4, click *Next* to display the Bundle Launch Schedule page.

The launch schedule determines the dates and times when ZENworks Adaptive Agent automatically launches the bundle. The default schedule (no schedule) results in the bundle only being launched if the user launches it.

9 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

- Section D.1, "Date Specific," on page 91
- Section D.4, "Recurring," on page 93
- Section D.2, "Event," on page 92

10 (Conditional) If you selected *Availability Schedule* in Step 4, click *Next* to display the Bundle Availability Schedule page.

The availability schedule defines the dates and times when the bundle is available on the managed device. ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. The default schedule (no schedule) makes the bundle available at all times.

The schedule applies regardless of whether or not the bundle is installed. For example, if a user has not yet installed the bundle, it is only available for installation at the times specified by the schedule. If a user has already installed the bundle, it is only available for running during the scheduled times.

11 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

- Section D.1, "Date Specific," on page 91
- Section D.4, "Recurring," on page 93

12 Click *Next* to display the Finish page, review the information and, if necessary, use the *Back* button to make changes to the information.

13 Click *Finish*.

3.4 Adding a Bundle to a Group

You can add the bundle to any bundle groups that already exist or you can create a new bundle group as part of the assignment process. The bundle inherits the group's assignments and schedules, which means that you save time by managing one bundle group rather than each individual bundle.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Action > Add to Group*.
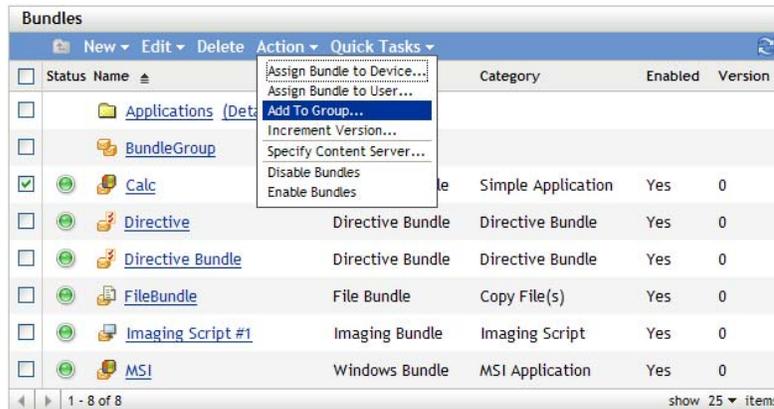
4 Select *Add selected items to an existing group* if the group to which you want to add the objects already exists.

or

Select *Create a new group to contain the selected items* if you need to create a new group for the selected objects.

5 (Conditional) If you chose *Add selected items to an existing group* in Step 4, click *Next* to display the Targets page.

The Targets page lets you select the groups to which you want to add the objects (users, devices, bundles, policies).

  5a Click *Add* to display the Select Groups dialog box.

  5b Browse for and select the groups to which you want to add the objects. To do so:

    5b1 Click 🖝 next to a folder to navigate the folders until you find the group you want to select.

      If you know the name of the group you are looking for, you can also use the *Item name* box to search for the group.

    5b2 Click the underlined link in the *Name* column to select the group and display its name in the Selected list.

    5b3 Repeat Step 5b1 and Step 5b2 to add additional groups to the *Selected* list.

    5b4 When you are finished selecting groups, click *OK*.

6 (Conditional) If you chose *Create a new group to contain the selected items* in Step 4, click *Next* to display the Basic Information page, then fill in the fields:

Name: Provide a name for the group. The group name must be different than the name of any other object (group, folder, device, user, bundle, policy, and so forth) that resides in the same folder and must conform to the ZENworks object naming conventions.

Folder: By default, the group is created in the current folder. If you want to create the group in another folder, browse to and select the folder.

Description: Provide a short description of the group's purpose or contents.

7 Click *Next* to display the Summary page, review the information and, if necessary, use the *Back* button to make changes to the information.

8 Click *Finish* to add the selected objects to the group.

3.5 Renaming, Copying, or Moving Bundles

Use the *Edit* drop-down list on the Bundles page to edit an existing object. To access the *Edit* drop-down list, you must select an object by clicking the check box next to the object's name in the list.

Depending on the type of object you select, you can rename, copy, or move the selected object. For example, if you select a Bundle object, you can rename, copy, and move the bundle. If you select a Bundle Group object, you can rename or move the Bundle Group object, but not copy it. If the option is dimmed, that option is not available for the selected object type.

Some actions cannot be performed on multiple objects. For example, if more than one check box is selected, the *Rename* option is not available from the *Edit* menu.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the box next to the bundle's name, click *Edit*, then click an option:
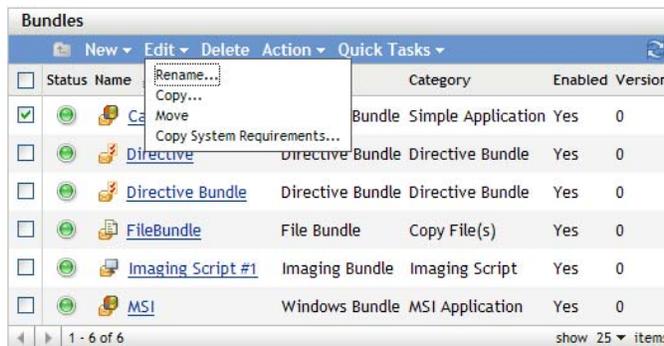
Rename: Click *Rename*, provide a new name for the bundle, then click *OK*.

IMPORTANT: Do not rename Windows MSP bundles.

Copy: Click *Copy*, provide a new name for the copy, then click *OK*.

The copy option is useful to create a new bundle that is similar to an existing bundle. You can copy a bundle and then edit the new bundle's settings.

Move: Click *Move*, select a destination folder for the selected objects, then click *OK*.

If you rename or move a bundle, its assignments are still in place and ZENworks Configuration Management does not redistribute the bundle to devices or users because of the name or location change.

3.6 Copying a Bundle's System Requirements

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle.

3 Click *Edit > Copy System Requirements*.
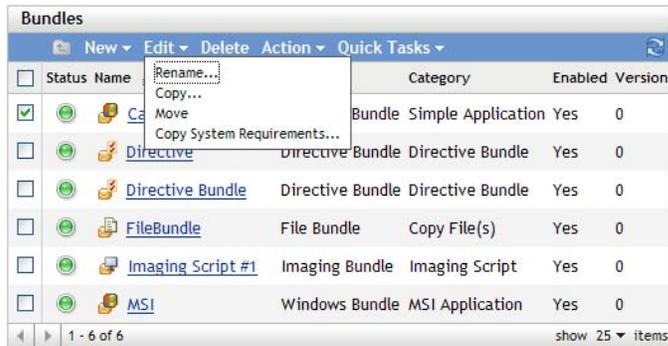
If more than one check box is selected, the *Copy System Requirements* option is not available on the *Edit* menu.

4 Select *Bundles* or *Policies*, then click *Add* to select the bundles or policies to which you want to copy the selected bundle's system requirements.

3.7 Deleting a Bundle

Deleting a bundle removes the bundle content from the ZENworks content servers but does not uninstall it from devices where it has already been installed. To uninstall it from devices, you should use the Uninstall options before deleting the bundle.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Delete*.

3.8 Incrementing a Bundle's Version Number

Incrementing a bundle's version number causes the bundle to be redeployed to managed devices and recopied to content servers.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Action > Increment Version*.
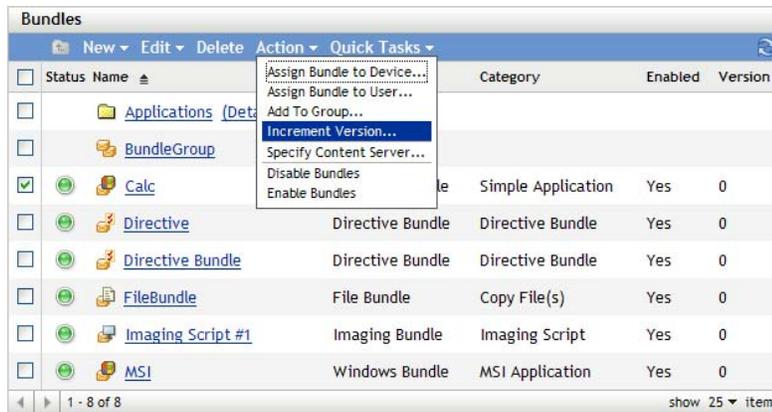
3.9 Installing a Bundle

The *Install Bundle* option in the Bundle Tasks list in the left navigation pane of ZENworks Control Center lets you immediately install a bundle to one or more devices.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 In the *Bundle Tasks* list in the left navigation pane, select *Install Bundle*.

4 In the *Devices* section, click *Add* to select the devices where you want to install the bundle.

5 In the Select Objects dialog box, browse to and select the objects on which you want to install the bundle.

The Select Objects dialog box opens with the `Devices` folder as the root folder. By default, the `Servers` and `Workstations` folders are displayed along with any custom folders that you have created in the `Devices` folder.

Browse for and select the devices, groups, and folders to which you want to assign the bundle. To do so:

5a Click ⬐ next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, user, group, or folder you want to select.

If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

5b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

5c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

6 In the *Shortcut Location* section, select the locations where you want the bundle's icon to display on the devices.

You can use the Shortcut Location assignments to specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle's icon. The possible locations include the following:

Application Window: Places the icon in the Application window. This location is selected by default.

Quick Launch: Places the icon on the Quick Launch area of the Windows taskbar.

Desktop: Places the icon on the device's desktop.

System Tray: Places the icon in the system tray (notification area) of the Windows taskbar.

**Start Menu:** Places the icon on the *Start* menu.

7 Click *OK*.

3.10 Launching a Bundle

The *Launch Bundle* option lets you immediately launch a bundle to one or more devices. If the bundle is not already installed, it is installed and then launched.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Quick Tasks > Launch Bundle*.
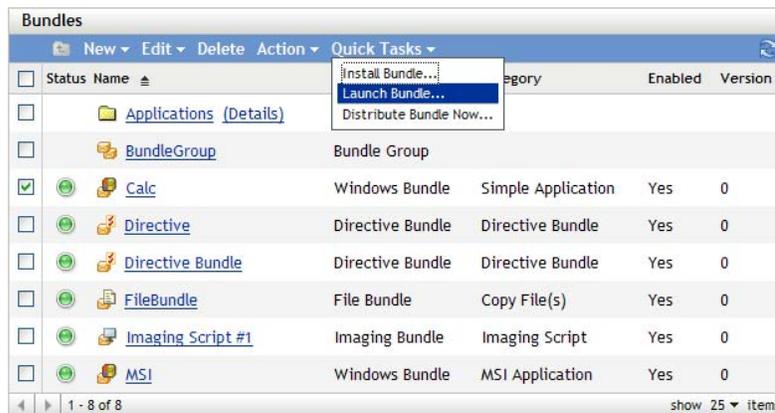
4 In the *Devices* section, click *Add* to select the devices where you want to launch the bundle.

5 In the Select Objects dialog box, browse to and select the objects on which you want to launch the bundle.

The Select Objects dialog box opens with the `Devices` folder as the root folder. By default, the `Servers` and `Workstations` folders are displayed along with any custom folders that you have created in the `Devices` folder.

Browse for and select the devices, groups, and folders to which you want to assign the bundle. To do so:

5a Click 🡒 next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, user, group, or folder you want to select.

If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

5b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

5c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

6 In the *Shortcut Location* section, select the locations where you want the bundle's icon to display on the devices.

You can use the Shortcut Location assignments to specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle's icon. The possible locations include the following:

Application Window: Places the icon in the Application window. This location is selected by default.

Quick Launch: Places the icon on the Quick Launch toolbar of the Windows taskbar.

Desktop: Places the icon on the device's desktop.

System Tray: Places the icon in the system tray (notification area) of the Windows taskbar.

Start Menu: Places the icon on the *Start* menu.

7 Click *OK*.

3.11 Copying a Bundle to a Content Server

By default, a bundle is copied to each content server. If you specify certain content servers as hosts, the bundle is hosted on only those content servers; it is not copied to all content servers.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Action > Specify Content Server*.

4 On the Content Servers/Distribution Points Where Content Will Be Specifically Included page, select the content servers.

This page lets you identify the content servers (ZENworks Servers and Distribution Points) that you want to host the previously selected content (bundles and policies). The content is hosted only on the content servers you select; it is excluded from all other content servers.

The relationships between content and content servers that you create using this wizard override any existing relationships. For example, if Bundle A is currently hosted on Server 1 and Server 2 and you use this wizard to include it on Server 1 only, Bundle A is no longer available on Server 2.

   4a In the *Available* list, select the desired ZENworks Servers and Distribution Points.

        You can use Shift+click and Ctrl+click to select multiple bundles or policies.

        You cannot include content on a Distribution Point without including it on the Distribution Point's parent ZENworks Server. You must select both the Distribution Point and its parent.

   4b Click the [>   ] button to move the selected content servers to the *Selected* list.

5 Click *Next* to display the *Finish* page, then review the information and, if necessary, use the *Back* button to make changes to the information.

6 Click *Finish* to create the relationships between the content and the content servers. Depending on the relationships created, the content is replicated to or removed from content servers during the next scheduled replication.

3.12 Preventing a Bundle from Being Deployed

A disabled bundle is not deployed to new managed devices or content servers. It remains on any devices and content servers to which it has already been deployed.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Action > Disable Bundles*.
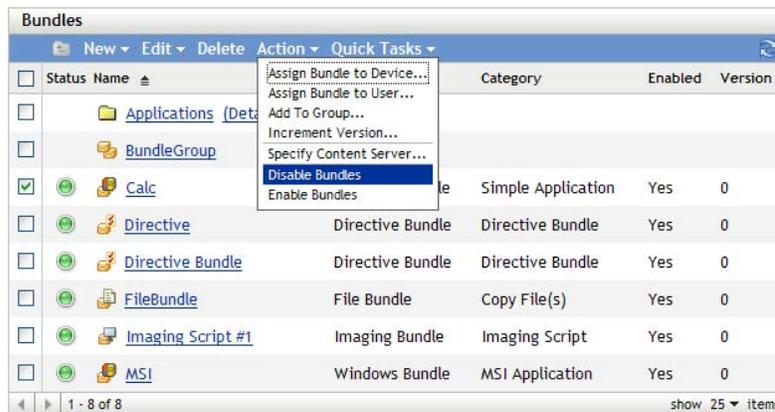

3.13 Enabling a Bundle to Be Deployed

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click *Action > Enable Bundles*.
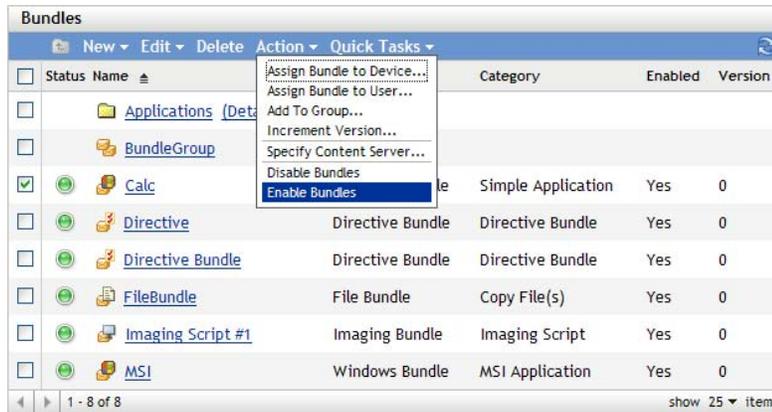
3.14 Enabling a Bundle to Be Uninstalled

When you create a bundle, the Undo Install action is enabled by default; however, the Uninstall Action Set is not enabled. Therefore, in order for any actions in the action set to run (including the Undo Install action), you must enable the action set.

1 In the ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, click the bundle's underlined link in the *Name* column to display its Summary page.

3 Click the *Actions* tab, then click the *Uninstall* tab.

4 Click *Action Set Options* to display the Action Set Option - Uninstall dialog box.

5 Select the *Enable Uninstall* check box, then select one of the following options:

Allow User to Perform Uninstall: Select this option to enable users to remove the application from their workstations. If this option is not enabled, only you or other administrators can remove applications.

Uninstall Application if Not Used Within _ Days: Select this option to automatically remove the application if the user does not run it within the specified number of days (the default is 30).

6 Click *OK*, then click *Apply*.

3.15 Uninstalling a Bundle

The Uninstall Bundle quick task lets you uninstall a bundle from one or more devices. Uninstalling a bundle does not, however, remove its assignments nor prevent the bundle from being reinstalled.

NOTE: To use the Uninstall Bundle quick task, you must enable the bundle's uninstall options (which are disabled by default), increment the bundle's version, and refresh the device. For more

information, see Section 3.14, "Enabling a Bundle to Be Uninstalled," on page 52 and Section 3.8, "Incrementing a Bundle's Version Number," on page 47.

To uninstall a bundle:

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle (or bundles).

3 Click Quick Tasks > Uninstall Bundle.

4 In the *Bundles* section, click 🔍 to browse to and select the desired bundle (if necessary).

5 In the *Devices* section, click *Add* to select the devices where you want to uninstall the bundle.

6 In the Select Objects dialog box, browse to and select the objects on which you want to uninstall the bundle.

The Select Objects dialog box opens with the `Devices` folder as the root folder. By default, the `Servers` and `Workstations` folders are displayed along with any custom folders that you have created in the `Devices` folder.

Browse for and select the devices, groups, and folders to which you want to assign the bundle. To do so:

6a Click 👉 next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, user, group, or folder you want to select.

If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

6b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

6c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

7 Click *OK*, then click *Apply*.

If ZENworks Control Center shows that the uninstall fails, examine the device's log file for more information.

3.15.1 Bundle

Click 🔍 to browse to and select the desired bundle (if necessary).

3.15.2 Devices

Select the devices from which you want to remove the bundle. You can browse to and select a device that the bundle is not currently assigned to because the bundle may have been assigned to and installed on that device previously.

1 In the *Devices* section, click *Add*.

Because you are removing the bundle from devices, the Add Assignments dialog box opens with the `Devices` folder as the root folder. By default, the `Servers` and `Workstations` folders are displayed along with any custom folders that you have created in the `Devices` folder.

2 Browse for and select the devices, device groups, and device folders from which you want to remove the bundle. To do so:

    2a Click 👆 next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, group, or folder you want to select.

        If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. Also, if you know the name of the item you are looking for, you can also use the *Item name* box to search for the item.

    2b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

    2c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

3.16 Modifying Action Set Options

When you create a bundle, all actions are enabled by default, meaning that after you add them to a action set, they run according to the action set's options. However, not all action sets are enabled by default. The Install, Launch, and Terminate action sets are enabled, meaning that after you add an action, it runs on assigned devices according to its action set's options. The Uninstall action set is not enabled by default.

The following sections contain information about modifying action set options and enabling the Uninstall action set:

3.16.1 Install Action Set Options

The Action Set Options - Install dialog box lets you specify the how often the bundle's install actions are performed on managed devices and to specify if users can postpone the bundle's installation.

1 In the ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, click a bundle's underlined link in the *Name* column to display its Summary page.

3 Click the *Actions* tab, then click the *Install* tab.

4 Click *Action Set Options* to display the Action Set Option - Install dialog box.
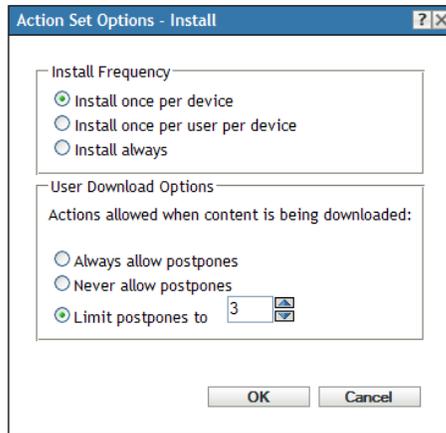
5 Specify how often you want the bundle's install actions performed:

Install once per device: Performs the bundle's install actions once on each managed device.

Install once per user per device: Performs the bundle's install actions once for each user on each managed device.

Install always: Performs the bundle's install action each time a user logs in to the managed device.

6 Specify whether to allow users to postpone performing the bundle's install actions and specify the number of postpones to allow.

Always allow postpones: Allow the user to postpone the installation an unlimited number of times.

Never allow postpones: Do not allow the user to postpone the installation.

Limit postpones to: Specify the number of times that the user can postpone the installation.

7 Click *OK*, then click *Apply*.

3.16.2 Launch Action Set Options

The Action Set Options - Launch dialog box lets you configure how often the bundle's launch actions are performed on managed devices. By default, the launch actions are performed according to the bundle's schedule or when the user launches the bundle using its shortcut (from the Application Window, desktop, and so forth).

1 In the ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, click a bundle's underlined link in the *Name* column to display its Summary page.

3 Click the *Actions* tab, then click the *Launch* tab.

4 Click *Action Set Options* to display the Action Set Option - Launch dialog box.

5 Fill in the fields:

Run Once: Select this option to configure the bundle's launch actions, then select one of the following options. If you do not select this option (the default), the launch actions are performed each time a user launches the application contained in the bundle.

- ◆ **For each device:** Launches the bundle's actions once on each managed device.

- ◆ **For the first user that logs in:** Launches the bundle's actions once on each managed device when the first user logs in to that device. If subsequent users log in to the device, the action set is not launched. If you select this option, the bundle's icon is removed from the device's Application Window, desktop, and so forth.

- ◆ **For every user that logs in:** Launches the bundle's actions for every user that logs in to the device.

6 Click *OK*, then click *Apply*.

3.16.3 Uninstall Action Set Options

The Action Set Options - Uninstall dialog box lets you enable the application to be uninstalled, allow the user to perform the uninstall, and specify that the application is uninstalled if it is not used with in a specified number of days.

When you create a bundle, the Undo Install action is enabled by default; however, the Uninstall Action Set is not enabled. Therefore, in order for any actions in the action set to run (including the Undo Install action), you must enable the action set.

1 In the ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, click the bundle's underlined link in the *Name* column to display its Summary page.

3 Click the *Actions* tab, then click the *Uninstall* tab.

4 Click *Action Set Options* to display the Action Set Option - Uninstall dialog box.

5 Select the *Enable Uninstall* check box, then select one of the following options:

Allow User to Perform Uninstall: Select this option to enable users to remove the application from their workstations. If this option is not enabled, only you or other administrators can remove applications.

Uninstall Application if Not Used Within _ Days: Select this option to automatically remove the application if the user does not run it within the specified number of days (the default is 30).

6 Click *OK*, then click *Apply*.

3.16.4 Terminate Action Set Options

The Action Set Options - Terminate dialog box lets you specify that the bundle's actions can be terminated. This setting is used if a bundle has an availability schedule. For example, if a bundle can be installed only between 1 p.m. and 5 p.m. and the bundle is in the process of being installed at 5 p.m., the installation process terminates.

1 In the ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, click the bundle's underlined link in the *Name* column to display its Summary page.

3 Click the *Actions* tab, then click the *Terminate* tab.

4 Click *Action Set Options* to display the Action Set Option - Terminate dialog box.
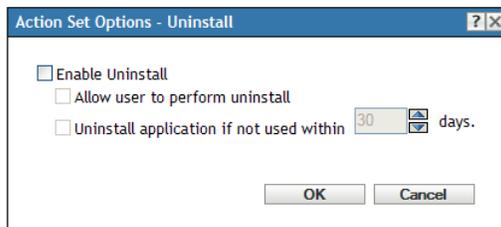
5 Select or deselect the *Enable Terminate* check box.

6 Click *OK*, then click *Apply*.

Managing Bundle Groups

<div align="right">

4

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A bundle group lets you group bundles to ease administration and to provide easier assigning and scheduling of the bundles in the bundle group.

You can use ZENworks® Control Center or the zman command line utility to create bundle groups. This section explains how to perform this task using the ZENworks Control Center. If you prefer the zman command line utility, see "Bundle Commands" in "ZENworks Command Line Utilities".

The following sections contain more information:

- Section 4.1, "Creating Bundle Groups," on page 59
- Section 4.2, "Renaming or Moving Bundle Groups," on page 60
- Section 4.3, "Copying a Bundle Group's System Requirements," on page 61
- Section 4.4, "Deleting a Bundle Group," on page 61
- Section 4.5, "Assigning a Bundle Group to Devices," on page 61
- Section 4.6, "Assigning a Bundle Group to Users," on page 63
- Section 4.7, "Adding a Bundle to a Group," on page 66
- Section 4.8, "Copying a Bundle Group to a Content Server," on page 66

4.1 Creating Bundle Groups

1 In ZENworks Control Center, click the *Bundles* tab.

2 Click *New > Bundle Group*.
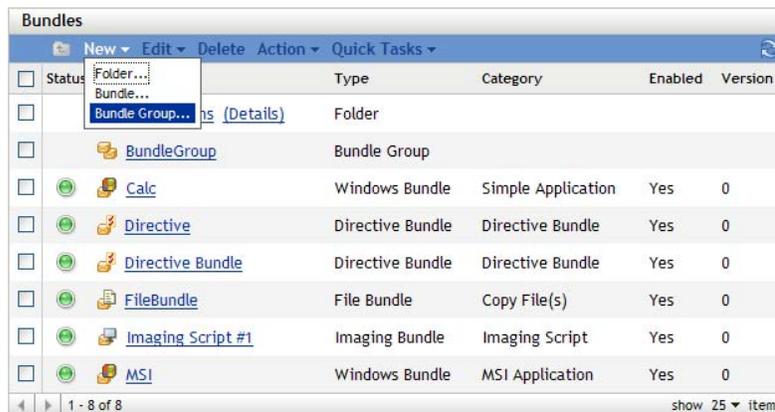
3 Fill in the fields:

Group Name: Provide a name for the bundle group. The name must be different than the name of any other item (bundle, group, folder, and so forth) that resides in the same folder. The name you provide displays in ZENworks Control Center.

For more information, see Appendix A, "Naming Conventions in ZENworks Control Center," on page 79.

Folder: Type the name or browse to and select the ZENworks Control Center folder where you want the bundle to reside. The default is `/bundles`, but you can create additional folders to organize your bundles.

If you want to create the group in another folder, browse to and select the folder. By default, the group is created in the current folder.

Description: Provide a short description of the bundle group's contents. This description displays in ZENworks Control Center.

4 Click *Next* to display the Add Group Members page, then specify bundles to be members for the group.

You can add any number of bundles to the group. You cannot add other bundle groups to the group.

  4a Click *Add* to display the Select Members dialog box.

    Because you are adding bundles to the group, the Select Members dialog box opens with the `Bundles` folder displayed.

  4b Browse for and select the bundles you want to add to the group. To do so:

    4b1 Click 📐 next to a folder to navigate the folders until you find the bundle you want to select.

      If you know the name of the bundle you are looking for, you can also use the *Item name* box to search for the bundle.

    4b2 Click the underlined link in the *Name* column to select the bundle and display its name in the *Selected* list.

    4b3 (Optional) Repeat Step 4a and Step 4b to add additional bundles to the *Selected* list.

    4b4 Click *OK* to add the selected bundles to the group.

5 Click *Next* to display the Summary page, review the information and, if necessary, use the *Back* button to make changes to the information.

6 (Optional) Select the *Define Additional Properties* option to display the group's properties page after the group is created. You can then configure additional bundle properties.

7 Click *Finish* to create the group.

Before the bundle group's contents are distributed to devices or users, you must continue with Section 4.5, "Assigning a Bundle Group to Devices," on page 61 or Section 4.6, "Assigning a Bundle Group to Users," on page 63.

4.2 Renaming or Moving Bundle Groups

Use the *Edit* drop-down list on the Bundles page to edit an existing object. To access the *Edit* drop-down list, you must select an object by clicking the check box next to the object's name in the list.

Depending on the type of object you select, you can rename, copy, or move the selected object. For example, if you select a Bundle object, you can rename, copy, and move the bundle. If you select a Bundle Group object, you can rename or move the Bundle Group object, but not copy it. If the option is dimmed, that option is not available for the selected object type.

Some actions cannot be performed on multiple objects. For example, if more than one check box is selected, the *Rename* option is not available from the *Edit* menu.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the box next to the bundle group's name, click *Edit*, then click an option:

Rename: Click *Rename*, provide a new name for the folder, then click *OK*.

Move: Click *Move*, select a destination folder for the selected objects, then click *OK*.

4.3 Copying a Bundle Group's System Requirements

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle group.

3 Click *Edit > Copy System Requirements*.

If more than one check box is selected, the *Copy System Requirements* option is not available on the *Edit* menu.

4 Select *Bundles* or *Policies*, then click *Add* to select the bundles or policies to which you want to copy the selected bundle group's system requirements.

4.4 Deleting a Bundle Group

Deleting a bundle group does not delete its bundles. It also does not uninstall the bundles from devices where they have already been installed. To uninstall the bundles from devices, you should use the *Uninstall* option for each bundle before deleting the bundle group.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle group (or bundle groups).

3 Click *Delete*.

4.5 Assigning a Bundle Group to Devices

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle group (or bundle groups).

3 Click *Action > Assign Bundle to Device*.
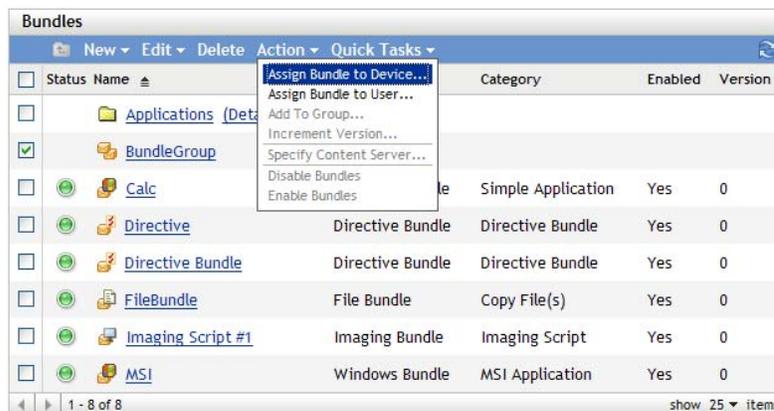
4 Browse for and select the devices, device groups, and device folders to which you want to assign the group. To do so:

   4a Click ☞ next to a folder (for example, the `Workstations` folder or `Servers` folder) to navigate through the folders until you find the device, group, or folder you want to select.

       If you are looking for a specific item, such as a Workstation or a Workstation Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can use the *Item name* box to search for the item.

   4b Click the underlined link in the *Name* column to select the device, group, or folder and display its name in the *Selected* list box.

   4c Click *OK* to add the selected devices, folders, and groups to the *Devices* list.

5 Specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle group's icons. The possible locations are:

Application Window: Places the icons in the Application window.

Desktop: Places the icons on the device's desktop.

Quick Launch: Places the icons on the Quick Launch area of the Windows taskbar.

Start Menu: Places the icons on the *Start* menu.

System Tray: Places the icons in the system tray (notification area) of the Windows taskbar.

6 Click *Next* to display the Schedules Page, then select the schedules you want to define:

   ◆ **Distribution Schedule:** Defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device or user. If you do not establish a schedule, the bundle is distributed to the device or user when it is first launched.

   ◆ **Launch Schedule:** Defines the dates and times when the ZENworks Adaptive Agent automatically launches the bundle. If you do not establish a schedule, the bundle is launched only when the user launches it.

   ◆ **Availability Schedule:** Defines the dates and times when the bundle is available to the device or user. The ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. If you do not establish a schedule, the bundle is available at all times.

7 (Conditional) If you selected *Distribution Schedule* in Step 6, click *Next* to display the Bundle Distribution Schedule page.

The distribution schedule defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device. The default schedule (no schedule) causes the bundle to be distributed to the device when it is first launched.

8 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

   ◆ Section D.3, "Now," on page 92

   ◆ Section D.1, "Date Specific," on page 91

   ◆ Section D.4, "Recurring," on page 93

   ◆ Section D.2, "Event," on page 92

9 Select the following options as desired:

Wake on LAN: If the device is not on at the scheduled time, ZENworks attempts to use Wake on LAN (WoL) technology to power on the device. The device must support Wake on LAN.

Install Immediately After Distribution: Performs any installation actions immediately after the bundle is distributed to the device.

Launch Immediately After Installation: Performs any launch actions immediately after the bundle is installed. This option is available only if the *Install Immediately After Distribution* option is enabled.

10 (Conditional) If you selected *Launch Schedule* in Step 6, click *Next* to display the Bundle Launch Schedule page.

The launch schedule determines the dates and times when ZENworks Adaptive Agent automatically launches the bundle. The default schedule (no schedule) results in the bundle only being launched if the user launches it.

11 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

  ◆ Section D.1, "Date Specific," on page 91
  ◆ Section D.4, "Recurring," on page 93
  ◆ Section D.2, "Event," on page 92

12 (Conditional) If you selected *Availability Schedule* in Step 6, click *Next* to display the Bundle Availability Schedule page.

The availability schedule defines the dates and times when the bundle is available on the managed device. ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. The default schedule (no schedule) makes the bundle available at all times.

The schedule applies regardless of whether or not the bundle is installed. For example, if a user has not yet installed the bundle, it is only available for installation at the times specified by the schedule. If a user has already installed the bundle, it is only available for running during the scheduled times.

13 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or click the following links:

  ◆ Section D.1, "Date Specific," on page 91
  ◆ Section D.4, "Recurring," on page 93

14 Click *Next* to display the Finish page, review the information and, if necessary, use the *Back* button to make changes to the information.

15 Click *Finish*.

4.6 Assigning a Bundle Group to Users

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle group (or bundle groups).

3 Click *Action > Assign Bundle to User*.
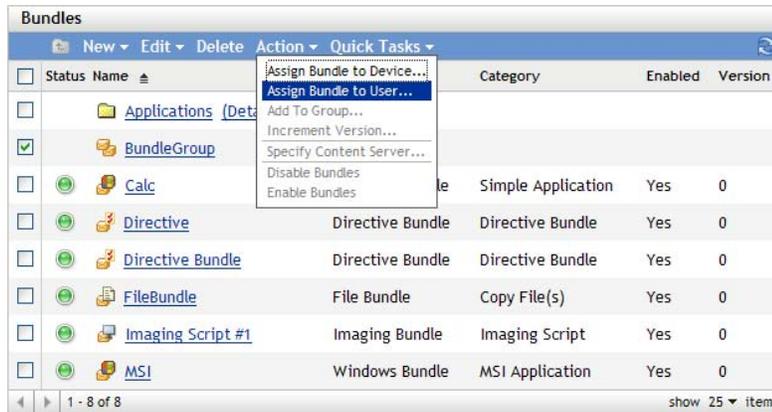
4 Browse for and select the user, user groups, and user folders to which you want to assign the group. To do so:

   4a Click 🖝 next to a folder to navigate through the folders until you find the user, group, or folder you want to select.

      If you are looking for a specific item, such as a User or a User Group, you can use the *Items of type* list to limit the types of items that are displayed. If you know the name of the item you are looking for, you can use the *Item name* box to search for the item.

   4b Click the underlined link in the *Name* column to select the user, group, or folder and display its name in the *Selected* list box.

   4c Click *OK* to add the selected devices, folders, and groups to the *Users* list.

5 Specify the locations on the managed device where ZENworks Adaptive Agent displays the bundle group's icons. The possible locations are:

Application Window: Places the icons in the Application window.

Desktop: Places the icons on the device's desktop.

Quick Launch: Places the icons on the Quick Launch area of the Windows taskbar.

Start Menu: Places the icons on the *Start* menu.

System Tray: Places the icons in the system tray (notification area) of the Windows taskbar.

6 Click *Next* to display the Schedules Page, then select the schedules you want to define:

   ◆ **Distribution Schedule:** Defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device or user. If you do not establish a schedule, the bundle is distributed to the device or user when it is first launched.

   ◆ **Launch Schedule:** Defines the dates and times when the ZENworks Adaptive Agent automatically launches the bundle. If you do not establish a schedule, the bundle is launched only when the user does so.

   ◆ **Availability Schedule:** Defines the dates and times when the bundle is available to the device or user. The ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. If you do not establish a schedule, the bundle is available at all times.

7 (Conditional) If you selected *Distribution Schedule* in Step 6, click *Next* to display the Bundle Distribution Schedule page.

The distribution schedule defines the dates and times when the bundle is distributed from the ZENworks Server to the managed device. The default schedule (no schedule) causes the bundle to be distributed to the device when it is first launched.

8 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

   ◆ Section D.3, "Now," on page 92

   ◆ Section D.1, "Date Specific," on page 91

   ◆ Section D.4, "Recurring," on page 93

   ◆ Section D.2, "Event," on page 92

9 Select the following options as desired:

Wake on LAN: If the device is not on at the scheduled time, ZENworks attempts to use Wake on LAN (WoL) technology to power on the device. The device must support Wake on LAN.

Install Immediately After Distribution: Performs any installation actions immediately after the bundle is distributed to the device.

Launch Immediately After Installation: Performs any launch actions immediately after the bundle is installed. This option is available only if the *Install Immediately After Distribution* option is enabled.

10 (Conditional) If you selected *Launch Schedule* in Step 6, click *Next* to display the Bundle Launch Schedule page.

The launch schedule determines the dates and times when ZENworks Adaptive Agent automatically launches the bundle. The default schedule (no schedule) results in the bundle only being launched if the user launches.

11 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or see the following sections:

   ◆ Section D.1, "Date Specific," on page 91

   ◆ Section D.4, "Recurring," on page 93

   ◆ Section D.2, "Event," on page 92

12 (Conditional) If you selected *Availability Schedule* in Step 6, click *Next* to display the Bundle Availability Schedule page.

The availability schedule defines the dates and times when the bundle is available on the managed device. ZENworks Adaptive Agent displays the bundle icon only during the times defined by the schedule. The default schedule (no schedule) makes the bundle available at all times.

The schedule applies regardless of whether or not the bundle is installed. For example, if a user has not yet installed the bundle, it is only available for installation at the times specified by the schedule. If a user has already installed the bundle, it is only available for running during the scheduled times.

13 In the *Schedule Type* field, select one of the following schedules, then fill in the fields. For detailed information, click the *Help* button on the wizard page or click the following links:

   ◆ Section D.1, "Date Specific," on page 91

   ◆ Section D.4, "Recurring," on page 93

14 Click *Next* to display the Finish page, review the information and, if necessary, use the *Back* button to make changes to the information.

15 Click *Finish*.

4.7 Adding a Bundle to a Group

For more information, see Section 3.4, "Adding a Bundle to a Group," on page 45

4.8 Copying a Bundle Group to a Content Server

By default, a bundle is copied to each content server. If you specify certain content servers as hosts, the bundle is hosted on only those content servers; it is not copied to all content servers.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the bundle group (or bundle groups).

3 Click *Action > Specify Content Server*.

4 On the Content Servers/Distribution Points Where Content Will Be Specifically Included page, select the content servers.

This page lets you identify the content servers (ZENworks Servers and Distribution Points) that you want to host the previously selected content (bundles and policies). The content is hosted only on the content servers you select; it is excluded from all other content servers.

The relationships between content and content servers that you create using this wizard override any existing relationships. For example, if Bundle A is currently hosted on Server 1 and Server 2 and you use this wizard to include it on Server 1 only, Bundle A is no longer available on Server 2.

  4a In the *Available* list, select the desired ZENworks Servers and Distribution Points.

     You can use Shift+click and Ctrl+click to select multiple bundles or policies.

     You cannot include content on a Distribution Point without including it on the Distribution Point's parent ZENworks Server. You must select both the Distribution Point and its parent.

  4b Click the [>   ] button to move the selected content servers to the *Selected* list.

5 Click *Next* to display the *Finish* page, then review the information and, if necessary, use the *Back* button to make changes to the information.

6 Click *Finish* to create the relationships between the content and the content servers. Depending on the relationships created, the content is replicated to or removed from content servers during the next scheduled replication.

Managing Folders

<div style="text-align: right; font-size: 3em;">5</div>

A folder is an organizational object. You can use folders to structure your bundles and bundle groups into a manageable hierarchy for your ZENworks® system. For example, you might want a folder for each type of bundle (Directive Bundles folder, Windows Bundles folder, File Bundles folder, and so forth), or, if applications are department-specific, you might want a folder for each department (Accounting Department folder, Payroll Department folder, and so forth).

The following sections contain additional information:

5.1 Creating Folders

1 In ZENworks Control Center, click the *Bundles* tab.

2 Click *New > Folder*.
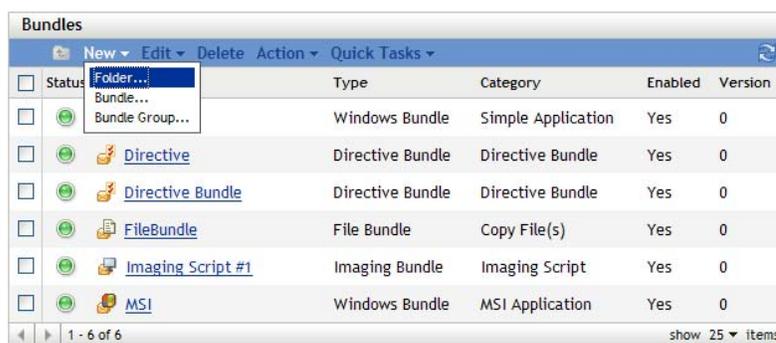
3 Provide a unique name for your folder. This is a required field.

When you name an object in ZENworks Control Center (folders, bundles, bundle groups, catalogs, and so forth), ensure that the name adheres to the naming conventions; not all characters are supported.

4 Type the name or browse to and select the folder that contains this folder in the ZENworks Control Center interface. This is a required field.

5 Provide a short description of the folder's contents.

6 Click *OK*.

5.2 Renaming or Moving Folders

Use the *Edit* drop-down list on the Bundles page to edit an existing object. To access the *Edit* drop-down list, you must select an object by clicking the check box next to the object's name in the list.

Depending on the type of object you select, you can rename, copy, or move the selected object. For example, if you select a Bundle object, you can rename, copy, and move the bundle. If you select a Folder object, you can rename or move the Folder object, but not copy it. If the option is dimmed, that option is not available for the selected object type.

Some actions cannot be performed on multiple objects. For example, if more than one check box is selected, the *Rename* option is not available from the *Edit* menu.

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the box next to the folder's name, then click *Edit*.
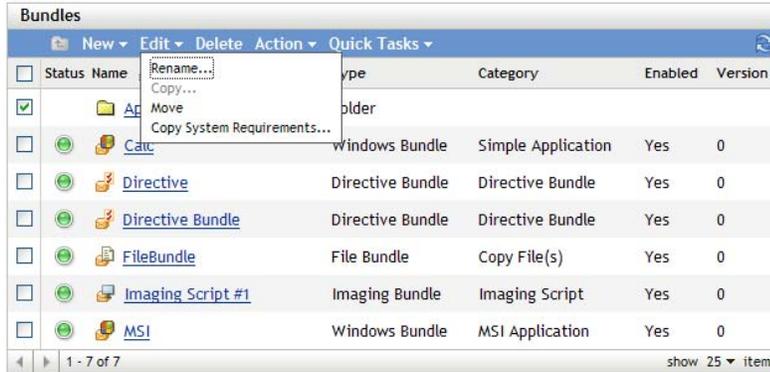
3 Select an option:

- ◆ **Rename:** Click *Rename*, provide a new name for the folder, then click *OK*.
- ◆ **Move:** Click *Move*, choose a destination folder for the selected objects, then click *OK*.

5.3 Copying a Folder's System Requirements

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the folder.

3 Click *Edit > Copy System Requirements*.

If more than one check box is selected, the *Copy System Requirements* option is not available on the *Edit* menu.
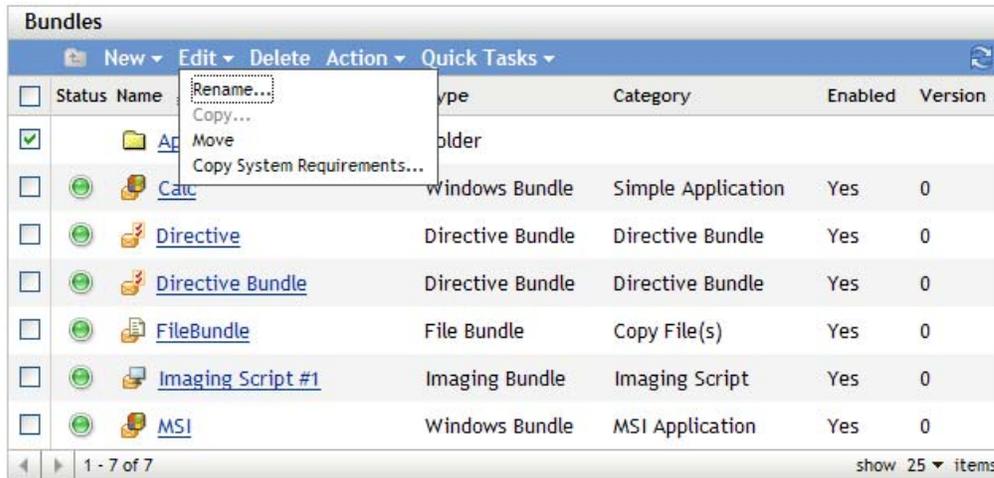
4 Select *Bundles* or *Policies*, then click *Add* to select the bundles or policies to which you want to copy the selected bundle's system requirements.

5.4 Deleting a Folder

Deleting a folder also deletes all of its contents (bundles, bundle groups, subfolders).

1 In ZENworks Control Center, click the *Bundles* tab.

2 In the *Bundles* list, select the check box in front of the folder (or folders).

3 Click *Delete*.

Managing Bundles by using the ZENworks Adaptive Agent

6

The ZENworks® Adaptive Agent is part of the Novell® ZENworks Configuration Management software that lets your administrator manage devices over the network.

NOTE: This section contains information from the Adaptive Agent online Help system and is written from the perspective of the end-user.

The ZENworks Adaptive Agent, commonly referred to as the Adaptive Agent, provides services that help your administrator do the following without visiting devices:

- Deliver software, patches, and other files to your device
- Manage policies that determine the behavior of your device.
- Take inventory of your device's hardware and software.
- Access your device from a remote location to troubleshoot and fix problems with hardware and software.

Software applications and other files are distributed to your device as bundles. A bundle contains all of the content (files, etc.) and instructions (registry modifications, shortcut information, etc.) required to install the software on the device.

The following information discusses how to manage bundles by using the ZENworks Adaptive Agent:

6.1 Bundles vs. Applications

Bundles are different than standard applications, such as Windows Notepad, that already reside on your device. When you double-click a bundle to launch it, the ZENworks Adaptive Agent might first complete a variety of distribution tasks before the application is launched, including installing the application files, running scripts, and changing the device's registry file, specific INI files, or environment variables. These tasks are all configured by your administrator to ensure that the application runs correctly on your device.

In some instances, a bundle's icon appears dimmed or grayed out. This indicates that your device does not meet the requirements that the administrator defined for the application, or the bundle is not scheduled to be available to you at that time. The Adaptive Agent does not distribute the application to your device until the requirements are met or the schedule is appropriate.

6.2 User-Assigned vs. Device-Assigned Bundles

The bundles that you see on your device might be assigned to you or they might be assigned to the device. Bundles assigned to you are referred to as user-assigned bundles, and bundles assigned to your device are referred to as device-assigned bundles.

The ZENworks Adaptive Agent displays your user-assigned bundles only when you are logged in to your user directory (Microsoft Active Directory or Novell® eDirectory™). If you are not logged in, you can log in through the ZENworks Configuration Management login screen. To do so, right-click the ⓩ icon in the notification area, then click Login.

The Adaptive Agent always displays the device-assigned bundles regardless of whether or not you are logged in. Device-assigned bundles can be launched by anyone who uses your device.

6.3 Accessing Bundles

The ZENworks Adaptive Agent provides three ways for you to access the bundles that are assigned to you:

- Section 6.3.1, "ZENworks Window," on page 72
- Section 6.3.2, "ZENworks Explorer," on page 73
- Section 6.3.3, "ZENworks Icon," on page 74

6.3.1 ZENworks Window

The ZENworks Window is a standalone window that you can launch from the Start menu (*Start menu > Programs > Novell ZENworks > ZENworks Window*).
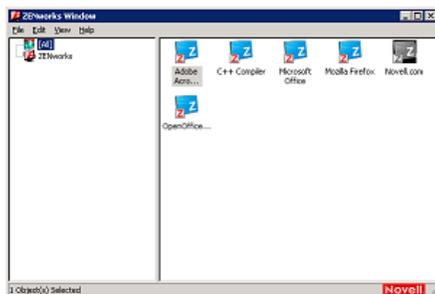
The ZENworks Window left pane displays the following:

- **[All] folder:** Contains all bundles that have been distributed to you, regardless of the folder in which they are located.
- **ZENworks folder:** Contains all bundles that have not been assigned to a different folder. The ZENworks folder is the default folder for bundles; however, your administrator can create additional folders to organize bundles, and can even rename the ZENworks folder.

◆ **Personal folder:** Provides a location for you to create personal folders for organizing applications. This is an administrator-controlled feature. By default, it is disabled, which means the folder does not appear.

When you select a folder in the left pane, the right pane displays the bundles that are contained within the folder. You can:

◆ Install a bundle or launch an application for an already installed bundle.

◆ View the properties of a bundle. The properties include a description of the bundle, information about people to contact for help with the bundle, the times when the bundle is available for use, and the system requirements established for the bundle.

◆ Repair an installed application.

◆ Uninstall an application. This is an administrator-controlled feature that might not be enabled.

6.3.2 ZENworks Explorer

ZENworks Explorer is an extension to Windows Explorer that enables bundles to be displayed in Windows Explorer, on the desktop, on the Start menu, on the Quick Launch toolbar, and in the notification area.

Figure 6-1 *Bundles Displayed in Windows Explorer*
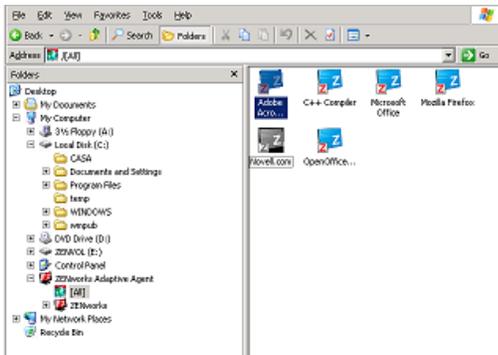
Figure 6-2 *Bundles Displayed on the Desktop*

You can perform the same tasks on the bundles in the ZENworks Explorer as you can in the ZENworks Window.

NOTE: Windows does not allow certain characters in folder paths (\ / : * ? "< > |). If you use any of these characters as part of the name of the ZENworks Explorer folder path, each character

displays as an underscore (_) in the Start menu. The characters display correctly in the ZENworks Window.

6.3.3 ZENworks Icon

The ZENworks Icon ![Z] is located in the Windows notification area. You can double-click the icon to display the ZENworks Adaptive Agent properties. Located in the left navigation pane, the Bundles link lets you view the bundles that are assigned to you and to your device.

Figure 6-3   *ZENworks Adaptive Agent*
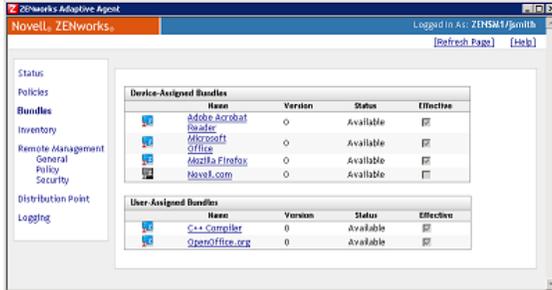
The bundle list includes the following information:

- **Name:** Displays the name of the bundle. Click the name to display the properties for the bundle, including such information as the version, folder and icon locations, and help contacts.

- **Status:** Displays the installation status for the bundle.

- **Effective:** Displays whether or not the bundle can be used on the device. If the *Effective* box is selected, the bundle meets all system requirements and schedule constraints to be used. You can click the bundle icon ![icon] to launch the bundle.

  If the box is not selected, it cannot be used; to find out why, click the bundle name to display the system requirements and schedule properties.

6.4 Understanding Bundle Icons

A bundle icon changes to reflect the current status of the bundle. The following table shows the bundle icons with the default light blue background icon. Your administrator might choose to use a different background icon; however, the status icons such as ![icon] and ![icon], remain the same.

Icon	Status
![icon]	Available. You can launch the bundle.
![icon]	Unavailable. You cannot launch the bundle. Either the device does not meet the system requirements established for the bundle or the bundle is not scheduled to be available at the current time.

Icon	Status
	Downloading. The bundle is downloading from the network location where it is stored.
	Installing. The bundle is installing to the device.
	Running. The bundle is currently running.
	Uninstalling. The bundle is being removed from the device.
	Not Installed. The bundle failed to install. Right-click the icon, then click *Verify* to repair the bundle.

6.5 Launching a Bundle

By default, the ZENworks Adaptive Agent does not distribute (download and install) a bundle to your device until the first time you launch it. The distribution process might include installing the bundle's files, running scripts, and changing the device's registry, specific INI files, or environment variables. Or, the process might include nothing more than providing a shortcut to the application's executable file on your local device or a network server.

To launch a bundle:

1 Access the bundle in one of the following locations:

ZENworks Window: From the *Start* menu, click *Programs > Novell ZENworks > ZENworks Window*.

ZENworks Explorer: Open Windows Explorer and find the ZENworks Adaptive Agent entry. Depending on how your ZENworks administrator configured the bundle, the bundle icon might also be displayed on the desktop, Start menu, Quick Launch toolbar, or notification area.

ZENworks Icon: In the notification area, double-click the Z icon, then click *Bundles*.

2 Double-click the bundle icon.

6.6 Postponing a Bundle Download

If, after you launch a bundle, it begins to download and you need to stop the download, you can postpone the download to a later time. When you resume the download, it continues from the point where it previously stopped.

1 Access the bundle in one of the following locations:

ZENworks Window: From the *Start* menu, click *Programs > Novell ZENworks > ZENworks Window*.

ZENworks Explorer: Open Windows Explorer and find the ZENworks Adaptive Agent entry. Depending on how your ZENworks administrator configured the bundle, the bundle icon might also be displayed on the desktop, Start menu, Quick Launch toolbar, or notification area.

2 Right-click the bundle icon, then click *Postpone*.

6.7 Verifying a Bundle

If an installed application is not functioning correctly or you think it might be outdated, you can verify that the application's bundle information is still correct. If it is not, the ZENworks Adaptive Agent reinstalls the bundle to your workstation.

1 Access the bundle in one of the following locations:

ZENworks Window: From the *Start* menu, click *Programs > Novell ZENworks > ZENworks Window*.

ZENworks Explorer: Open Windows Explorer and find the ZENworks Adaptive Agent entry. Depending on how your ZENworks administrator configured the bundle, the bundle icon might also be displayed on the desktop, Start menu, Quick Launch toolbar, or notification area.

2 Right-click the bundle icon, then click *Verify*.

6.8 Viewing a Bundle's Properties

You can view a bundle's properties to see its version number, current installation status, and help contacts. In addition, if the bundle is unavailable, you can see if it is unavailable because of system requirements or schedule restrictions.

1 Access the bundle in one of the following locations:

ZENworks Window: From the *Start* menu, click *Programs > Novell ZENworks > ZENworks Window*.

ZENworks Explorer: Open Windows Explorer and find the ZENworks Adaptive Agent entry. Depending on how your ZENworks administrator configured the bundle, the bundle icon might also be displayed on the desktop, Start menu, Quick Launch toolbar, or notification area.

2 Right-click the bundle icon, then click *Properties*.

6.9 Uninstalling a Bundle

Uninstall is an administrator-controlled feature. By default, uninstall is not enabled, which means that you can only uninstall bundles if your administrator has enabled the feature. Uninstall is enabled on a per-bundle basis. Depending on what your administrator enables, you might be able to uninstall some bundles but not others.

When you uninstall a bundle, the ZENworks Adaptive Agent removes all files from your device and undoes all configuration settings made to your device during the bundle installation. Only files that the Adaptive Agent installs specifically for the bundle are removed. For example, the Adaptive Agent does not remove any shared files (files used by another application) or any user-created files such as word processing documents or spreadsheets.

After you uninstall a bundle, the bundle's icon remains on your device. This enables you to install the bundle again whenever necessary.

To uninstall a bundle:

1 Access the bundle in one of the following locations:

ZENworks Window: From the *Start* menu, click *Programs > Novell ZENworks > ZENworks Window*.

ZENworks Explorer: Open Windows Explorer and find the ZENworks Adaptive Agent entry. Depending on how your ZENworks administrator configured the bundle, the bundle icon might also be displayed on the desktop, Start menu, Quick Launch toolbar, or notification area.

2 Right-click the bundle icon, then click *Uninstall*.

Naming Conventions in ZENworks Control Center

<div style="text-align: right">A</div>

When you name an object in ZENworks® Control Center (folders, bundles, bundle groups, and so forth), ensure that the name adheres to the following conventions:

- The name must be unique in the folder.

- Depending on the database being used for the ZENworks database, uppercase and lowercase letters might not create uniqueness for the same name. The embedded database included with ZENworks Configuration Management is case insensitive, so Folder 1 and FOLDER 1 are the same name and cannot be used in the same folder. If you use an external database that is case-sensitive, Folder 1 and FOLDER 1 are unique.

- If you use spaces, you must enclose the name in quotes when entering it on the command line. For example, you must enclose bundle 1 in quotes ("bundle 1") when entering it in the zman utility.

- The following characters are invalid and cannot be used: / \ * ? : " ' < > | ` % ~

Install, Uninstall, and Repair Parameters

B

While creating Windows MSI bundles, you can select install, uninstall, and repair parameters. The following sections contain information to help you select the desired options:

B.1 Install Parameters

The Install Parameters dialog box lets you specify the desired parameters.

Figure B-1   *Install Parameters Dialog Box*
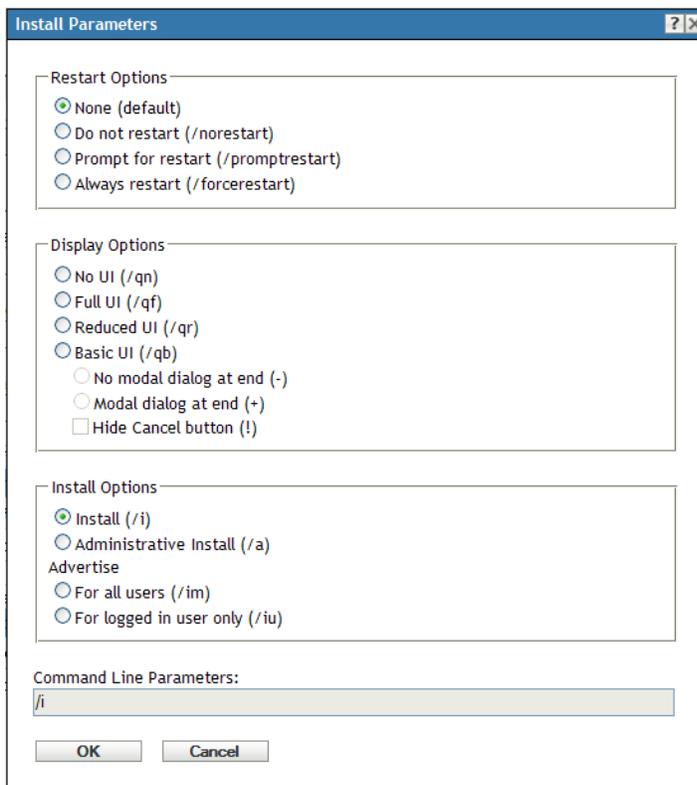
The following sections contain additional information:

B.1.1 Restart Options

In some cases, installing an application requires restarting the workstation.

In the Install Parameters dialog box, select the desired Restart option:

None (default): Uses the MSI application's settings to determine whether or not a restart occurs. ZENworks® does not force a Restart option.

Do Not Restart (/norestart): Never restarts the workstation during the install process. The installation is not completed until the next time the workstation starts.

Prompt For Restart (/promptrestart): Prompts users before restarting the workstation. If users answer No, the installation is not completed until the next time they manually restart.

Always Restart (/forcerestart): Forces the workstation to restart without prompting users.

B.1.2 Display Options

In the Install Parameters dialog box, select the desired Display options. You can choose to perform the installation with or without a user interface, whether to display a modal dialog box at the end of the install process (a modal dialog box demands a response from the user before the installation is complete), or to hide the *Cancel* button so that users cannot cancel the installation.

No UI (/qn): Installs the application with no user interface (silent installation).

NOTE: This is the default installation option. If you want users to be aware that ZENworks Configuration Management is installing an application to help prevent them from rebooting or calling the help desk, change the display options to *Basic UI (/qb)* with *No modal dialog at end (-)* and *Hide Cancel button (!)*.

You can select the options in the dialog box or you can type /i /qb-! in the *Command Line Parameters* field.

Full UI (/qf): Installs the application with the full user interface and a modal dialog box displayed at the end of the installation.

Reduced UI (/qr): Installs the application with a reduced user interface and a modal dialog box displayed at the end of the installation.

Basic UI (/qb): Installs the application with a basic user interface consisting of a progress bar. The following settings are available with this option:

- **No modal dialog at end (-):** Displays a basic user interface with no modal dialog box displayed at the end of the installation.
- **Modal dialog at end (+):** Displays a basic user interface with a modal dialog box displayed at the end of the installation.
- **Hide Cancel button (!):** Displays a basic user interface without a *Cancel* button, so the user cannot cancel the installation process.

B.1.3 Install Options

In the Install Parameters dialog box, select the desired Install options:

Install (/i): Installs the application.

Administrative Install (/a): Creates an administrative installation point for the application. This option is useful for a network installation.

For All Users (/im): Advertises the application on the computer and installs the application for all users on first use.

For Logged In User Only (/iu): Advertises the application on the computer for the logged-in (current) user and installs the application on first use. Do not use this option when performing a System installation or when using a dynamic administrator to install the application.

A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

B.1.4 Command Line Parameters

Displays the install command line parameters used during the application's installation. As you select Restart, Display, and Install options, the command line parameters in this field are automatically populated.

B.2 Uninstall Parameters

The Uninstall Parameters dialog box lets you specify the desired parameters.

Figure B-2   *Uninstall Parameters Dialog Box*
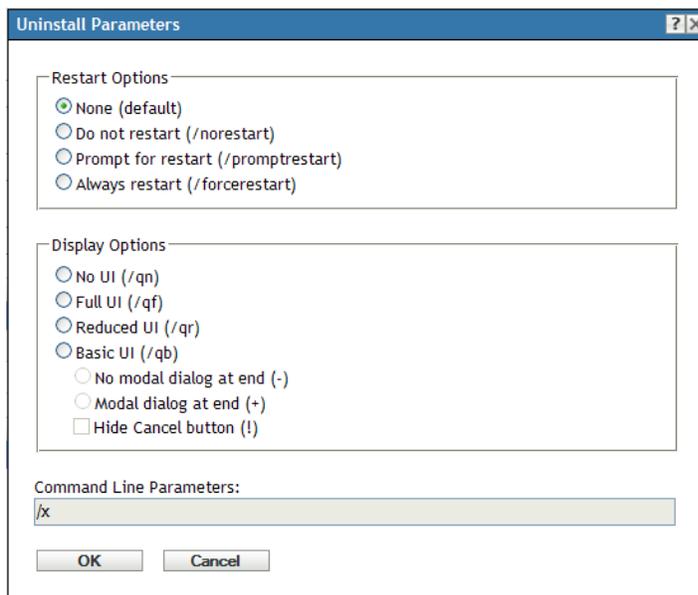
The following sections contain additional information:

B.2.1 Restart Options

In some cases, uninstalling an application requires restarting the workstation.

SIn the Uninstall Parameters dialog box, select the desired Restart option:

None (default): Uses the MSI application's settings to determine whether or not a restart occurs. ZENworks does not force a Restart option.

Do Not Restart (/norestart): Never restarts the workstation during the uninstall process. The uninstallation is not completed until the next time the workstation starts.

Prompt For Restart (/promptrestart): Prompts users before restarting the workstation. If users answer No, the uninstallation is not completed until the next time they manually restart.

Always Restart (/forcerestart): Forces the workstation to restart without prompting users.

B.2.2 Display Options

In the Uninstall Parameters dialog box, select the desired Display options. You can choose to perform the uninstallation with or without a user interface, whether to display a modal dialog box at the end of the uninstallation process (a modal dialog box demands a response from the user before the uninstallation is complete), or to hide the *Cancel* button so that users cannot cancel the uninstallation.

No UI (/qn): Uninstalls the application with no user interface (silent uninstallation).

Full UI (/qf): Uninstalls the application with the full user interface and a modal dialog box displayed at the end of the uninstallation.

Reduced UI (/qr): Uninstalls the application with a reduced user interface and a modal dialog box displayed at the end of the uninstallation.

Basic UI (/qb): Uninstalls the application with a basic user interface consisting of a progress bar. The following settings are available with this option:

- **No modal dialog at end (-):** Displays a basic user interface with no modal dialog box displayed at the end of the uninstallation.
- **Modal dialog at end (+):** Displays a basic user interface with a modal dialog box displayed at the end of the uninstallation.
- **Hide Cancel button (!):** Displays a basic user interface without a *Cancel* button, so the user cannot cancel the uninstallation process.

B.2.3 Command Line Parameters

Displays the command line parameters used during the application's uninstallation. As you select Restart and Display options, the command line parameters in this field are automatically populated.

B.3 Repair Parameters

The Repair Parameters dialog box lets you specify the desired parameters.

Figure B-3   *Repair Parameters Dialog Box*
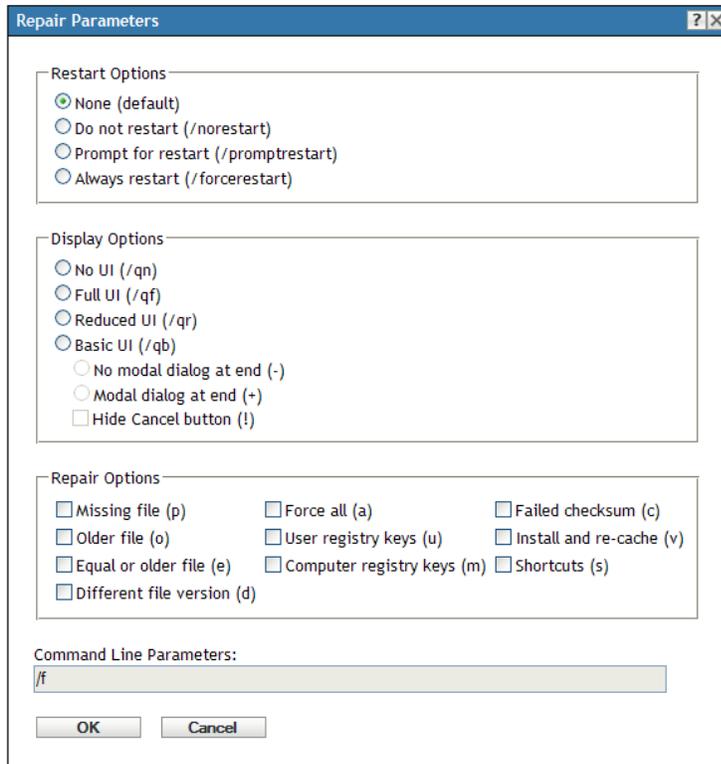
The following sections contain additional information:

B.3.1 Restart Options

In some cases, repairing an application requires restarting the workstation.

In the Repair Parameters dialog box, select the desired Restart option:

None (default): Uses the MSI application's settings to determine whether or not a restart occurs. ZENworks does not force a Restart option.

Do Not Restart (/norestart): Never restarts the workstation during the repair process. The repair process is not completed until the next time the workstation starts.

Prompt For Restart (/promptrestart): Prompts users before restarting the workstation. If users answer No, the repair process is not completed until the next time they manually restart.

Always Restart (/forcerestart): Forces the workstation to restart without prompting users.

B.3.2 Display Options

In the Repair Parameters dialog box, select the desired Display options. You can choose to perform the repair process with or without a user interface, whether to display a modal dialog box at the end of the repair process (a modal dialog box demands a response from the user before the process is complete), or to hide the *Cancel* button so that users cannot cancel the repair process.

No UI (/qn): Repairs the application with no user interface (silent repair process).

Full UI (/qf): Repairs the application with the full user interface and a modal dialog box displayed at the end of the process.

Reduced UI (/qr): Repairs the application with a reduced user interface and a modal dialog box displayed at the end of the process.

Basic UI (/qb): Repairs the application with a basic user interface consisting of a progress bar. The following settings are available with this option:

- **No modal dialog at end (-):** Displays a basic user interface with no modal dialog box displayed at the end of the process.
- **Modal dialog at end (+):** Displays a basic user interface with a modal dialog box displayed at the end of the process.
- **Hide Cancel button (!):** Displays a basic user interface without a *Cancel* button, so the user cannot cancel the repair process.

B.3.3 Repair Options

In the Repair Parameters dialog box, select the desired Repair options:

Missing File (p): Instructs Windows Installer to repair a file only if it is missing.

Older File (o): Instructs Windows Installer to repair a file if it is missing or if the installed file's version is older than the file in the MSI package.

Equal or Older File (e): Instructs Windows Installer to repair a file if it is missing or if the installed file's version is the same as or older than the file in the MSI package.

Different File Version (d): Instructs Windows Installer to repair a file if it is missing or if the installed file's version is not exactly the same as the file in the MSI package.

Force All (a): Instructs Windows Installer to repair all files.

User Registration Keys (u): Instructs Windows Installer to repair all per-user entries from the MSI package to the Windows system registry. Per-user entries are those entries contained in the `HKEY_CURRENT_USER` and `HKEY_USERS` registry hives.

Computer Registry Keys (m): Instructs Windows Installer to repair all per-machine entries from the MSI package to the Windows system registry. Per-machine entries are those entries contained in the `HKEY_LOCAL_MACHINE` and `HKEY_CLASSES_ROOT` registry hives.

Failed Checksum (c): Instructs Windows Installer to perform a checksum on all executable files and to repair a file if it is missing or if the checksum verifies that the file is corrupt. Only files that

have `msidbFileAttributesChecksum` in the *Attributes* column of the MSI package's File Table are repaired.

Install and Re-Cache (v): Instructs Windows Installer to repair files from the re-cache (local) source rather than the source package.

Shortcut(s): Instructs Windows Installer to repair the MSI application's shortcuts, overwriting any existing shortcuts and icons.

B.3.4 Command Line Parameters

Displays the command line parameters used during the application's repair process. As you select the Restart, Display, and Repair options, the command line parameters in this field are automatically populated.

Novell File Upload Extension

C

If the Novell® File Upload extension is not installed on this device, it must be installed before you can browse for file paths and upload files.

After installing the Novell File Upload extension, you do not need to perform this procedure again on this device, assuming you use the same Web browser (Mozilla* Firefox* or Microsoft Internet Explorer, for example) to upload files.

The following sections contain browser-specific information:

C.1 Mozilla Firefox

1 Click the *Install the Novell File Upload extension* link.

Depending on your Web browser's security settings, you might receive a message indicating that your browser has prevented installation of the Novell File Upload extension.

You receive the following message at the top of your browser window:

```
Firefox prevented this site from asking you to install software
on your computer.
```

Figure C-1 *Firefox Message*
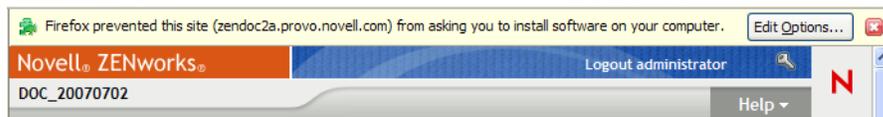
2 Click the *Edit Options* button on the right side of the message, click *Allow*, then click *Close*.

3 Click the *Install the Novell File Upload extension* link again.

4 Click *Install Now*, then restart your Web browser.

C.2 Microsoft Internet Explorer

When a Web page refers to an ActiveX* control that is not currently on the workstation, users are asked whether or not they want the ActiveX control to be downloaded. This prompt is displayed in the information bar. The information bar displays in between the Internet Explorer toolbars and the Web page when a notification is present, and disappears on the next navigation.

Figure C-2 *Windows Explorer Message*
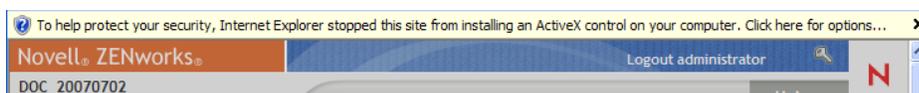
Displaying the information bar is enabled by default; however, the user can change the default setting so that the information bar does not display. Additionally, the ActiveX controls are installed automatically, without the information bar being displayed, if the publisher of the control (such as Novell) has been previously marked by the user as trusted.

If you are running Internet Explorer (assuming that you are using the default settings and have not marked Novell as trusted), the following message displays in the information bar:

```
To help protect your security, Internet Explorer stopped this site
from installing an ActiveX control on your computer. Click here for
options.
```

1 Click the information bar, then click *Install ActiveX Control*.

2 If you are prompted that Internet Explorer needs to resend information that you have previously submitted, click *Retry*.

3 Click *OK* to install the Novell File Upload extension.

You do not need to restart Internet Explorer.

Bundle Schedules

<div style="text-align: right; font-size: large;">D</div>

The following schedules are available:

D.1 Date Specific

The Date Specific scheduling option lets you specify one or more dates on which to run the event.

Figure D-1   *Date Specific Schedule*

Start Dates: Click ⊞ to display a calendar you can use to select a date for the event. You can add multiple dates one at a time.

Run Event Every Year: Select this option to run the event every year on the dates shown in the *Start Date(s)* list.

Select When Schedule Execution Should Start: Select one of the following options:

- **Start Immediately at Start Time:** Starts the event at the time you specify in the *Start Time* field.

- **Start at a Random Time between Start Time and End Time:** Starts the event at a randomly selected time between the time you specify in the *Start Time* and *End Time* fields. You can use this option to avoid possible network overload from concurrently scheduled events.

Use Coordinated Universal Time (UTC): The Start Time is converted to Universal Coordinated Time (UTC). Select this option to indicate that the Start Time you entered is already in Coordinated Universal Time and should not be converted. For example, suppose you are in the Eastern time zone. If you enter 10:00 a.m. and select this option, the Start Time is scheduled for 10:00 UTC. If you don't select this option, the Start Time is scheduled for 14:00 UTC because Eastern time is UTC - 4 hours.

D.2 Event

This scheduling option lets you specify the event you want to trigger the scheduled action.

Figure D-2   Event Schedule

Select from the following triggers:

User Login: A user logs in to the device's operating system.

User Logout: A user logs out of the device's operating system.

Device Boot: The device powers on.

Device Shutdown: The device powers off.

On Device Lock: The device's operating system is locked.

On Device Unlock: The device's operating system is unlocked.

ZENworks Login: A user logs in to the ZENworks® Management Zone.

ZENworks Logout: A user logs in out of the ZENworks Management Zone.

Device Connecting to Network (Windows Only): The disconnected device detects a new wired or wireless network connection.

D.3 Now

Select this scheduling option to run the event immediately.

D.4 Recurring

The Recurring scheduling option lets you repeat the event at a specified interval.

NOTE: The following sections describe all of the Recurring schedule options. Depending on the event or action you are scheduling, some options might not be available.

Figure D-3 *Recurring Schedule*

When a Device Is Refreshed: This schedule causes the event to occur each time the ZENworks Adaptive Agent performs a refresh on the device. If you want to delay the event so that it does not happen immediately upon refresh, select the *Delay execution after refresh* option and specify the number of days, hours, or minutes you want to delay the event.

Days of the Week: This schedule lets you specify the days during the week that you want the event to run. The event is run on these same days each week.

Select *Days of the Week*, then fill in the following fields:

- ◆ **Sun ... Sat:** Specifies the days of the week you want to run the event.
- ◆ **Start Time:** Specifies the time you want to run the event.
- ◆ **Process Immediately if Device Unable to Execute on Schedule:** The event is run immediately if, for some reason, the schedule you configured results in the event not being able to run.

- **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Select this option to indicate that the Start Time you entered is already in Coordinated Universal Time and should not be converted. For example, suppose you are in the Eastern time zone. If you enter 10:00 a.m. and select this option, the Start Time is scheduled for 10:00 UTC. If you don't select this option, the Start Time is scheduled for 14:00 UTC because Eastern time is UTC - 4 hours.

- **Start at a Random Time between Start Time and End Time:** Starts the event at a randomly selected time between the time you specify in the *Start Time* and *End Time* fields. You can use this option to avoid possible network overload from concurrently scheduled events.

- **Restrict Schedule Execution to the Following Date Range:** Limits running the event to the time period specified by the starting and ending dates.

Monthly: This schedule lets you specify one or more days during the month to run the event.

Select *Monthly*, then fill in the following fields:.

- **Day of the Month:** Specifies the day of the month to run the event. Valid entries are 1 through 31. If you specify 29, 30, or 31 and a month does not have those days, the event is not run that month.

- **Last Day of the Month:** Runs the event on the last day of the month, regardless of its date (28, 30, or 31).

- *First Sunday***:** Specifies a specific day of a week. For example, the first Monday or the third Tuesday. Click to add multiple days.

- **Start Time:** Specifies the time you want to run the event.

- **Process Immediately if Device Unable to Execute on Schedule:** The event is run immediately if, for some reason, the schedule you configured results in the event not being able to run.

- **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Select this option to indicate that the Start Time you entered is already in Coordinated Universal Time and should not be converted. For example, suppose you are in the Eastern time zone. If you enter 10:00 a.m. and select this option, the Start Time is scheduled for 10:00 UTC. If you don't select this option, the Start Time is scheduled for 14:00 UTC because Eastern time is UTC - 4 hours.

- **Start at a Random Time between Start Time and End Time:** Starts the event at a randomly selected time between the time you specify in the Start Time and End Time boxes. You can use this option to avoid possible network overload from concurrently scheduled events.

- **Restrict Schedule Execution to the Following Date Range:** Limits running of the event to the time period specified by the starting and ending dates.

Fixed Interval: This schedule lets you specify an interval between days to run the event. For example, you can run the event every 14 days.

Select *Fixed Interval*, then fill in the following fields:.

- **Months, Weeks, Days, Hours, Minutes:** Specifies the interval between times when the event is run. You can use any combination of months, weeks, days, hours, and minutes. For example, both *7 days, 8 hours* and *1 week, 8 hours* provide the same schedule.

- **Start Date:** Specifies the initial start date for the interval.

- **Start Time:** Specifies the initial start time for the interval.

- **Process Immediately if Device Unable to Execute on Schedule:** The event is run immediately if, for some reason, the schedule you configured results in the event not being able to run.

- **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Select this option to indicate that the Start Time you entered is already in Coordinated Universal Time and should not be converted. For example, suppose you are in the Eastern time zone. If you enter 10:00 a.m. and select this option, the Start Time is scheduled for 10:00 UTC. If you don't select this option, the Start Time is scheduled for 14:00 UTC because Eastern time is UTC - 4 hours.

- **Restrict Schedule Execution to the Following Date Range:** Limits running of the event to the time period specified by the start date, end date, and end time.

Actions

E
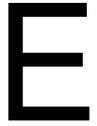
The *Actions* panel displays the action sets available for the bundle. Depending on the bundle type, the possible action sets are Install, Launch, Verify, Uninstall, Terminate, and Preboot. For example, if you select a Windows bundle, five actions sets are available. If you select an Imaging bundle, Preboot is the only available action set available.

You can add an action to any of the available action sets. When you do so, that action is performed whenever the action set is applicable. For example, when you add an action to the Install action set, that action is performed whenever the bundle is installed.

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.
- In ZENworks® Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The following sections contain information about the actions you can configure for the Install, Launch, Verify, and Terminate action sets. For more information about the actions you can configure for the Preboot action set, see "Preboot Actions" in the *ZENworks 10 Configuration Management Preboot Services and Imaging Reference*.

E.1 Action - Copy Directory

The Action - Copy Directory dialog box lets you specify the directory to be copied and its destination directory. You can also specify the executable security level.

NOTE: Copying a file or directory copies the file or directory from one location to another without uploading the files into the ZENworks content repository. Copying a file or directory is described as copying without using content. When copying a file or directory, the managed device performs the copy operation and must be able to resolve both the source and destination paths. Also, when copying a file or directory, the file or directory is not cached on the managed device.

Installing a file or directory uploads the file or directory to the ZENworks content repository before it is distributed to assigned devices. Installing a file or directory is described as copying using content. When installing a file or directory, the file or directory is cached on the managed device.

Installing an executable file does not launch or execute the file. To launch or execute the file, you must add a launch executable action (Launch Windows Executable, Launch Java Application, and so forth) to the bundle.

Figure E-1 *Action - Copy Directory Dialog Box*
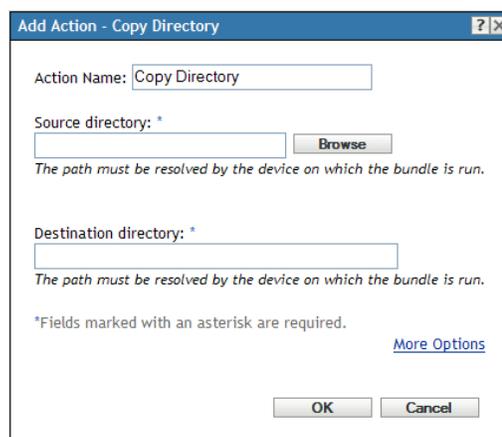
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Source Directory: If you have not installed the Novell File Upload extension on this device, you must do so before you can browse for a directory. For more information, see Novell File Upload Extension.

Click *Browse* to display the Browse for Folder dialog box. Browse to and select the directory to copy.

Destination Directory: Specify the destination path on the device where you want to copy the directory.

Executable Security Level: Click *More Options* to specify the executable security level options.

On Windows 2000/XP/Vista, the application executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the application, you can configure the application to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The action uses the logged-in user's credentials. For example, the action has the same rights to the registry and the file system as the logged-in user.

  Select the initial window size: *Normal*, *Minimized*, *Maximized*, or *Hidden*. In Hidden mode, the action runs normally without a user interface available. This is useful if you want the application to process something, then go away without user intervention.

- **Run as secure system user (Don't allow system to interact with desktop):** The application is run under the Local System user and inherits Administrator-level credentials. For example, the application has full rights to the registry and the file system. Because the security level is set to *Secure*, the application's interface is not displayed to the user and the application is only visible in the Task Manager. This option is useful when running applications that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

  NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

E.2 Action - Copy Files

The Action - Copy Files dialog box lets you specify files to copy to the device.

Figure E-2   *Action - Copy Files Dialog Box*
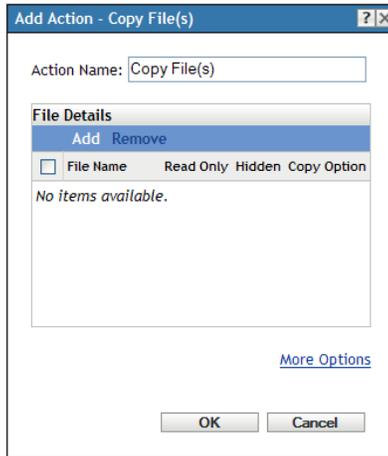
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

File Details: Click *Add* to display the Select Files dialog box. Click the *Help* button for more information.

Executable Security Level: Click *More Options* to specify the executable security level options.

On Windows 2000/XP/Vista, the application executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the application, you can configure the application to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The action uses the logged-in user's credentials. For example, the action has the same rights to the registry and the file system as the logged-in user.

- **Run as secure system user (Don't allow system to interact with desktop):** The application is run under the Local System user and inherits Administrator-level credentials. For example, the application has full rights to the registry and the file system. Because the security level is set to *Secure*, the application's interface is not displayed to the user and the application is only visible in the Task Manager. This option is useful when running applications that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a

dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

E.3 Action - Delay

The Action - Delay dialog box lets you specify a system delay between two actions in the action set.

Figure E-3   *Action - Delay Dialog Box*
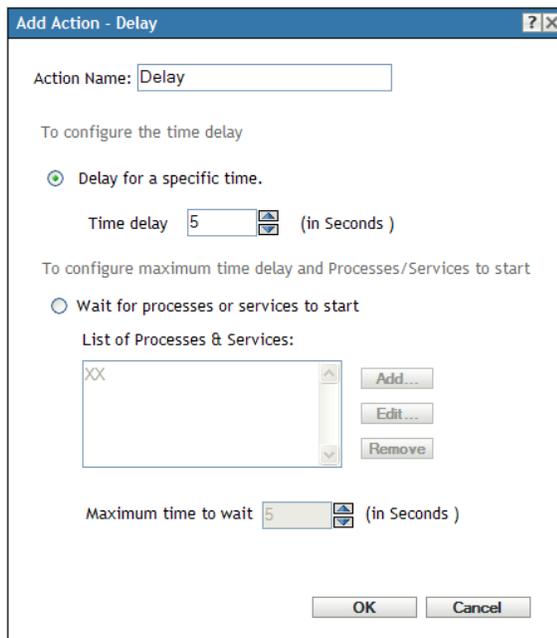
You access this dialog box by using the following methods:

* As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

* In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Delay for a Specific Time: Specify the desired time delay, in seconds. After completing the action, the system delays for the specified amount of time before performing the next action.

Wait for Processes or Services to Start: Specify the processes or services that must start before the next action in the action set is performed.

To add a process or service to the list:

1 Click *Add* to display the *Add Service/Process* dialog box.

2 Select *Process*, specify the process that must start before performing the next action, then click *OK*. You can specify either the name of the process or its full path. For example, you can specify `notepad.exe` or `${SystemRoot}\system32\notepad.exe`.

or

Select *Service*, specify the service that must start before performing the next action, then click *OK*.

3 Repeat Step 2 as needed.

4 Specify the maximum amount of time to wait for the process or service to start before performing the next action in the action set. If the process or service does not start in the specified amount of time, the next action is performed.

5 Click *OK*.

Click *Edit* to change a process or service, or click *Remove* to delete a process or service.

E.4 Action - Display Message

The Action - Display Message dialog box lets you specify a message to display on devices when the action is performed.

Figure E-4   *Action - Display Message Dialog Box*
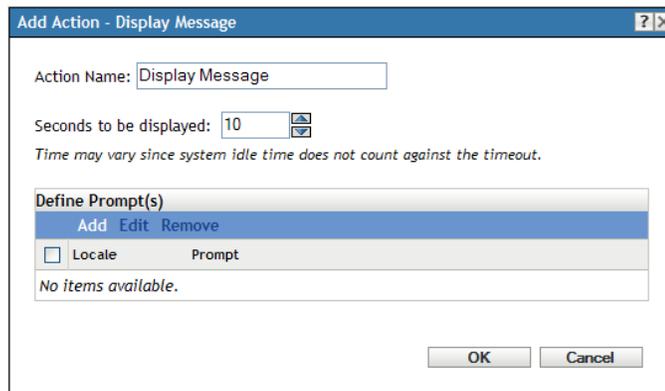
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Seconds to be Displayed: Specify the number of seconds that you want the message displayed on the device.

Define Prompts: Define the prompt that you want to display on the device. Additionally, you can specify different locales with different messages.

To create a message:

1 Click *Add* to display the *Select Locale and Prompt* dialog box.

2 Select a locale from the drop-down list. The message displays only on devices in the specified locale. You can create different messages, each with its own locale setting.

3 Specify the text you want to display on the device.

You can include {0} in your text to provide a running counter that counts down the number of seconds to 0, after which the prompt is auto-accepted. For example, you could specify the following text:

```
Please save your work and close any open applications.
```

The message displays for the number of seconds specified in the *Seconds to be Displayed* field.

4 Click *OK*.

Click *Edit* to change the prompt, or click *Remove* to delete the prompt.

E.5 Action - Edit INI File

The Action - Edit INI File dialog box lets you specify a file and configure the list of changes to be performed on the file. You can also create a file, if one does not exist.

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The following sections contain additional information:

- Section E.5.1, "INI Changes," on page 103
- Section E.5.2, "Advanced Options," on page 105

E.5.1 INI Changes

The INI Changes page lets you specify the INI file to change, add sections to the file, add keys to a section in the file, and import changes from another INI file.

Figure E-5   *Action - Edit INI File Dialog Box: INI Changes Page*
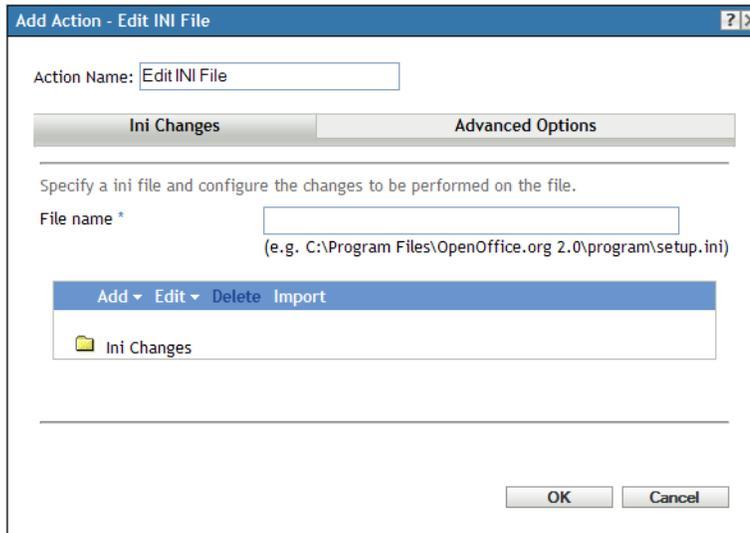
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The following table lists the tasks you can perform to manage INI changes.

Table E-1   *INI Tasks*

Task	Steps	Additional Details
Specify the INI file to change	1. Specify the file that you want to change.	For example, `C:\Program Files\OpenOffice.org 2.0\program\setup.ini.`
Add a section	1. Select the check box next to *INI Changes*, click *Add*, then click *Section Change* to open the Add a Change dialog box. 2. Fill in the fields, then click *OK*. Click the *Help* button for additional information.	

Task	Steps	Additional Details
Add keys to a section	1. Select the check box next to the desired item, click *Add*, then click *Key Change*. 2. Specify the keys to be added to the section in the INI file. Type the key, such as *key1* or *key1=value1*, then click *Add* to move the key to the list. You can edit or remove an entry, or you can use the *Move Up* and *Move Down* buttons to order the list. The changes to the file are made in the order listed.	
Remove a section or keys	1. Select the check box next to the desired item, then click *Delete*.	
Import INI changes from another file	1. Click *Import* to display the Import INI Changes from File dialog box. 2. Specify the file from which you want to import changes, then click *OK*.	
Change the order of items	1. Select the check box next to an item, click *Edit*, then select an option (*Sort*, *Move Up*, *Move Down*).	
Select all the objects of a parent folder	1. Select the check box next to the parent folder, then click *Edit > Select All Children*.	
Deselect all the objects of a parent folder	1. Select the check box next to the parent folder, then click *Edit > Deselect All Children*.	
Clear Selection	1. Click *Edit > Clear Selection*.	

E.5.2 Advanced Options

The Advanced Options page lets you create the file (if it does not exist), specify the number of backup files to retain, and specify key-value separators and comment characters.

Figure E-6 *Action - Edit INI File Dialog Box: Advanced Options Page*
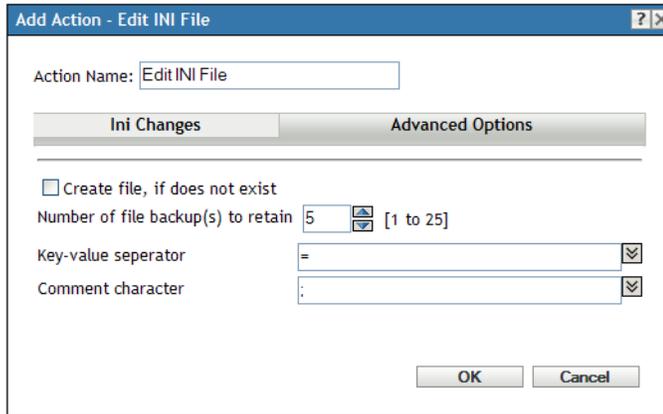
Create File, If Does Not Exist: Specify whether you want to create the file specified in the *Filename* field, if it does not exist.

Number of File Backup(s) to Retain: Specify the number of backups of the INI file to retain. The default is 5 backup copies, but you can specify any number between 1 and 25. When the number of backup copies of the file exceeds the number specified here, the oldest backup file is overwritten.

Key-Value Separator: Specify the character you want to separate key values. You can use an equals sign (=) or a colon (:).

Comment Character: Specify the character you want precede comments in the INI file. You can use a semicolon (;) or a pound sign (#).

E.6 Action - Edit Text File

The Action - Edit Text File dialog box lets you specify a file and configure the list of changes to be performed on the file.

Figure E-7 *Action - Edit Text File Dialog Box*

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Filename: Specify the file that you want to change. For example, `${SystemDrive}\Program Files\myfile.txt`.

File Backup(s) to Retain: Specify the number of backups of the text file to retain. The default is 5 backup copies, but you can specify any number between 1 and 25. When the number of backup copies of the file exceeds the number specified here, the oldest backup file is overwritten.

Encoding: Specify the encoding that you want to use:

- **Auto detect:** Use the encoding used in the original file that you specified in the *Filename* field. This is the default option.

- **ASCII:** Use ASCII encoding.

- **Unicode:** Use Unicode* encoding.

- **UTF-8:** Use UTF-8 (8-bit UCS/Unicode Transformation Format) encoding.

File Operation > Specify Contents of the File: Use this option to specify the contents of the INI file.

- **Import Contents from an Existing File on this Device:** Browse to and select the INI file from which you want to import its contents.

- **Contents of the File:** Specify the contents of the newly created file.

- **Create File, If Does Not Exist:** Specify whether you want to create the file specified in the *Filename* field, if it does not exist.

File Operation > Specify Changes to the File: Use this option to specify the changes to the INI file.

- **Change List:** Specify the changes that you want to make to the text file. Click *Add* to open the Add a Change dialog box, fill in the fields, then click *OK*. Click the *Help* button for additional information.

  You can edit or remove an entry, or you can use the *Move Up* and *Move Down* buttons to order the list. The changes to the file are made in the order listed.

- **Create File, If Does Not Exist:** Specify whether you want to create the file specified in the *Filename* field, if it does not exist.

- **Contents of the File:** If you selected the *Create File, If Does Not Exist* check box, specify the contents of the newly created file that is created if the specified file does not exist.

- **Apply Changes Configured in the Change List:** Specify whether you want to apply the changes that you added to the *Change List* box to the newly created file.

E.7 Action - End Process

The Action - End Process dialog box lets you specify the executable name of the process that you want to stop (for example, `notepad`, `mspaint`, `winword`, and so forth). If the process is not running on the device, the End Process task completes.

Figure E-8   *Action - End Process Dialog Box*
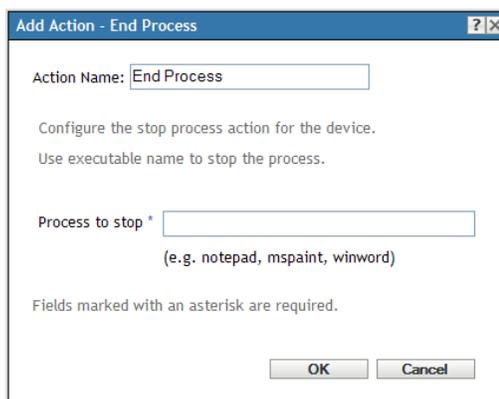
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

* In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

E.8 Action - File Removal

The Action - File Removal dialog box lets you specify files or directories to remove from the device.

Figure E-9   *Action File Removal Dialog Box*

You access this dialog box by using the following methods:

* As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

* In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

You can use this action to perform an automated system cleanup. For example, you can specify that the `c:\windows\Temp\Temporary Internet Files` directory and all files matching `c:\windows\Temp\*.log in` are removed from the device.

You cannot remove read-only files. If you specify a directory that contains several files (including some read-only files), the directory and the read-only files are not removed when the File Removal action runs. The files that are not read-only, however, are removed from the device.

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Full Path to Source Files/Directories: Specify the full path to the file or directory that you want to remove, then click *Add* to add the file or directory to the list. You can use wildcard characters. If you use a mapped network drive to specify the path, you must select *User* from the *Run Action As* list.

Include System Files: Select this option to remove system files. If you specify a directory for removal that includes both system and non-system files, only non-system files are deleted, unless you specify this option.

Delete Folder Only if Empty: Select this option to remove any empty folders that result from the specified files or directories being removed from the device.

When a File is Locked, Retry _ Times, Every _ Seconds: If a file is locked when the action is performed, the file cannot be removed. Select the check box and then specify the number of retry attempts and the time interval between attempts. By default, the action is retried 3 times with 5 seconds between each attempt.

Run Action As: Specify *System* (the default) or *User* from the *Run Action As* list. Specify *System* if removing files requires access to all areas of the device's file system. If you use mapped network drives to specify files and directories, you must run the action as *User*.

E.9 Action - Install Bundle

The Action - Install Bundle dialog box lets you browse to and select the bundle to install on the device. The bundle is installed on the device even if it has not been previously assigned to that device.

Figure E-10   *Action - Install Bundle Dialog Box*
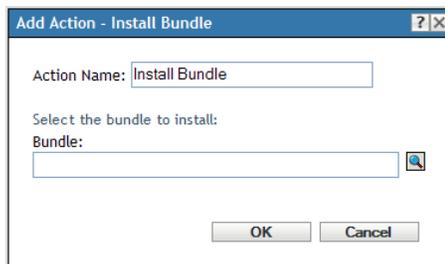
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Creating this action creates a bundle dependency. For more information, see Section 1.4, "Dependency Bundles," on page 13.

E.10 Action - Install Directory

The Action - Install Directory dialog box lets you specify the directory to be installed, specify a destination path, specify whether the directory is hidden or read-only after being installed on the

device, and specify a copy option. You can also use this page to install the Novell File Upload extension, which allows you to browse for directories.

Copying a file or directory copies the file or directory from one location to another without uploading the files into the ZENworks content repository. Copying a file or directory is described as copying without using content. When copying a file or directory, the managed device performs the copy operation and must be able to resolve both the source and destination paths. Also, when copying a file or directory, the file or directory is not cached on the managed device.

Installing a file or directory uploads the file or directory to the ZENworks content repository before it is distributed to assigned devices. Installing a file or directory is described as copying using content. When installing a file or directory, the file or directory is cached on the managed device.

Installing an executable file does not launch or execute the file. To launch or execute the file, you must add a launch executable action (Launch Windows Executable, Launch Java Application, and so forth) to the bundle.

Figure E-11 *Action - Install Directory Dialog Box*

You access this dialog box by using the following methods:

◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Source Directory: Click ⊞ to browse to and select the directory you want to install on the device.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload directories to be installed. For more information, see "Novell File Upload Extension" on page 89.

Destination Directory: Specify the destination directory on the device in which you want to install the directory.

Hidden: Select the *Hidden* check box to specify that the directory is hidden after installation.

Read-Only: Select the *Read-only* check box to specify that the directory is read-only after installation.

Copy Option: Select a copy option from the list:

- **Copy Always:** Copies the contents of the directory regardless of whether the files currently exists on the workstation.
- **Copy If Exists:** Copies the contents of the directory only if the files currently exists on the workstation.
- **Copy If Does Not Exist:** Copies the contents of the directory only if the files does not currently exist on the workstation.
- **Copy If Newer:** Copies the contents of the directory only if the date and time are newer than the existing file's date and time, or if the files does not currently exist on the workstation.
- **Copy If Newer and Exists:** Copies the contents of the directory only if it already exists on the workstation and the existing file has an older date or time.
- **Copy if Newer Version:** Copies the contents of the directory only if the internal version of the file is newer than the existing file's version (if version information is present).
- **Request Confirmation:** Prompts the user to verify that the contents of the directory should be copied.
- **Copy If Different:** Copies the contents of the directory if the date, time, or size is different than the existing file's date, time, or size.

E.11 Action - Install Files

The Action - Install Files dialog box lets you specify the file to install on the device, the destination directory and filename, and the view and copy options.

Figure E-12 *Action - Install Files Dialog Box*
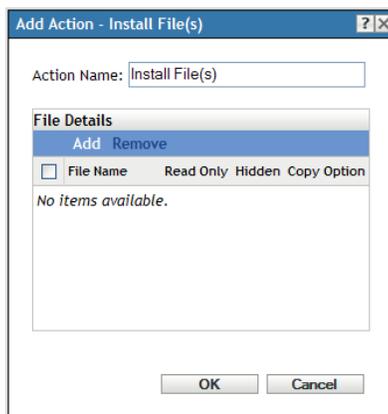
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

In the Action- Install dialog box, click *Add* to display the Select Files dialog box.

Figure E-13 *Select Files Dialog Box*
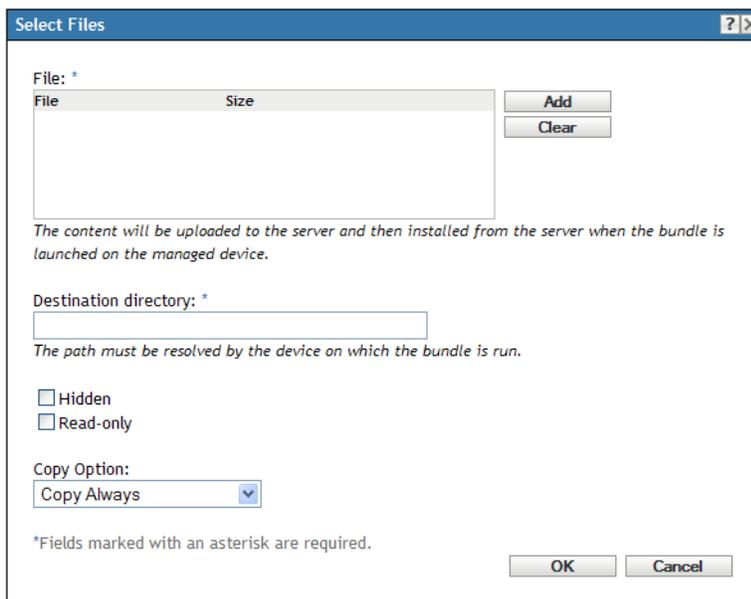
The Select Files dialog box lets you specify the files to be copied, specify a destination and source directory, specify whether the files are hidden or read-only after being copied to the device, and specify a copy option. You can also use this page to install the Novell File Upload extension, which must be installed before you can browse for and upload files.

Copying a file or directory copies the file or directory from one location to another without uploading the files into the ZENworks content repository. Copying a file or directory is described as copying without using content. When copying a file or directory, the managed device performs the copy operation and must be able to resolve both the source and destination paths. Also, when copying a file or directory, the file or directory is not cached on the managed device.

Installing a file or directory uploads the file or directory to the ZENworks content repository before it is distributed to assigned devices. Installing a file or directory is described as copying using content. When installing a file or directory, the file or directory is cached on the managed device.

Installing an executable file does not launch or execute the file. To launch or execute the file, you must add a launch executable action (Launch Windows Executable, Launch Java Application, and so forth) to the bundle.

File: Click *Add* to display the Select Files dialog box, specify the files you want to copy to the device, then click *Open*. Repeat this step as many times as necessary to copy the desired files.

If the Novell File Upload extension is not installed on this device, you must install it before you can browse for file paths. For more information, see "Novell File Upload Extension" on page 89.

Destination Directory: Specify the destination directory on the device in which you want to install the file.

Hidden: Select the *Hidden* check box to specify that the file is hidden after installation.

Read-Only: Select the *Read-only* check box to specify that the file is read-only after installation.

Copy Option: Select a copy option from the list:

- **Copy Always:** Copies the file regardless of whether the file currently exists on the workstation.
- **Copy If Exists:** Copies the file only if the file currently exists on the workstation.
- **Copy If Does Not Exist:** Copies the file only if the file does not currently exist on the workstation.
- **Copy If Newer:** Copies the file only if its date and time are newer than the existing file's date and time, or if the file does not currently exist on the workstation.
- **Copy If Newer and Exists:** Copies the file only if it already exists on the workstation and has an older date or time.
- **Copy if Newer Version:** Copies the file only if its internal version is newer than the existing file's version (if version information is present).
- **Request Confirmation:** Prompts the user to verify that the file should be copied.
- **Copy If Different:** Copies the file if its date, time, or size is different than the existing file's date, time, or size.

E.12 Action - Install MSI

The Action - Install MSI dialog box lets you specify the location of the MSI file; its Install, Uninstall, and Repair parameters; the transform file; and the executable security level.

Figure E-14   *Action - Install MSI Dialog Box*
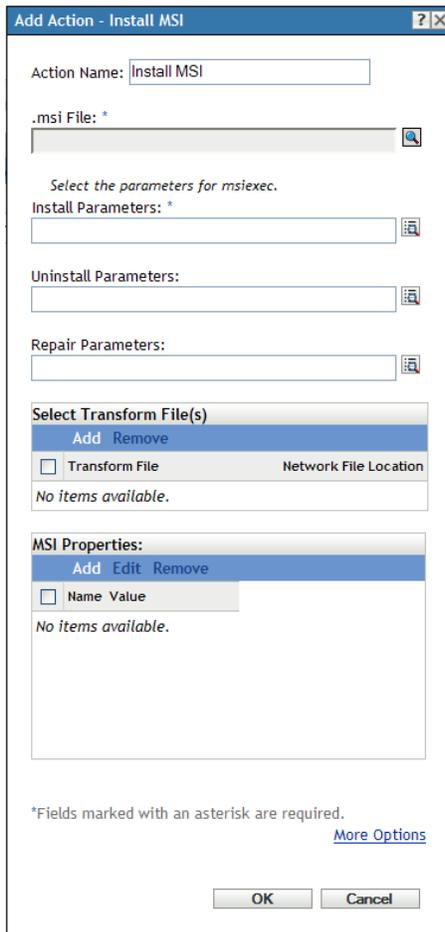
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

.msi File: Click 🔍 to display the Select .msi File dialog box. Browse to and select the `.msi` file to install.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to and upload files. For more information, see "Novell File Upload Extension" on page 89.

Install Parameters: Click 📷 to display the Install Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Uninstall Parameters: Click 📷 to display the Uninstall Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Repair Parameters: Click ![icon] to display the Repair Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Transform File: Click *Add* to browse to and select the desired transform file. You can upload the transform file or you can specify its location.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse for a file path. For more information, see "Novell File Upload Extension" on page 89.

Different groups within an organization often use the same application, but they might not require the same feature set. One of the benefits of Windows Installer is that if you have 10 groups needing 10 different feature sets or other alterations for the same application, you can deploy the same MSI package to all 10 user groups, but with a different transform file (MST) applied for each group.

A transform file is a collection of changes applied to an MSI installation. It contains all modification information, such as whether features are installed; how they are installed; which files, shortcuts, and registry entries are included; and Add/Remove Programs applet information.

If you have vendor-supplied MSI packages, you can use AdminStudio ZENworks Edition to create and manage transforms.

MSI Properties: The MSI package contains the property values that were defined during the administrative installation of the application. These property values determine the way the Microsoft Windows Installer installs the application to the workstation. In some cases, you might want to change one or more of the property values. For example, a property value might define the default location for a user's work files. By adding the property to the list and changing the property's value, you can override the default location defined in the MSI package.

If necessary, you can add public properties that were not included in the MSI package. When doing so, you should be careful to add only those properties that are valid for the package. The following options are available:

- **Add:** To override a property value, you change the property value and add the property to the Properties list so that Application Launcher knows to use that property value rather than the one defined in the MSI package. To do so, click *Add* to display the *MSI Properties* dialog box. In the *Name* field, select the property whose value you want to override, specify the new value in the *Value* field, then click *OK* to add the property to the *MSI Properties* list.

- **Edit:** To modify a property that is in the *MSI Properties* list, select the property, click *Edit*, modify the value data, then click OK.

- **Remove:** To remove a property from the *MSI Properties* list, select the property, then click *Remove*. Deleting the property causes future installations of the application to use the property value defined in the MSI package.

Executable Security Level: Click *More Options* to specify the executable security level options.

On Windows 2000/XP/Vista, the application executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the application, you can configure the application to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The MSI application inherits the logged-in user's credentials. For example, the application has the same rights to the registry and the file system as the logged-in user.

  Select the application's initial window size: *Normal*, *Minimized*, *Maximized*, or *Hidden*. In Hidden mode, the application runs normally without a user interface available. This is useful if you want the application to process something, then go away without user intervention.

- **Run as secure system user (Don't allow system to interact with desktop):** The application is run under the Local System user and inherits Administrator-level credentials. For example, the application has full rights to the registry and the file system. Because the security level is set to *Secure*, the application's interface is not displayed to the user and the application is only visible in the Task Manager. This option is useful when running applications that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

E.13 Action - Install MSP

The Action - Install MSP dialog box lets you specify the location of the MSP file, command line parameters, and executable security level.

Figure E-15   *Action - Install MSP Dialog Box*
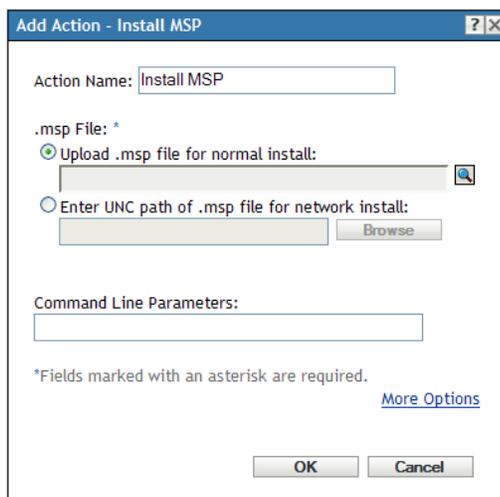
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

.msp File: Click 🔍 to display the Select .msp File dialog box. Browse to and select the MSP file. You can also enter the UNC path of the `.msp` file for a network install.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse for a file path. For more information, see "Novell File Upload Extension" on page 89.

Command Line Parameters: Specify the command line parameters that you want to run when the MSP file is installed.

Executable Security Level: Click *More Options* to specify the executable security level options:

On Windows 2000/XP/Vista, the application executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the application, you can configure the application to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The MSI application inherits the logged-in user's credentials. For example, the application has the same rights to the registry and the file system as the logged-in user.

  Select the application's initial window size: *Normal*, *Minimized*, *Maximized*, or *Hidden*. In Hidden mode, the application runs normally without a user interface available. This is useful if you want the application to process something then go away without user intervention.

- **Run as secure system user (Don't allow system to interact with desktop):** The application is run under the Local System user and inherits Administrator-level credentials. For example, the application has full rights to the registry and the file system. Because the security level is set to *Secure*, the application's interface is not displayed to the user and the application is only visible in the Task Manager. This option is useful when running applications that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

  NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

E.14 Action - Install Network MSI

The Action - Install Network MSI dialog box lets you specify the location of the MSI file; its Install, Uninstall, and Repair parameters; the transform file; and the executable security level.

Figure E-16 *Action - Install Network MSI Dialog Box*

You access this dialog box by using the following methods:

* As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

* In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

.msi File: Specify the `.msi` file to install.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse for a file path. For more information, see "Novell File Upload Extension" on page 89.

Install Parameters: Click ![icon] to display the Install Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Uninstall Parameters: Click ⟨icon⟩ to display the Uninstall Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Repair Parameters: Click ⟨icon⟩ to display the Repair Parameters dialog box, then specify the desired parameters. Click the *Help* button for additional information.

Transform File: Click *Add* to browse to and select the desired transform file. You can upload the transform file or you can specify its location.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse to for a file path. For more information, see "Novell File Upload Extension" on page 89.

Different groups within an organization often use the same application, but that doesn't mean they require the same feature set. One of the benefits of Windows Installer is that if you have 10 groups needing 10 different feature sets or other alterations for the same application, you can deploy the same MSI package to all 10 user groups, but with a different transform file (MST) applied for each group.

A transform file is a collection of changes applied to an MSI installation. It contains all modification information, such as whether features are installed; how they are installed; which files, shortcuts, and registry entries are included; and Add/Remove Programs applet information.

If you have vendor-supplied MSI packages, you can use FLEXnet* AdminStudio ZENworks Edition to create and manage transforms.

MSI Properties: The MSI package contains the property values that were defined during the administrative installation of the application. These property values determine the way the Microsoft Windows Installer installs the application to the workstation. In some cases, you might want to change one or more of the property values. For example, a property value might define the default location for a user's work files. By adding the property to the list and changing the property's value, you can override the default location defined in the MSI package.

If necessary, you can add public properties that were not included in the MSI package. When doing so, you should be careful to add only those properties that are valid for the package. The following options are available:

- **Add:** To override a property value, you change the property value and add the property to the *Properties* list so that Application Launcher knows to use that property value rather than the one defined in the MSI package. To do so, click *Add* to display the *MSI Properties* dialog box. In the *Name* field, select the property whose value you want to override, specify the new value in the *Value* field, then click *OK* to add the property to the *MSI Properties* list.

- **Edit:** To modify a property that is in the *MSI Properties* list, select the property, click *Edit*, modify the value data, then click *OK*.

- **Remove:** To remove a property from the *MSI Properties* list, select the property, then click *Remove*. Deleting the property causes future installations of the application to use the property value defined in the MSI package.

Executable Security Level: Click *More Options* to specify the executable security level options.

On Windows 2000/XP/Vista, the application executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the application, you can configure the application to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The MSI application inherits the logged-in user's credentials. For example, the application has the same rights to the registry and the file system as the logged-in user.

  Select the application's initial window size: *Normal*, *Minimized*, *Maximized*, or *Hidden*. In Hidden mode, the application runs normally without a user interface available. This is useful if you want the application to process something, then go away without user intervention.

- **Run as secure system user (Don't allow system to interact with desktop):** The application is run under the Local System user and inherits Administrator-level credentials. For example, the application has full rights to the registry and the file system. Because the security level is set to *Secure*, the application's interface is not displayed to the user and the application is only visible in the Task Manager. This option is useful when running applications that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

E.15 Action - Launch Bundle

The Action - Launch Bundle dialog box lets you specify the bundle to launch on the device.

Figure E-17 *Action - Launch Bundle Dialog Box*
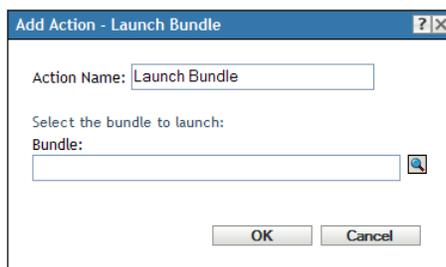
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

In the Action - Launch dialog box, click 🔍 to display the Select the Bundle to Launch dialog box.

The *Look in* list defaults to `/Bundles`. If you have created subfolders to hold your bundles, use the down- arrow to select the appropriate folder. The *Items of type* list defaults to *All Types* so that all types of bundles are displayed (Directive, File, Imaging, and Windows bundles). Also, if you know the name of the bundle you are looking for, you can use the *Item name* box to search for the bundle.

Creating this action creates a bundle dependency. For more information, see Section 1.4, "Dependency Bundles," on page 13.

E.16 Action - Launch Java Application

The Action - Launch Java Application dialog box lets you configure a Java* program to be executed on the managed device.

Figure E-18 *Action - Launch Java Application Dialog Box*

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Java Program Name: Specify the Java program name. For example, `com.novell.TestProg`.

Program Parameters: Specify the program parameters.

Path to Java Runtime Executable (JRE): Specify the path to the Java Runtime Executable (JRE*).

JRE Parameters: Specify the JRE parameters.

Wait Before Proceeding to Next Action: Specify what happens after the Java application launches:

- **No wait:** The next action in the list is immediately performed.
- **When launch action is complete:** The next action in the list is performed after the launch action completes.
- **Wait for _ seconds:** Wait the specified number of seconds before proceeding to the next action.
  - **Terminate action if wait period exceeded:** If you select the *Wait for _ seconds* option, this option is enabled. If the specified number of seconds is exceeded and the action is not successfully performed, the action is terminated.

Working Directory: Click *More Options* to specify the Java application's working directory.

Specify the initial working directory for the application.

Priority: Click *More Options* to specify the Java application's priority.

Specify the priority of the process that runs the application. This option lets you configure how much of the CPU usage the application process consumes. Select from the following priorities: Real Time, High, Above Normal, Normal, Below Normal, and Low.

Run As: Click *More Options* to specify the Java application's *Run As* settings.

- **System:** Runs the application as the system account (as a service).
- **Administrator:** Runs the application as a dynamic administrator user. A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications or running scripts. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

  NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

- **User:** The application runs using the logged-in user's credentials. For example, the application has the same rights to the registry and the file system as the logged-in user.

E.17 Action - Launch URL

The Action - Launch URL dialog box lets you specify the URL to launch on the device.

Figure E-19   *Action - Launch URL Dialog Box*

You access this dialog box by using the following methods:

 ◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

 ◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Click *Test URL* to open a Web browser to verify that the URL is correct.

E.18 Action - Launch Windows Executable

The Add Actions - Launch Windows Executable dialog box lets you specify the Windows executable, command line parameters, and additional optional settings.

Figure E-20   *Actions - Launch Windows Executable Dialog Box*

You access this dialog box by using the following methods:

 ◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Command: Specify the location of the Windows executable, including its filename.

You can specify a local path or a network drive. If you specify the local path, you must include the executable's full path, unless the executable is included in the workstation's search path. If you specify a network drive, you can use a mapped drive or a UNC path, if the workstation can resolve the path.

Click *Add* to browse to and select the desired transform file. You can upload the transform file or you can specify its location.

If you have not installed the Novell File Upload extension on this device, you must do so before you can browse for a file path. For more information, see "Novell File Upload Extension" on page 89.

Command Line Parameters: Specify the command line parameters that you want to run when the executable launches.

Executable Security Level: Click *More Options* to specify the Window executable's security level.

The executable can run in either the "user" space or the "system" space. By default, the *Run normal* option is selected, which causes the application to run in the "user" space and inherit the same workstation security level as the logged-in user.

If the logged-in user's security level does not provide sufficient rights and file access to run the executable, you can configure the executable to run in the "system" space or as a dynamic administrator, as described below:

- **Run normal (as logged in user):** The executable inherits the logged-in user's credentials. For example, the executable has the same rights to the registry and the file system as the logged-in user.

  Select the executable's initial window size: *Normal*, *Minimized*, *Maximized*, or *Hidden*. In Hidden mode, the executable runs normally without a user interface available. This is useful if you want the executable to process something, then go away without user intervention.

- **Run as secure system user (Don't allow system to interact with desktop):** The executable is run under the Local System user and inherits Administrator-level credentials. For example, the executable has full rights to the registry and the file system. Because the security level is set to *Secure*, the executable's interface is not displayed to the user and the executable is only visible in the Task Manager. This option is useful when running executables that require full access to the workstation but require no user intervention.

- **Run as dynamic administrator:** A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

  When performing actions as a dynamic administrator, ensure that you select the *When action is complete* option in the *Wait before proceeding to next action* group box. Selecting this option ensures that the action is completed and the process has terminated and released its resources before ZENworks begins cleaning up and deleting the dynamic administrator account.

NOTE: Performing this action as dynamic administrator on a Windows domain controller fails because Microsoft does not allow the use of local administrator accounts on domain controllers.

Compatibility Mode: Click *More Options* to specify the Window executable's compatibility mode.

This option launches the executable in a contained environment. Some executables cannot run on workstations with newer versions of Microsoft Windows because of incompatibility issues. The drop-down list is available after you select the *Compatibility mode* option.

Select this option if you successfully ran an executable on a previous Windows version but you are unable to run the executable on the device's current Windows version. Select the desired platform from the list.

Display: Click *More Options* to specify the Window executable's display settings.

Select the desired display options:

- **Run in 256 colors:** Sets the color quality setting to 256 colors while this executable is running. The color quality setting reverts back to your default setting when you close the executable.

- **Run in 640 × 480 screen resolution:** Sets the screen resolution setting to 640 × 480 while this executable is running. The color quality setting reverts back to your default setting when you close the executable.

- **Disable visual themes:** Disables visual themes from being applied to the executable. If you are experiencing problems with menus or buttons on the title bar of the executable, this setting might solve these problems. The theme settings revert back to your default setting when you close the executable.

Input Settings: Click *More Options* to specify the Window executable's input settings.

This option temporarily turns off handwriting recognition, speech recognition, and some accessibility features. Turning off text services does not affect multiple languages or keyboards that you have added.

Wait Before Proceeding to Next Action: Click *More Options* to specify how long the Window executable waits before preceding to the next action.

Specify what happens after the executable launches:

- **No wait:** The next action in the list is immediately performed.

- **When launch action is complete:** The next action in the list is performed after the launch action completes. Enable this option if you are running the action as a dynamic administrator and you want the profile cleaned up and deleted immediately. If you do not enable this option, the profile is cleaned up and deleted at the device's next reboot.

- **Wait for _ seconds:** Wait the specified number of seconds before proceeding to the next action.

  - **Terminate action if wait period exceeded:** If you select the *Wait for _ seconds* option, this option is enabled. If the specified number of seconds is exceeded and the action is not successfully performed, the action terminates.

E.19 Action - Launch Windows Thin Client Application

The Action - Launch Widows Thin Client Application dialog box lets you specify to launch an ICA (Independent Computing Architecture) or RDP (Remote Desktop Protocol) client session and configure the appropriate settings.

You access this dialog box by using the following methods:

 * As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

 * In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The following sections contain additional information:

 * Section E.19.1, "ICA Session," on page 127
 * Section E.19.2, "RDP Session," on page 128

E.19.1 ICA Session

Select this option if the terminal server requires the application to run in an ICA client session. Citrix MetaFrame* requires ICA client sessions.

Figure E-21   *Action - Launch Windows Thin Client Application Dialog Box: ICA Session*

Published Application Name: Type the published application name exactly as it is defined in Citrix.

Servers Hosting the Application: Add the Citrix servers that host the application.

1 Type the server's IP address or hostname.

2 Click *Add*.

The order in which the servers are listed is the preferred order for launching. You can use the *Move Up* and *Move Down* buttons to change the order if necessary.

E.19.2 RDP Session

Select this option if the terminal server requires the application to run in an RDP client session. Microsoft Windows Terminal Server requires RDP client sessions.

Figure E-22   *Action - Launch Windows Thin Client Application Dialog Box: RDP Session*

Terminal Server Address: Specify the terminal server's IP address or hostname.

Server Port: If the terminal server is not using default port 3389, specify the correct port number.

Server Domain: If the terminal server is part of a Windows NT domain or an Active Directory domain, specify the domain name. If the user's name and password in the domain matches the user

name and password in Novell eDirectory™, the user is not prompted to log in to the terminal server when launching the application.

Application Path: Specify the path to the application's executable file from the perspective of the terminal server.

Application Working Directory: Specify the path to the directory you want the application to use for its working files.

Color Depth: Select the number of colors for the RDP client session. You can select *256 Colors*, *High Color (15 bits)*, *High Color (16 bits)*, or *True Color (24 bits)*. The default is *True Color (24 bits)*.

Screen Size: If you want the RDP client session to use the entire desktop area, select *Operate in full screen mode*. Otherwise, select *Use specified screen size* and manually set the width and height (in pixels).

E.20 Action - Prompt User

The Action - Prompt User dialog box lets you specify that a prompt displays on the device and configure its settings.

Figure E-23 *Action - Prompt User Dialog Box*
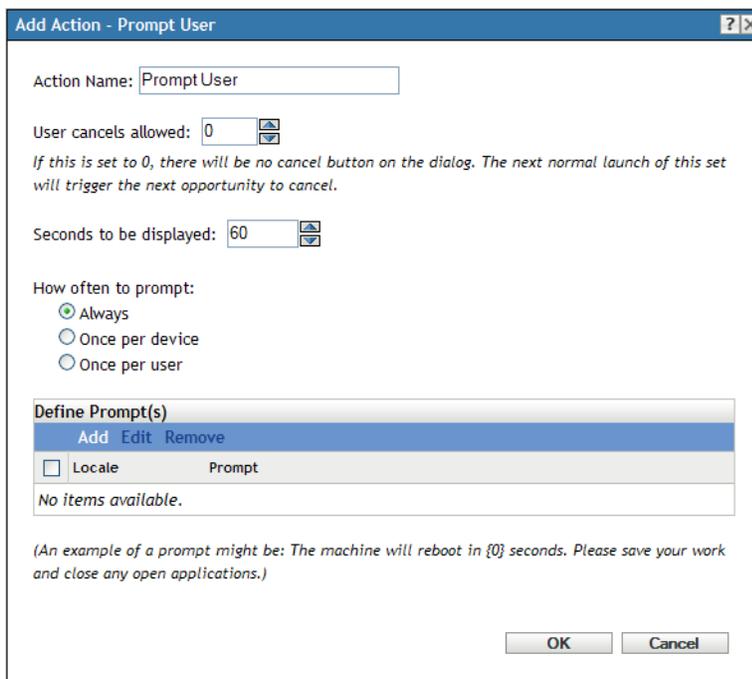
You access this dialog box by using the following methods:

◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install,

Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

User Cancels Allowed: Specify whether the user can cancel the remaining actions in the action set. For example, if the action set installs an application that requires a reboot, and you select this option, the user can cancel the reboot, which, cancels the installation. The install action set is performed again according to its schedule. For this reason, use this option carefully. There is no *Cancel* button on the dialog box if you use the default setting of 0.

Seconds to be Displayed: Specify the number of seconds that the prompt is displayed before the action is performed. For example, suppose you configure a prompt that appears during an application installation before the device performs a required reboot. If you specify that the user can cancel the action set and you specify that the prompt displays for 10 seconds, the prompt displays for 10 seconds and then the device reboots.

How Often to Prompt: Select the desired option:

- **Always:** Display the prompt every time the action is performed.
- **Once per device:** Display the prompt once on the device, regardless of how many users log in.
- **Once per user:** Display the prompt once per user, regardless of how many devices the user logs in to.

Define Prompts: Define the prompt that you want to display on the device. Additionally, you can specify different locales with different messages.

To create a message:

1 Click *Add* to display the *Select Locale and Prompt* dialog box.

2 Select a locale from the drop-down list. The message displays only on devices in the specified locale. You can create different messages, each with its own locale setting.

3 Type the text you want to display on the device.

You can include {0} in your text to provide a running counter that counts down the number of seconds to 0, after which the prompt is auto-accepted. For example, you could specify the following text:

```
The machine will reboot in {0} seconds. Please save your work
and close any open applications.
```

The message displays for the number of seconds specified in the *Seconds to be Displayed* field.

4 Click *OK*.

E.21 Action - Reboot/Shutdown

The Action - Reboot/Shutdown dialog box lets you specify the reboot or shutdown action for the device.

Figure E-24 *Action - Reboot/Shutdown Dialog Box*
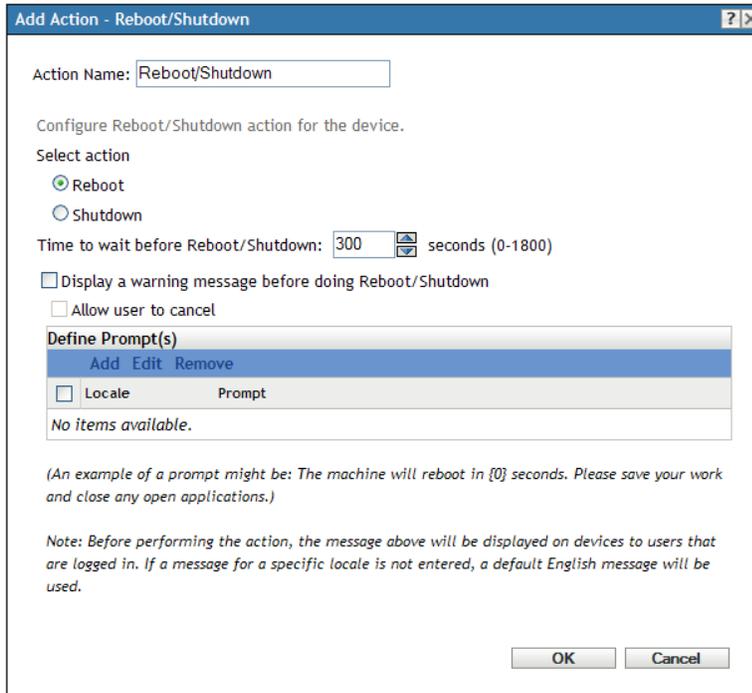
You access this dialog box by using the following methods:

* As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

* In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

NOTE: The Reboot action should not normally be used in conjunction with a Recurring launch schedule set to *When a device is refreshed*. Although there are some valid use scenarios for this configuration, scheduling a device to reboot upon refresh can cause a continuous loop.

Reboot: Reboot the device when this action is performed.

Shutdown: Shut down the device when this action is performed.

Time to Wait Before Reboot/Shutdown: Specify the number of seconds (between -1 and 1800) before the device reboots or shuts down. When the number of seconds specified passes, the device reboots or shuts down, regardless of whether the user clicks *OK* or not. Clicking *OK* does not cause the device to immediately reboot or shut down.

Display a Warning Message Before Doing Reboot/Shutdown: Specify that a message displays on the device, warning the user that the device is going to reboot or shut down.

For example, you could provide the following prompt:
```
The machine will reboot in _ seconds. Please save your work and close
any open applications.
```

Before performing the action, the message displays on the device only if the user is logged in.

Allow User to Cancel: Specify whether the user can cancel the reboot or shutdown procedure.

Define Prompts: Define the prompt that you want to display on the device. Additionally, you can specify different locales with different messages. If you do not specify another locale, a default English message displays.

To create a message:

1 Click *Add* to display the *Select Locale and Prompt* dialog box.

2 Select a locale from the drop-down list. The message displays only on devices in the specified locale. You can create different messages, each with its own locale setting.

3 Type the text you want to display on the device.

You can include {0} in your text to provide a running counter that counts down the number of seconds to 0, after which the prompt is auto-accepted. For example, you could specify the following text:

```
The machine will reboot in {0} seconds. Please save your work
and close any open applications.
```

The message displays for the number of seconds specified in the *Seconds to be Displayed* field.

4 Click *OK*.

E.22 Action - Registry Edit

The Action - Registry Edit dialog box lets you configure the registry file to apply. We recommend that you back up the registry before applying the specified registry file, and ensure that the file is properly formatted and well tested.

Click the *Registry Tree* tab to select hives in the tree to which you want to add values and keys, rename or remove sections, or import a registry file. Click the *Advanced Settings* tab to specify how you want the action to run (as system or user) and to back up the registry file before applying the modified registry file.

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The following sections contain additional information:

- Section E.22.1, "Registry Tree," on page 132
- Section E.22.2, "Advanced Settings," on page 135

E.22.1 Registry Tree

The Registry Tree page lets you select hives in the tree to which you want to add values and keys, rename or remove sections, or import a registry file.

Figure E-25   *Action - Registry Edit Dialog Box: Registry Tree Page*
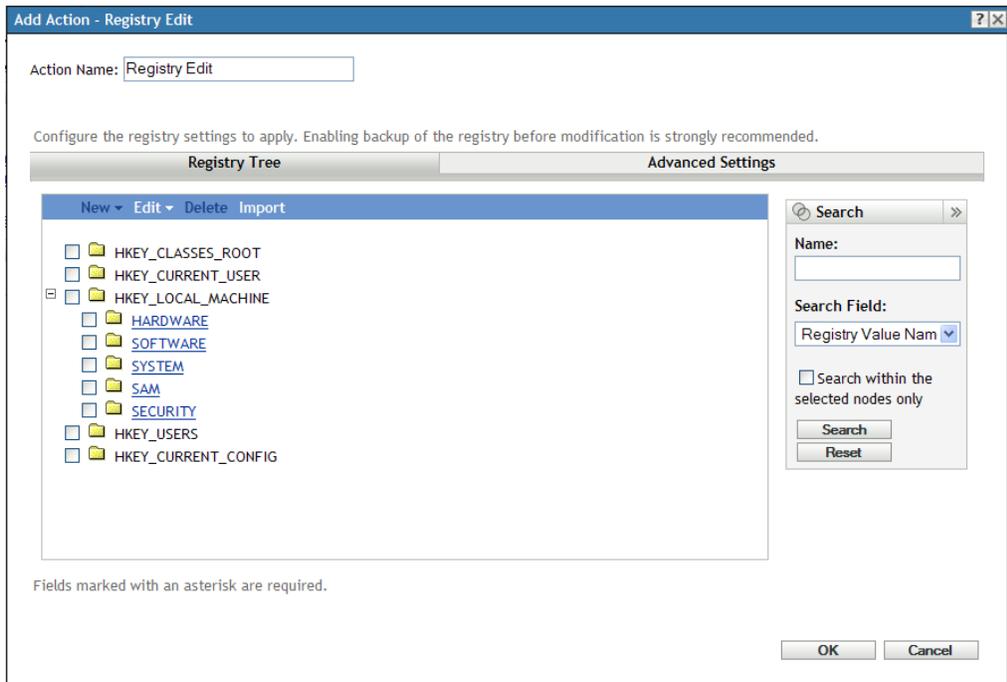
The following table lists the tasks you can perform to manage registry tree changes.

Task	Steps
Add a registry key	1. Select a registry hive, click *New*, then click *Registry Key*. 2. Specify the key's name. 3. Select one of the following registry operations: ◆ **Create Always:** Creates the key regardless of whether the key currently exists in the workstation's registry. ◆ **Create If Does Not Exist:** Creates the key only if the key does not currently exist in the workstation's registry. ◆ **Rename:** Renames the key if it currently exists in the workstation's registry. ◆ **Delete:** Deletes the key if it currently exists in the workstation's registry. ◆ **Delete and Recreate:** Deletes the key if it currently exists in the workstation's registry, then re-creates the key. ◆ **Delete if Empty:** Deletes the key if it currently exists in the workstation's registry and the key is empty. ◆ **None:** Does not perform any registry operation.

Task	Steps
Add a registry value	1. Select the check box next to the desired item, then click *Registry Value* to display the Add Registry Value To dialog box.

2. Select one of the following options from the *Registry Value Type* list:

   ◆ **Default:** Adds a default string value to the selected key.

   ◆ **String:** Adds a string value to the selected key.

   ◆ **Binary:** Adds a binary value to the selected key. Most hardware component information is stored as binary data and is displayed in hexadecimal format.

   ◆ **Dword:** Adds a DWORD value to the selected key. DWORD values are represented by a number that is 4 bytes long. Many parameters for device drivers and services are this type and are displayed in binary, hexadecimal, or decimal format.

   ◆ **Expandable String:** Adds an expandable-string value to the selected key. An expandable string is a variable-length data string. This data type includes variables that are resolved when a program or service uses the data.

   ◆ **Multiple String:** Adds a multi-value string to the selected key. Multiple string values contain lists or multiple values in a form that people can read. Entries are separated by spaces, commas, or other marks.

   ◆ **Qword:** Adds a Qword string to the selected key. A Qword value is data represented by a number that is a 64-bit integer. This data is displayed in the Registry Editor as a binary value.

   ◆ **Link:** Adds a link string value to the selected key. A link string value is a Unicode string naming a symbolic link.

   ◆ **None:** Does not perform any registry operation.

   ◆ **Full Resource Descriptor:** Adds a full resource descriptor value to the selected key. A full resource descriptor is a series of nested arrays designed to store a resource list for a hardware component or driver.

   ◆ **Resource List:** Adds a resource list to the selected key. A resource list is a series of nested arrays that is designed to store a resource list that is used by a hardware device driver or one of the physical devices it controls.

   ◆ **Resource Requirement List:** Adds a resource requirements list to the selected key. A resource requirements list is a series of nested arrays designed to store a device driver's list of possible hardware resources that the driver or one of the physical devices it controls can use.

3. Specify the data. Depending on which value type you selected in the previous step, the type of data varies.

4. Select one of the following registry operations:

   ◆ **Create Always:** The setting is always created in the registry, even if it already exists. If it exists, the setting's current values are overwritten. For example, if `PATH=C:\` already exists, `PATH=C:\TEMP` replaces it.

   ◆ **Create If Exists:** The setting is created only if it already exists. The setting's current values are overwritten. For example, if `PATH=C:\` already exists, `PATH=C:\TEMP` replaces it.

   ◆ **Create If Does Not Exist:** The setting is created only if it does not already exist.

   ◆ **Delete:** The setting is deleted. If the registry setting has subordinate settings, the subordinate settings are also deleted.

   ◆ **Append If Exists, Otherwise Create:** Appends the registry value if the value currently exists in the workstation's registry. If the registry value does not exist, it is created.

   Prepend If Exists, Otherwise Create: Prepends the registry value if the value currently exists in the workstation's registry. If the registry value does not exist, it is created.

Task	Steps
Rename an entry	1. Select the check box next to the desired item, then click *Edit > Rename*. 2. Specify the new name.
Remove an entry	1. Select the check box next to the desired item, then click *Delete*.
Import the contents of a registry file	1. Click *Import*, then specify the registry file whose contents you want to import.
Search for a registry value name, registry key, or both.	1. Specify the name of the value or key that you want to search for. 2. Select *Registry Value Name*, *Registry Key*, or *Both*. 3. Select the *Search within the selected nodes only* check box to limit the search to the node you selected in the *Registry Tree* list. 4. Click *Search*.

E.22.2 Advanced Settings

The Advanced Settings page lets you configure the registry settings to apply.

Figure E-26 *Action - Registry Edit Dialog Box: Advanced Settings Page*
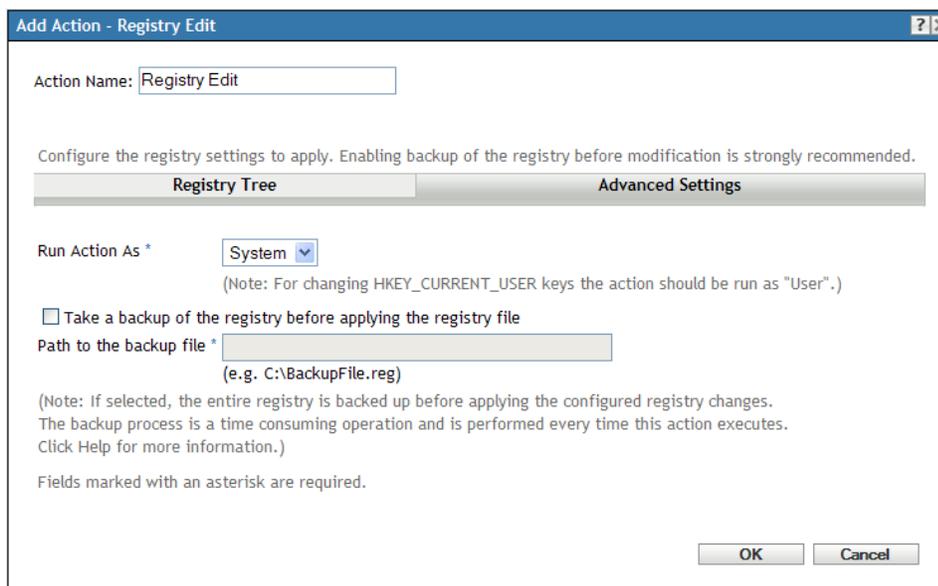
Run Action As: Specify how you want the action to run:

⬥ **System:** The action is run under the Local System user and inherits Administrator-level credentials. For example, the action has full rights to the HKEY_LOCAL_MACHINE hive.

⬥ **User:** The registry file is applied using the logged-in user's credentials. For example, the action has the same rights to the registry and the file system as the logged-in user. If you are changing keys in the HKEY_CURRENT_USER hive, you must run the action as User. Depending on the rights assigned to the user, the action might or might not have rights to the

HKEY_LOCAL_MACHINE hive. If you select *User*, the user must be logged in to the device or the action fails.

Take a Backup of the Registry Before Applying the Registry File: Select the check box, then specify the path to the backup file, for example, c:\BackupFile.reg.

If you select this option, the entire registry is backed up before importing the configured registry file. The backup process is performed every time this action executes. This can be a time-consuming operation and the backup file can be large.

Before you edit the registry, export the keys in the registry that you plan to edit, or back up the entire registry by selecting this option. If a problem occurs, you can then restore the registry to its previous state.

E.23 Action - Run Script

The Action - Run Script dialog box lets you configure a script to be executed on the managed device. For the Run Script action to successfully complete, ensure that the script is silent (requires no user intervention).

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.
- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

The settings vary, depending on the type of script you select from the *Script to run* list. The following options are available:

- Section E.23.1, "Specify a File on a Managed Device," on page 136
- Section E.23.2, "Define Your Own Script," on page 138
- Section E.23.3, "Select From This Device," on page 139

E.23.1 Specify a File on a Managed Device

Select this option to run a script that exists on the managed device.

Figure E-27 *Action - Run Script Dialog Box*

Script Filename: Specify the path to the script file on the target device, for example, `C:\scripts\xyz.pl`.

Script Parameters: Specify any additional parameters you want to place on the command line after the script filename is specified. This results in parameters being passed to your executable script.

Path to Script Engine: Specify the interpreter that launches to run your script. For example, `C:\Program Files\Perl\bin\Perl.exe`.

For Windows scripts other than batch scripts (for example, VBScript), the *Path to Script Engine* field should specify the path to the Windows Based Script Host, such as `(C:\Windows\System32\wscript.exe)`

Script Engine Parameters: Specify any parameters you want included on the command line when the script engine launches.

Wait Before Proceeding to Next Action: Specify what happens after the script is run:

* **No wait:** The next action in the list is immediately performed.

* **When launch action is complete:** The next action in the list is performed after the launch action completes.

* **Wait for _ seconds:** Wait the specified number of seconds before proceeding to the next action.

    * **Terminate action if wait period exceeded:** If you select the *Wait for _ seconds* option, this option is enabled. If the specified number of seconds is exceeded and the action is not successfully performed, the action is terminated.

Working Directory: Click *More Options* to specify the script's working directory. Specify the initial working directory for the script.

Priority: Click *More Options* to specify the script's priority. Specify the priority of the process that runs the script. This option lets you configure how much of the CPU usage the script process consumes. Select from the following priorities: *Real Time*, *High*, *Above Normal*, *Normal*, *Below Normal*, and *Low*.

Run As: Click *More Options* to specify the script's run as setting. Specify an option:

- **System:** Runs the script as the system account (as a service).

- **Administrator:** Runs the script as a dynamic administrator user. A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications or running scripts. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

- **User:** The script runs, using the logged-in user's credentials. For example, the script has the same rights to the registry and the file system as the logged-in user.

E.23.2 Define Your Own Script

Select this option to type a script in ZENworks Control Center.

Figure E-28   *Action - Run Script Dialog Box*

Script Content: Click *Edit* to display a text box where you type your script. This script is delivered to the assigned devices and is executed in the standard device shell environment.

For example, you can automate drive mapping using the script capabilities of bundles. Your bundle's script could read:

```
net use m: \\server\sys net use w: \\server\vol1
```

If the user is logged in as an eDirectory user with rights, then the mapping works. They can map a drive to a Windows share using a domain account by putting the username/password on the script line. If they are a logged in as an Active Directory user and have rights, the username/password is not required.

Save File with Extension: Specify the extension that you want appended to the script when it is saved. For example, `.bat.`

Path to Script Engine: Specify the interpreter that launches to run your script.

Script Engine Parameters: Specify any parameters you want included on the command line when the script engine launches.

Wait Before Proceeding to Next Action: Specify what happens after the script is run:

- **No wait:** The next action in the list is immediately performed.
- **When launch action is complete:** The next action in the list is performed after the launch action completes.
- **Wait for _ seconds:** Wait the specified number of seconds before proceeding to the next action.
  - **Terminate action if wait period exceeded:** If you select the *Wait for _ seconds* option, this option is enabled. If the specified number of seconds is exceeded and the action is not successfully performed, the action is terminated.

Working Directory: Click *More Options* to specify the script's working directory. Specify the initial working directory for the script.

Priority: Click *More Options* to specify the script's priority. Specify the priority of the process that runs the script. This option lets you configure how much of the CPU usage the script process consumes. Select from the following priorities: *Real Time, High, Above Normal, Normal, Below Normal,* and *Low*.

Run As: Click *More Options* to specify the script's run as setting. Specify an option:

- **System:** Runs the script as the system account (as a service).
- **Administrator:** Runs the script as a dynamic administrator user. A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications or running scripts. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.
- **User:** The script runs, using the logged-in user's credentials. For example, the script has the same rights to the registry and the file system as the logged-in user.

E.23.3 Select From This Device

Select this option to specify a script file that is already on the device on which you are running ZENworks Control Center.

Figure E-29   *Action - Run Script Dialog Box*

Select From This Device: Browse to and select the script file.

Script Parameters: Specify any additional parameters you want to place on the command line after the script filename is specified. This results in parameters being passed to your executable script.

Path to Script Engine: Specify the interpreter that launches to run your script.

Script Engine Parameters: Specify any parameters you want included on the command line when the script engine launches.

Wait Before Proceeding to Next Action: Specify what happens after the script is run:

 ◆ **No wait:** The next action in the list is immediately performed.

 ◆ **When launch action is complete:** The next action in the list is performed after the launch action completes.

 ◆ **Wait for _ seconds:** Wait the specified number of seconds before proceeding to the next action.

   ◆ **Terminate action if wait period exceeded:** If you select the *Wait for _ seconds* option, this option is enabled. If the specified number of seconds is exceeded and the action is not successfully performed, the action is terminated.

Working Directory: Click *More Options* to specify the script's working directory. Specify the initial working directory for the script.

Priority: Click *More Options* to specify the script's priority. Specify the priority of the process that runs the script. This option lets you configure how much of the CPU usage the script process consumes. Select from the following priorities: *Real Time, High, Above Normal, Normal, Below Normal*, and *Low*.

Run As: Click *More Options* to specify the script's run as setting. Specify an option:

- **System:** Runs the script as the system account (as a service).

- **Administrator:** Runs the script as a dynamic administrator user. A dynamic administrator is an administrator account that is created on the fly to perform certain procedures, such as installing applications or running scripts. Using a dynamic administrator is helpful when installing applications (some MSI applications, for example) that cannot be installed in the system space. When you select this action, the dynamic administrator is created, it performs the required tasks, and then the account is deleted.

- **User:** The script runs, using the logged-in user's credentials. For example, the script has the same rights to the registry and the file system as the logged-in user.

E.24 Action - Start/Stop Service

The Action - Start/Stop Service dialog box lets you specify the service that you want to start or stop.

Figure E-30   *Action - Start/Stop Service Dialog Box*

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Service Name: Specify a service and indicate whether you want to start or stop that service.

Select Action: Select one of the following actions:

- **Start Service:** Starts the specified service. If the service is already running on the device, the Start Service task completes.

- **Stop Service:** Stops the specified service. If the service is not running on the device, the Stop Service task completes.

E.25 Action - Terminate Application

The Action - Terminate Application dialog box lets you undo all operations that are performed in the launch action set. You can also configure a prompt to notify users of the termination.

The name and type of each process that is reversed displays in the list.

Figure E-31   *Action - Terminate Application Dialog Box*
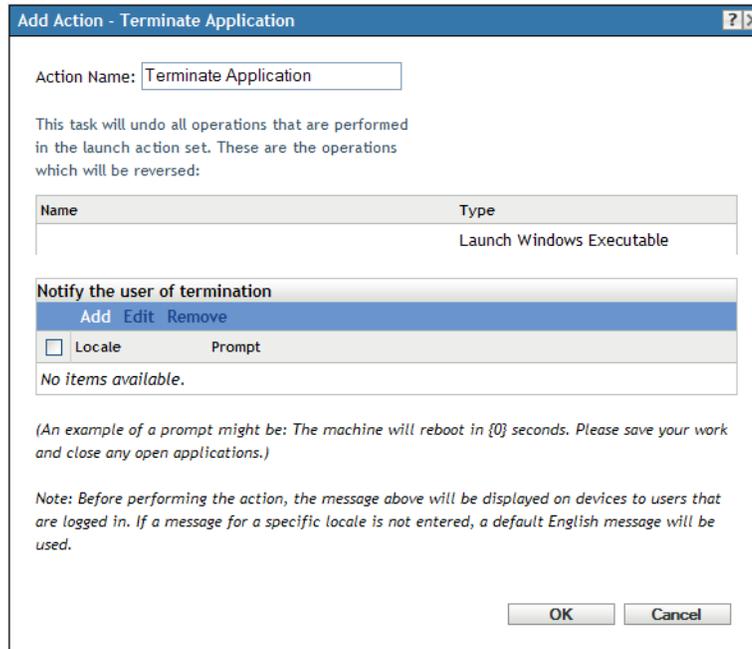
You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Notify the User of Termination: Define the prompt that you want to display on the device. You can also specify different locales with different messages.

To create a message:

1 Click *Add* to display the *Select Locale and Prompt* dialog box.

2 Specify a locale from the drop-down list. The message displays only on devices in the specified locale. You can create different messages, each with its own locale setting.

3 Specify the text you want to display on the device.

You can include {0} in your text to provide a running counter that counts down the number of seconds to 0, after which the prompt is auto-accepted. For example, you could specify the following text:

```
The application will terminate in {0} seconds. Please save your
work.
```

The message displays for the number of seconds specified in the *Seconds to be Displayed* field.

4 Click *OK*.

To remove a prompt, select the check box, then click *Remove*.

E.26 Action - Terminate Application Prompt

The Action - Terminate Application Prompt dialog box lets you configure a prompt to notify users before the application terminates, including the number of seconds to notify the user, the number of times the prompt retries, and different messages for different locales.

Figure E-32 *Action - Terminate Application Prompt Dialog Box*

You access this dialog box by using the following methods:

 As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

 In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Seconds to be Displayed: Specify the number of seconds that the prompt is displayed before the action is performed. For example, suppose you configure a prompt to notify the user that an application is in the process of terminating. If you specify that the prompt display for 10 seconds, the prompt displays for 10 seconds, then the application terminates.

Number of Retries Allowed: Specify the number of times the prompt displays before performing the next action.

Prompt the User to Save Any Unsaved Data: Define the prompt that you want to display on the device. You can also specify different locales with different messages.

To create a message:

1 Click *Add* to display the *Select Locale and Prompt* dialog box.

2 Specify a locale from the drop-down list. The message displays only on devices in the specified locale. You can create different messages, each with its own locale setting.

3 Type the text you want to display on the device.

You can include {0} in your text to provide a running counter that counts down the number of seconds to 0, after which the prompt is auto-accepted. For example, you could specify the following text:

```
The application will terminate in {0} seconds. Please save your
work.
```

The message displays for the number of seconds specified in the *Seconds to be Displayed* field.

4 Click *OK*.

E.27 Action - Undo Install Actions

The Action - Undo Install Actions dialog box lets you undo all operations that are performed in the install action set. The list displays the name and type of each operation that is reversed. There are no configuration tasks that you need to perform for this action.

You access this dialog box by using the following methods:

◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

E.28 Action - Uninstall Bundle

The Action - Uninstall Bundle dialog box lets you select a bundle to remove from the device.

Figure E-33 *Action - Uninstall Bundle Dialog Box*
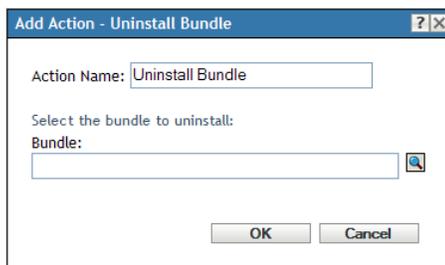
You access this dialog box by using the following methods:

- ◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- ◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Click [icon] to browse to and select the bundle to uninstall from the device.

The *Look in* list defaults to /Bundles. If you have created subfolders to hold your bundles, use the down-arrow to select the appropriate folder. The *Items of type* list defaults to *All Types* so that all types of bundles are displayed (Directive, File, Imaging, and Windows bundles). If you know the name of the bundle you are looking for, you can use the *Item name* box to search for the bundle.

Creating this action creates a bundle dependency. For more information, see Section 1.4, "Dependency Bundles," on page 13.

# E.29 Action - Verify Bundle

The Action - Verify Bundle dialog box lets you verify a bundle on the device.

Verifying a bundle ensures that the specified bundle or bundle group has been properly installed on the device.

For example, for an MSI bundle, verifying the bundle results in the task running an MSI /repair process against the bundle.

Figure E-34   *Action - Verify Bundle Dialog Box*

You access this dialog box by using the following methods:

- ◆ As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- ◆ In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Click [icon] to browse to and select the bundle to verify on the device.

The *Look in* list defaults to /Bundles. If you have created subfolders to hold your bundles, use the down-arrow to select the appropriate folder. The *Items of type* list defaults to *All Types* so that all

types of bundles are displayed (Directive, File, Imaging, and Windows* bundles). If you know the name of the bundle you are looking for, you can use the *Item name* box to search for the bundle.

Creating this action creates a bundle dependency. For more information, see Section 1.4, "Dependency Bundles," on page 13.

E.30 Action - Verify Install Actions

The Verify Install Actions action verifies all operations that are performed in the Install action set. This action does not require any configuration.

You access this dialog box by using the following methods:

- As part of the process of creating a Directive bundle. For more information, see Section 2.1, "Creating Directive Bundles," on page 17.

- In ZENworks Control Center, click the *Bundles* tab, click the underlined link of a bundle in the *Name* column of the *Bundles* list, click the *Actions* tab, click one of the action set tabs (Install, Launch, Verify, Uninstall, Terminate, or Preboot), click the *Add* drop-down list, then select an available action.

Documentation Updates

F

This section contains information on documentation content changes that were made in this *Administration Guide* after the initial release of Novell® ZENworks® Configuration Management. The information can help you to keep current on updates to the documentation.

All changes that are noted in this section are also made in the documentation. The documentation is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the documentation changes listed in this section.

The documentation update information is grouped according to the date the changes are published. Within a dated section, the changes are alphabetically listed by the names of the main table of contents sections in the guide.

If you need to know whether a copy of the PDF documentation you are using is the most recent, the PDF document contains its publish date on the front title page.

The documentation was updated on the following dates:

F.1 May 16, 2008 (Update 2 (v10.0.3))

Updates were made to the following sections. The changes are explained below.

Location	Change
Section E.5, "Action - Edit INI File," on page 103	Added Run Action as User option to the Edit INI action.
Section E.6, "Action - Edit Text File," on page 106	Added Run Action as User option to the Edit Text action.
Section E.22.1, "Registry Tree," on page 132	Added three new options to the edit menu in the Registry Edit action.
Section E.18, "Action - Launch Windows Executable," on page 124	Added the option to add success return codes in the Launch Windows. Executable action
Section E.23, "Action - Run Script," on page 136	Added the option to add success return codes in the Run Script action action.
Step 3 on page 40	Added the information on the placement of the bundle's shortcut in the Start menu of Windows Vista devices .

F.2 January 02, 2007 (Update 1)

Updates were made to the following sections. The changes are explained below.

Location	Change
"ZENworks Migration Utility" on page 12	Location of Temporary Files for Windows ZENworks Migration Utility changed to `zenworks_home\work\collection\datamodel`.