System Administration Reference

Novell®
ZENworks® 10 Asset Management SP3

10.3

May 08, 2012

Contents

7 Server Hierarchy   85

8 Closest Server Rules   89

9 Backing Up and Restoring the ZENworks Server and Certificate Authority   105

10 Disaster Recovery   109

About This Guide

This *System Administration Reference* provides information about general administrative tasks required to manage your Novell ZENworks 10 Asset Management SP3 system. The information in this guide is organized as follows:

- Part I, "ZENworks Control Center," on page 17
- Part II, "ZENworks Servers and Satellite Devices," on page 63
- Part III, "ZENworks Adaptive Agent," on page 125
- Part IV, "ZENworks System Updates," on page 145
- Part V, "Users," on page 199
- Part VI, "ZENworks 10 Product Licensing," on page 233
- Part VII, "Database Management," on page 241
- Part VIII, "Zone Administration," on page 311
- Part IX, "Message Logging," on page 321
- Appendix A, "Support for L4 Switches," on page 341
- Appendix B, "Naming Conventions in ZENworks Control Center," on page 343
- Appendix C, "Schedule Types," on page 345
- Appendix D, "Customizing the Look and Feel of the ZENworks Icon," on page 351

Audience

This guide is intended for ZENworks 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.

Additional Documentation

ZENworks 10 Asset 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 Asset Management documentation (http://www.novell.com/documentation/zam10/index.html).

ZENworks Control Center

This section contains information about using ZENworks Control Center (ZCC) to configure system settings and perform management tasks in your Management Zone.

ZENworks Control Center

You use ZENworks Control Center to configure system settings and perform management tasks in your Management Zone.

ZENworks Control Center is installed on all ZENworks Servers in the Management Zone. You can perform all management tasks on any ZENworks Server.

1.1 Accessing ZENworks Control Center

1 Using a Web browser that meets the requirements listed in "Administration Browser Requirements" in the *ZENworks 10 Asset Management Installation Guide*, enter the following URL:

```
https://ZENworks_Server_Address:port
```

Replace *ZENworks_Server_Address* with the IP address or DNS name of the ZENworks Server. You only need to specify the *port* if you are not using one of the default ports (80 or 443). ZENworks Control Center requires an HTTPS connection; HTTP requests are redirected to HTTPS.

The login dialog box is displayed.
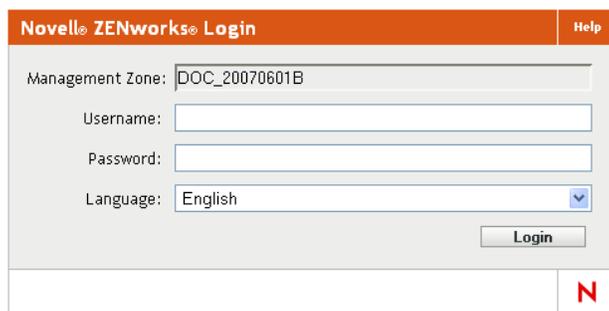
2 In the *Username* field, type `Administrator` (the default) or an administrator name that you previously created in ZENworks Control Center.

To log in to ZENworks Control Center as an administrator who has been created based on users in a user source who has the same name as a previously created ZENworks administrator, specify the username as *name@usersource*.

For example, if the administrator has the name `testadmin` and belongs to the user source named `myserver`, specify the username as `testadmin@myserver`.

3 In the *Password* field, do one of the following:

- If you are logging in through the default Administrator account, specify the Administrator password that you created during installation.

- Specify the password for the administrator name that you created in ZENworks Control Center.

To prevent unauthorized users from gaining access to ZENworks Control Center, the administrator account is disabled after three unsuccessful login attempts, and a 60-second timeout is enforced before you can attempt another login. To change these default values, see .

4 Click *Login* to display ZENworks Control Center.

To log in again as a different administrator, click the *Logout* option in the upper right corner of the ZENworks Control Center window, then when the login dialog box is displayed, log in as a different administrator.

The *Logout* option includes the name of the administrator who is logged in as part of the option. For example, *Logout John*.

1.2 Accessing ZENworks Control Center through Novell iManager

ZENworks 10 Asset Management includes a Novell plug-in module (`.npm`) that you can use to access ZENworks Control Center from Novell iManager, which is a management console used by many Novell products.

The ZENworks Control Center plug-in supports iManager 2.7 only. It does not support iManager 2.6 or 2.5; it will install to these versions but does not work.

To install the ZENworks Control Center plug-in for iManager:

1 On the server where iManager is located (or on a device that has access to the iManager server), open a Web browser to the ZENworks download page:

https://*server*/zenworks-setup

where *server* is the DNS name or IP address of a ZENworks Server.

2 In the left navigation pane, click *Administrative Tools*.

3 Click *zcc.npm* and save the file to a location on the iManager server.

4 Follow the instructions in the *Novell iManager 2.7 Administration Guide* (http://www.novell.com/documentation/imanager27/) to install and configure the plug-in module.

5 Log into iManager.

6 Click the ZENworks icon at the top of the page.

7 Enter the ZENworks Control Center URL:

```
https://ZENworks_Server_Address:port
```

Replace *ZENworks_Server_Address* with the IP address or DNS name of the ZENworks Server. You only need to specify the *port* if the ZENworks server is not using the default port (80 or 443).

8 Click the ZENworks icon to launch ZENworks Control Center.

1.3 Navigating ZENworks Control Center

The following Servers page represents a standard view in ZENworks Control Center:

Figure 1-1 *ZENworks Control Center*
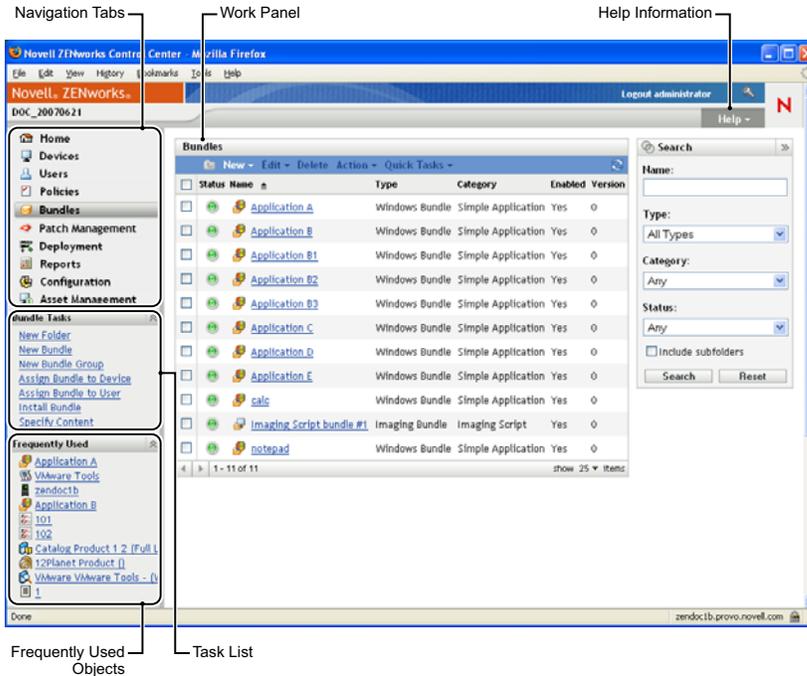
Navigation Tabs: The tabs in the left pane let you navigate among the functional areas of ZENworks. For example, the Servers page shown above lets you manage tasks associated with servers.

Task List: The task list in the left pane provides quick access to the most commonly performed tasks for the current page. The task list changes for each page.

Frequently Used Objects: The Frequently Used list in the left pane displays the 10 objects that you have accessed most often, from most used to least used. Clicking an object takes you directly to the details page for the object.

Work Panel: The work panels are where you monitor and manage your ZENworks system. The panels change depending on the current page. In the above example, there are two work panels: Devices and Search. The Devices panel lists the servers, folders, server groups, and dynamic server groups that have been created; you use this panel to manage the servers. The Search panel lets you filter the Devices panel based on criteria such as a device's name, operating system, or status.

Help Information: The *Help* button links to Help topics that provide information about the current page. The *Help* button links change depending on the current page.

1.4 Changing the Default Login Disable Values

By default, an administrator's account is disabled for 60 seconds after he or she unsuccessfully attempts to log in three times. You can change the number of login tries and the timeout length by editing a configuration file. The changes are only applied to the instance of ZENworks Control Center being run from the server where you open and modify the configuration file. To make the change applicable to all ZENworks Primary Servers, you must make the same change in each server's copy of this file.

IMPORTANT: Login attempts per administrator account are maintained in the ZENworks database, and there is only one ZENworks database per Management Zone. Therefore, if a particular administrator unsuccessfully attempts to log in to one Primary Server, that administrator is locked out of all Primary Servers in the zone. The lockout period is determined by the configuration on the server where the login attempts failed.

To modify the login tries and timeout values:

1 In a text editor, open the following file:

Windows: *installation_location*\novell\zenworks\conf\datamodel\zdm.xml

Linux: /etc/opt/novell/zenworks/datamodel/zdm.xml

2 Add the following lines to the file:

`<entry key="allowedLoginAttempts">5</entry>`

`<entry key="lockedOutTime">300</entry>`

The 5 in this example represents the number of retries before disabling login, and 300 represents the number of seconds (the default is 60 seconds, or 1 minute).

Keep in mind that the longer the delay before allowing a re-login after the configured number of failures (such as 5), the longer your authorized administrators must wait to access ZENworks Control Center.

IMPORTANT: If you enter 0 as the login attempts value, the lockout functionality is disabled, allowing unlimited attempts at logging in.

3 Save the file, then restart the zenloader and zenserver services on the Primary Server to make the changes effective.

For instructions on restarting the services, see Section 5.2.4, "Restarting the ZENworks Services," on page 70.

1.5 Changing the Timeout Value for ZENworks Control Center

By default, ZENworks Control Center has a 30-minute timeout value, so if you leave ZENworks Control Center idle on your computer for more than 30 minutes, you are prompted to log in again to continue.

The purpose of the timeout is to clear memory resources. The larger the timeout value, the longer ZENworks Control Center retains the memory resources, which might have a negative impact on the long-term performance of the device from which you have launched ZENworks Control Center, including the ZENworks Server if you have it running locally on it.

To increase or decrease the timeout value, you modify two XML files on the ZENworks Server. The change applies only to that server's ZENworks Control Center. Therefore, any devices that launch ZENworks Control Center from that server experience the same timeout value.

You can make the ZENworks Control Center timeout value different on each ZENworks Server in the Management Zone.

To change the ZENworks Control Center timeout value on a ZENworks Server:

1 On the ZENworks Server, open the `config.xml` file in a text editor.

  ◆ **Windows:** `\Novell\ZENworks\share\tomcat\webapps\zenworks\WEB-INF\config.xml`

  ◆ **Linux:** `/opt/novell/zenworks/share/tomcat/webapps/zenworks/WEB-INF/config.xml`

2 Locate the `<setting id="timeout">` entry.

3 Increase or decrease the timeout value, as needed.

   Specify the timeout value in minutes.

4 Save the `config.xml` file.

5 Open the `custom-config.xml` file in a text editor.

   This file allows you to maintain customizations of ZENworks Control Center because information contained in this file overrides any corresponding information in the `config.xml` file. Therefore, changes made in this file are not lost when the `config.xml` file is overwritten during software updates or upgrades.

   The `custom-config.xml` file is located in the same directory as the `config.xml` file:

  ◆ **Windows:** `\Novell\ZENworks\share\tomcat\webapps\zenworks\WEB-INF\custom-config.xml`

  ◆ **Linux:** `/opt/novell/zenworks/share/tomcat/webapps/zenworks/WEB-INF/custom-config.xml`

6 Locate the `<setting id="timeout">` entry.

7 Set the timeout value to the same number as you entered in the `config.xml` file.

8 Remove the comments surrounding the `<setting id="timeout">` entry (`<!--` and `-->`).

9 Save the `custom-config.xml` file.

10 Restart the ZENworks Server by restarting the zen-server service.

   For instructions, see Chapter 5, "ZENworks Server," on page 65.

1.6 Using the Config.xml File to Modify ZENworks Control Center Settings

In addition to enabling you to configure the timeout value for the ZENworks Control Center (see Section 1.5, "Changing the Timeout Value for ZENworks Control Center," on page 22), the `config.xml` file lets you control several additional configuration settings. However, with the exception of the timeout value, you should not need to modify the `config.xml` settings.

1 On the ZENworks Server, open the `config.xml` file in a text editor.

  ◆ **Windows server path:** `\Novell\ZENworks\share\tomcat\webapps\zenworks\WEB-INF\config.xml`

◆ **Linux server path:** `opt/novell/zenworks/share/tomcat/webapps/zenworks/WEB-INF/config.xml`

2 Modify the desired setting. All settings begin with `<setting id=`.

timeout: Specify the timeout value in minutes. The larger the timeout value, the longer ZENworks Control Center retains the memory resources, which might have a negative impact on the long-term performance of the device where you have launched ZENworks Control Center. If you change this value, you must also change the timeout entry in the `custom-config.xml` file. See Section 1.5, "Changing the Timeout Value for ZENworks Control Center," on page 22).

debug.enabled: Change the value to *false* if you do not want any messages written to the ZENworks Control Center log files. The default value, *true*, causes messages to be written to the log files.

debug.tags: These settings control debug information. You should not change them unless instructed by Novell Support.

debug.log.viewstate: This setting controls debug information. You should not change it unless instructed by Novell Support.

hideGettingStarted: Suppresses the Getting Started page. This setting is not functional at this time. To manually suppress the page, open the ZENworks Control Center, display the Getting Started page, then select *Do not show me this again*.

noQuickTaskAutoRefresh: This setting disables automatic refreshing of the QuickTask status dialog box. It is used to discover issues with QuickTask status updates. You should not change this setting unless instructed by Novell Support.

3 Save the `config.xml` file.

4 Restart the ZENworks Server by restarting the zen-server service. See Chapter 5, "ZENworks Server," on page 65 for instructions.

1.7 Bookmarking ZENworks Control Center Locations

The Bookmark feature allows you to use your Web browser to manage direct access to the various locations in ZENworks Control Center, instead of performing the usual navigation clicks. You can also use this feature to bookmark hard-to-find locations.

You can create bookmarks for your Web browser to locations within the following sections of ZENworks Control Center:

◆ *Managed* tab on the *Devices* tab

◆ *Management Zone Settings* on the *Configuration* tab

The locations you can bookmark include such items as lists, details of objects, and configuration settings.

Wherever the Link icon (⛓ ▾) is displayed, you can create a bookmark. The icon is located in the upper right of the page. If it is not displayed, a bookmark cannot be created for that location.

If you are logged in to ZENworks Control Center when you click a bookmark, the location is immediately displayed.

If you are not logged in to ZCC when you click a bookmark, the Login dialog box is displayed. After you enter valid credentials, the location is immediately displayed.

To create bookmarks:

1 In ZENworks Control Center, navigate to a location where you want to create a bookmark.

2 Click ⊟⊟ ▼.

This opens the following dialog box, where the URL to the current location is already selected:
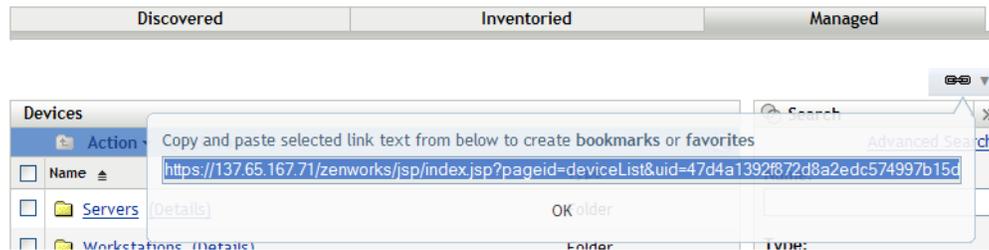
3 Press Ctrl+C to copy the URL, then click *OK* to close the dialog box.

4 Paste the URL as a new bookmark in your Web browser.

1.8 Troubleshooting ZENworks Control Center

- ◆ "An HTTP request is not redirected to HTTPS if IIS is running on the Primary Server" on page 25
- ◆ "ZENworks Control Center throws a java.lang.NoClassDefFoundError Exception" on page 25
- ◆ "Opening links in a new tab or new window of ZENworks Control Center might fail to display the page" on page 26

An HTTP request is not redirected to HTTPS if IIS is running on the Primary Server

Source: ZENworks 10 Configuration Management; ZENworks Control Center.

Explanation: During installation, the setup checks to see if the default HTTP port (80) and HTTPS port (443) are in use. If the ports are in use by another application (such as IIS), you are prompted to use alternative ports. In this case, you must access ZENworks Control Center via the port it is using and not access IIS.

Action: Although http://*Primary_Server_IP_address* works if ZENworks Control Center is using port 80, http://*Primary_Server_IP_address*:### (where ### is the port Tomcat is using) always works.

ZENworks Control Center throws a java.lang.NoClassDefFoundError Exception

Source: ZENworks 11; ZENworks Control Center.

Explanation: When you use ZENworks Control Center to perform an operation, you might encounter a `java.lang.NoClassDefFoundError` exception.

Action: Restart the Novell ZENworks Server service:

On Windows: Do the following:

1. On the Windows desktop, click *Start > Settings > Control Panel*.

2. Double-click *Administrative Tools* > *Services*.

3. Restart *Novell ZENworks Server*.

On Linux: At the console prompt, enter `/etc/init.d/novell-zenserver restart`.

Opening links in a new tab or new window of ZENworks Control Center might fail to display the page

Source: ZENworks 11; ZENworks Control Center.

Explanation: While browsing ZENworks Control Center, if you choose to open a link in a new tab or a new window, the page might fail to display.

Action: Open the link in the same window.

Administrators 2

During installation, a default ZENworks administrator account (named Administrator) is created. This account, called a Super Administrator account, provides full administrative rights to the Management Zone.

Typically, you should create administrator accounts for each person who will perform administrative tasks. You can define these accounts as Super Administrator accounts, or you can define them as administrator accounts with restricted rights. For example, you could give a user an administrator account that only enables him or her to discover and register devices in the Management Zone. limit the user to performing asset management tasks such as contract, license, and document management.

IMPORTANT: In addition to the default Administrator account, you should make sure that you have at least one other Super Administrator account. This provides redundancy in case the password for the Administrator account is forgotten or lost. For information on how to create a Super Administrator account, see Section 2.2.1, "Assigning Super Administrator Rights," on page 30. If you need any further help, contact Novell Support (http://www.novell.com/support).

In some cases, you might have multiple administrator accounts that require the same administrative rights. Rather than assign rights to each account individually, you can create an administrator role, assign the administrative rights to the role, and then add the accounts to the role. For example, you might have a Help Desk role that provides administrative rights required by several of your administrators.

You can use ZENworks Control Center (ZCC) or the zman command line utility to create and modify administrator accounts and assign roles. The following procedures explain how to perform these tasks by using ZCC. If you prefer the zman command line utility, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

- Section 2.1, "Managing Administrator Accounts," on page 27
- Section 2.2, "Managing Administrator Rights," on page 30
- Section 2.3, "Rights Descriptions," on page 31
- Section 2.4, "Managing Administrator Roles," on page 39

2.1 Managing Administrator Accounts

The following sections help you create and manage administrator accounts:

- Section 2.1.1, "Creating Administrators," on page 28
- Section 2.1.2, "Deleting Administrators," on page 29
- Section 2.1.3, "Renaming Administrators," on page 29
- Section 2.1.4, "Changing Administrator Passwords," on page 29

2.1.1 Creating Administrators

To create an administrator account:

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

2 In the Administrators panel, click *New* to display the Add New Administrator dialog box.

The Add New Administrator dialog box lets you create a new administrator account by providing a name and password, or you can create a new administrator based on an existing user in the user source. Optionally, you can give the new administrator the same rights that the logged-in administrator has.

3 Fill in the fields:

Create a New Administrator by Providing Name, Password: Select this option if you want to create a new administrator account by manually specifying the name and password.

Administrator login names with Unicode characters are case-sensitive. Make sure that you use the correct case for each character in the login name when it contains Unicode characters.

The new administrator can change the password the first time he or she logs in by clicking the key icon located next to the *Logout* link in the upper right corner of ZENworks Control Center.

Based on User(s) in a User Source: Select this option if you want to create a new administrator account based on information from your user source. To do so, click *Add*, then browse for and select the user you want.

The newly created administrator account is granted View rights to all objects in the Management Zone. To grant additional rights, or to limit the administrator's rights to specific folders only, you need to modify the rights.

Give this Administrator the Same Rights as I Have: Select this option if you want to assign the new administrator the same rights that you have as the currently-logged in administrator.

4 When you have finished filling in the fields, click *OK* to add the new administrator.

You can also use the `admin-create` command in zman to create an administrator account. For more information, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2.1.2 Deleting Administrators

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

2 In the Administrators panel, select the check box next to the administrator's name, then click *Delete*.

You can also use the `admin-delete` command in zman to delete an administrator account. For more information, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2.1.3 Renaming Administrators

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

2 In the Administrators panel, select the check box next to the administrator's name, click *Edit*, then click *Rename*.

3 Specify the new name, then click *OK*.

You can also use the `admin-rename` command in zman to rename an administrator account. For more information, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2.1.4 Changing Administrator Passwords

To change the password for any administrator account other than the default Administrator account:

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

2 In the Administrators panel, select the check box next to the administrator, click *Edit*, then click *Set Password* to display the Change Administrator Password Dialog box.

3 Fill in the fields, then click *OK*.

To change the password for the currently logged-in administrator:

1 In ZENworks Control Center, click the 🔍 icon located next to the *Logout Administrator* option in the top right corner.

The Change Administrator Password dialog box is displayed.

2 Fill in the fields, then click *OK*.

To change the password for the default Administrator account:

1 Log in using the Administrator account.

2 Click the 🔍 icon located next to the *Logout Administrator* option in the top right corner.

The Change Administrator Password dialog box is displayed.

3 Fill in the fields, then click *OK*.

2.2 Managing Administrator Rights

The following sections help you manage existing administrator accounts and their assigned rights:

- ◆ Section 2.2.1, "Assigning Super Administrator Rights," on page 30
- ◆ Section 2.2.2, "Assigning Additional Rights," on page 30
- ◆ Section 2.2.3, "Modifying Assigned Rights," on page 31
- ◆ Section 2.2.4, "Removing Assigned Rights," on page 31

2.2.1 Assigning Super Administrator Rights

A Super Administrator has all rights to perform all actions in ZENworks Control Center. For more information about all of the rights that a Super Administrator has, see Section 2.3, "Rights Descriptions," on page 31. If you grant an administrator Super Administrator rights, any assigned rights that have been allowed, denied, or not set are overridden.

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

2 In the Administrators panel, click the administrator's name.

3 Select the *Super Administrator* check box.

4 Click *Apply*.

2.2.2 Assigning Additional Rights

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

2 Click the administrator in the *Name* column of the Administrators panel.

3 In the Assigned Roles panel, click *Add*, then select the rights you want to assign.

4 Fill in the fields.

For more information, see Section 2.3, "Rights Descriptions," on page 31.

5 Click *OK*.

You can also use the `admin-rights-set` command in zman to assign additional rights for an administrator account. For more information, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2.2.3 Modifying Assigned Rights

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

2 Click the administrator in the *Name* column of the Administrators panel.

3 In the Assigned Rights panel, select the check box next to the assigned right.

4 Click *Edit*, then modify the settings.

For more information, see Section 2.3, "Rights Descriptions," on page 31.

5 Click *OK*.

2.2.4 Removing Assigned Rights

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

2 Click the administrator in the *Name* column of the Administrators pane.

3 Select the check box next to the assigned right.

4 Click *Delete*.

You can also use the `admin-rights-delete` command in zman to delete assigned rights for an administrator account. For more information, see "Administrator Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2.3 Rights Descriptions

When you create additional administrator accounts you can provide full access to your zone or you can create accounts with limited rights. For example, you could create an administrator account that allows access to all management tasks except those pertaining to Management Zone configuration (user sources, registration, configuration settings, and so forth). For information about creating additional administrators, see "Creating Administrators" on page 28.

For Administrator roles only, a third column of rights options is added to each rights assignment dialog box: *Unset*, which allows rights set elsewhere in ZENworks to be used for the role.

The most restrictive right set in ZENworks prevails. Therefore, if you select the *Deny* option, the right is denied for any administrator assigned to that role, even if the administrator is granted that right elsewhere in ZENworks.

If you select the *Allow* option and the right has not been denied elsewhere in ZENworks, the administrator has that right for the role.

If you select the *Unset* option, the administrator is not granted the right for the role unless it is granted elsewhere in ZENworks.

You can also add, modify, or remove the assigned rights for an existing administrator. For more information, see Section 2.2.2, "Assigning Additional Rights," on page 30, Section 2.2.3, "Modifying Assigned Rights," on page 31, or Section 2.2.4, "Removing Assigned Rights," on page 31.

The following sections contain additional information about the various rights that you can assign:

- Section 2.3.1, "Administrator Rights," on page 32
- Section 2.3.2, "Contract Management Rights," on page 32

2.3.1 Administrator Rights

The Administrator Rights dialog box lets you allow the selected administrator to grant rights to other administrators and to create or delete administrator accounts for your Management Zone.

The following rights are available:

- **Grant Rights:** Allow or deny the administrator the rights necessary to grant rights to other administrators.
- **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete administrator accounts.

To grant any object rights to other administrators, an administrator must have the Grant Rights and the rights for that object. For example, to grant bundle rights to other administrators, an administrator must have both the Grant Rights and the Bundle Rights.

2.3.2 Contract Management Rights

The Contract Management Rights dialog box lets you select folders containing contracts, then modify the rights associated with contracts and folders.

- "Contexts" on page 32
- "Privileges" on page 33

Contexts

To select the folder that contains the contracts for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The *Privileges* section lets you grant the selected administrator rights to contracts and folders listed in the Contexts section.

- **Modify:** Allow or deny the administrator the rights necessary to modify the contracts.
- **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete contracts.
- **Modify Folder:** Allow or deny the administrator the rights necessary to modify folders.
- **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.

2.3.3 Credential Rights

The Credential Rights dialog box lets you select folders containing credentials, then modify the rights associated with those folders.

- "Contexts" on page 33
- "Privileges" on page 33

Contexts

Click *Add* to select the folder that contains the credentials for which you want to assign rights.

Privileges

The Privileges section lets you grant the selected administrator rights to create or modify credentials, groups, and folders listed in the Contexts section.

The following rights are available:

- **Modify:** Allow or deny the administrator the rights necessary to modify credentials.
- **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete credentials.
- **Modify Folders:** Allow or deny the administrator the rights necessary to modify folders.
- **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.

For more information about the tasks you can perform on credentials, see Chapter 4, "Credential Vault," on page 59.

2.3.4 Deployment Rights

The Deployment Rights dialog box lets you allow or deny the administrator the rights necessary to perform deployment operations.

Deployment lets you discover network devices and deploy the ZENworks Adaptive Agent to them so that they become managed devices in your Management Zone. For more information, see "ZENworks Adaptive Agent Deployment" in the *ZENworks 1 Discovery, Deployment, and Retirement ReferenceZENworks 1 Discovery, Deployment, and Retirement Reference*.

2.3.5 Device Rights

The Device Rights dialog box lets you select folders containing devices, then modify the rights associated with those folders.

- ◆ "Contexts" on page 34
- ◆ "Privileges" on page 34

Contexts

To select the folder that contains the devices for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The *Privileges* section lets you grant the selected administrator rights to work with devices, including device groups and folders listed in the Contexts section.

The following rights are available:

- ◆ **Modify:** Allow or deny the administrator the rights necessary to modify the device objects.
- ◆ **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete device objects.
- ◆ **Modify Groups:** Allow or deny the administrator the rights necessary to modify groups.
- ◆ **Create/Delete Groups:** Allow or deny the administrator the rights necessary to create or delete groups.
- ◆ **Modify Group Membership:** Allow or deny the administrator the rights necessary to modify the list of devices contained in device groups.
- ◆ **Modify Folder:** Allow or deny the administrator the rights necessary to modify folders.
- ◆ **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.
- ◆ **Modify Settings:** Allow or deny the administrator the rights necessary to modify device settings.

2.3.6 Discovery Rights

The Discovery Rights dialog box lets you allow or deny the administrator the rights necessary to perform discovery operations.

The following rights are available:

- ◆ **Discovery:** Allow or deny the administrator the right necessary to perform discovery.
- ◆ **Edit Discovered Device:** Allow or deny the administrator the rights necessary to edit a discovered device.

2.3.7 Document Rights

The Document Rights dialog box lets you select folders containing documents, then modify the rights associated with documents and folders.

- "Contexts" on page 35
- "Privileges" on page 35

Contexts

To select the folder that contains the documents for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The *Privileges* section lets you grant the selected administrator rights to create or modify documents and their folders listed in the Contexts section.

- **Modify:** Allow or deny the administrator the rights necessary to reassign documents.
- **Create/Delete:** Allow or deny the administrator the rights necessary to import or delete documents.
- **Modify Folder:** Allow or deny the administrator the rights necessary to modify folders.
- **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.

2.3.8 Inventoried Device Rights

The Inventoried Device Rights dialog box lets you select folders containing devices, then modify the rights associated with those folders.

- "Contexts" on page 35
- "Privileges" on page 35

Contexts

To select the folder that contains the inventoried devices for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The *Privileges* section lets you grant the selected administrator rights to work with inventoried devices, including device groups and folders listed in the Contexts section.

The following rights are available:

- **Modify:** Allow or deny the administrator the rights necessary to modify inventoried device objects.
- **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete inventoried device objects.

- **Modify Groups:** Allow or deny the administrator the rights necessary to modify device groups.
- **Create/Delete Groups:** Allow or deny the administrator the rights necessary to create or delete device groups.
- **Modify Group Membership:** Allow or deny the administrator the rights necessary to modify the list of devices contained in device groups.
- **Modify Folder:** Allow or deny the administrator the rights necessary to modify folders.
- **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.
- **Modify Settings:** Allow or deny the administrator the rights necessary to modify inventoried device settings.

2.3.9 LDAP Import Rights

The LDAP Import Rights dialog box lets you allow or deny importing of LDAP information.

2.3.10 License Management Rights

The License Management Rights dialog box lets you select folders containing licenses, then modify the rights associated with licenses and folders.

- "Contexts" on page 36
- "Privileges" on page 36

Contexts

To select the folder that contains the licenses for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The Privileges section lets you grant the administrator rights to work with the software license components associated with the contexts (folders) you selected in the Contexts section

- **Modify:** Allow or deny the administrator the rights necessary to modify the licenses.
- **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete licenses.
- **Modify Folder:** Allow or deny the administrator the rights necessary to modify folders.
- **Create/Delete Folders:** Allow or deny the administrator the rights necessary to create or delete folders.

2.3.11 Quick Task Rights

The Quick Tasks Rights dialog box lets you select folders containing devices, then modify the Quick Task rights associated with those folders.

Quick Tasks are tasks that appear in ZENworks Control Center task lists (for example, Server Tasks, Workstation Tasks, and so forth). When you click a task, either a wizard launches to step you through the task or a dialog box appears in which you enter information to complete the task.

You can use the Quick Tasks Rights dialog box to allow or deny the selected administrator the rights to perform certain tasks by using Quick Tasks.

-
-

Contexts

To select the folder that contains the device for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The *Privileges* section lets you grant the administrator rights to modify the Quick Task rights associated with the contexts (folders) you selected in the Contexts section.

The following rights are available:

- **Shutdown/Reboot/Wake Up Devices:** Specify whether the administrator can shut down, reboot, or wake up the devices in the folders you selected in the list.
- **Execute Processes:** Allow or deny the administrator the rights necessary to execute processes on the devices.
- **Refresh ZENworks Adaptive Agent:** Allow or deny the administrator the rights necessary to refresh the ZENworks Adaptive Agent on devices.
- **Inventory:** Allow or deny the administrator the rights necessary to inventory devices.

2.3.12 Reporting Rights

The Reporting Rights dialog box lets you allow or deny the administrator the rights to create, delete, execute, or publish reports.

2.3.13 User Rights

The User Rights dialog box lets you select folders containing users, then modify the rights associated with those folders.

-
-

Contexts

To select the folder that contains the users for which you want to assign rights, click *Add* to display the Contexts dialog box, then browse for and select the folders for which you want to assign rights.

Privileges

The Privileges section lets you grant the selected administrator rights to work with users and folders listed in the Contexts section.

The following rights are available:

 * **Modify ZENworks Group Membership:** Allow or deny the rights necessary to modify ZENworks group membership. If you select this option, you must also grant rights to *Modify ZENworks Group Membership* under *ZENworks User Group Rights*.

2.3.14 ZENworks User Group Rights

The ZENworks User Group Rights dialog box lets you allow or deny the administrator the rights to create, delete, or modify groups and to modify group membership.

The following rights are available:

 * **Modify Groups:** Allow or deny the administrator the rights necessary to modify existing user groups.
 * **Create/Delete Groups:** Allow or deny the administrator the rights necessary to create or delete user groups.
 * **Modify ZENworks Group Membership:** Allow or deny the administrator the rights necessary to modify the ZENworks group membership. If you select this option, you must also grant rights to *Modify ZENworks Group Membership* under *User Rights*.

2.3.15 Zone Rights

The Zone Rights dialog box lets you modify the administrator's rights to administer settings in your ZENworks Management Zone.

The following rights are available:

 * **Modify User Sources:** Allow or deny the administrator the rights necessary to modify user sources.

   A user source is an LDAP directory that contains users that you want to reference in your ZENworks Management Zone. When you define a user source, you also define the source containers from which you want to read users and user groups.
 * **Create/Delete User Sources:** Allow or deny the administrator the rights necessary to create or delete user sources.
 * **Modify Settings:** Allow or deny the administrator the rights necessary to modify your Management Zone settings.

   The Management Zone settings let you manage the global configuration settings for your Management Zone. These global configuration settings are inherited by other objects (devices, users, and folders) within your Management Zone and remain in effect unless they are overridden on those objects.
 * **Modify Zone Infrastructure:** Allow or deny the administrator the rights necessary to modify Zone infrastructure. This right includes the rights to perform the following actions in the Server Hierarchy section of the *Configuration* tab:
    * Specify content for a device

- Move the device in the hierarchy
- Configure a Satellite
- Add a Satellite
- Remove a Satellite

Other actions can be taken in the Server Hierarchy section. However, rights for those actions must be specified individually. They are not automatically included in the Modify Zone Infrastructure right. These are:

- Delete ZENworks Server
- Refresh Device

- **Configure Registration:** Allow or deny the administrator the rights necessary to configure device registration.

  Registration lets you manage the various configuration settings for registering devices as managed devices in the Management Zone. It also lets you create registration keys or registration rules to help you register devices. A registration key lets you apply group and folder assignments to devices as they register. A registration rule lets you apply group and folder assignments to folders if the device meets the rule criteria.

- **Delete News Alerts:** Allow or deny the administrator the rights necessary to delete the news alerts.

- **Update News Alerts:** Allow or deny the administrator the rights necessary to update the news alerts.

2.4 Managing Administrator Roles

Perform the following tasks to manage administrator roles in the Management Zone:

- Section 2.4.1, "Understanding Administrator Roles," on page 39
- Section 2.4.2, "Creating a Role," on page 42
- Section 2.4.3, "Assigning Roles," on page 44
- Section 2.4.4, "Editing a Role," on page 48
- Section 2.4.5, "Renaming a Role," on page 51
- Section 2.4.6, "Deleting a Role," on page 51

2.4.1 Understanding Administrator Roles

The roles feature allows you to specify rights that can be assigned as roles for ZENworks administrators. You can create a specialized role, then assign administrators to that role to allow or deny them the ZENworks Control Center rights that you specify for that role. For example, you could create a Help Desk role with the ZENworks Control Center rights that you want help desk operators to have.

The following sections explain the different locations in ZENworks Control Center where you can manage roles:

- "Roles Panel" on page 40
- "Role Settings Page" on page 41
- "Administrator Settings Page" on page 42

Roles Panel

The Roles panel displays the following information:

Figure 2-1 *Roles Panel*

- ◆ **Name:** You specified this when you created the role. You can rename the role here. You can also click a role name to edit its rights configuration.

- ◆ **Types:** Lists each ZENworks Control Center rights type that is configured for the role.

- ◆ **Allow:** For each type listed, abbreviations are displayed to indicate the rights that are allowed for that role.

- ◆ **Deny:** For each type listed, abbreviations are displayed to indicate the rights that are denied for that role.

If a right is configured as *Unset*, its abbreviation is not listed in either the *Allow* or *Deny* column.

In the Roles panel, you can add, assign, edit, rename, and delete a role.

Role Settings Page

If you click a role in the *Name* column on the Roles panel, the Role Settings page is displayed with the following information:

Figure 2-2 *Role Settings Page*

- ◆ **General panel:** Displays the ZENworks Control Center object type (Role), its GUID, and a description that you can edit here.

- ◆ **Rights panel:** Displays the ZENworks Control Center rights configured for the role. You can add, edit, and delete the rights in this panel.

- ◆ **Assigned Administrators panel:** Lists the administrators assigned to this role. You can add, edit, or delete the administrators in this panel.

Administrator Settings Page

If you click an administrator in the *Administrator* column on the Roles Settings page, the Administrator Settings page is displayed with the following information:

Figure 2-3 *Administrator Settings Page*

- ◆ **General panel:** Displays the administrator's full name and provides the option to specify the administrator as a Super Administrator, which grants all ZENworks Control Center rights to that administrator, regardless of what is configured for the role.

- ◆ **Rights panel:** Lists the rights that are assigned to the administrator, independent of rights granted or denied by any roles assigned to the administrator. The rights listed in this panel override any rights assigned by a role. You can add, edit, and delete rights in this panel.

- ◆ **Assigned Roles panel:** Lists the roles assigned to this administrator. You can add, edit, and delete roles in this panel.

2.4.2 Creating a Role

A role can include one or more rights types. You can configure as many roles as you need. To configure the role's function:

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Roles panel, click *New* to open the Add New Role dialog box:

Add new Role

Name:

[   ] *

Description:

[   ]
[   ]
[   ]

Rights

Add ▾ Edit Delete

☐ Type   Allow   Deny

No items available.

Fields marked with an asterisk are required.

[OK]   [Cancel]
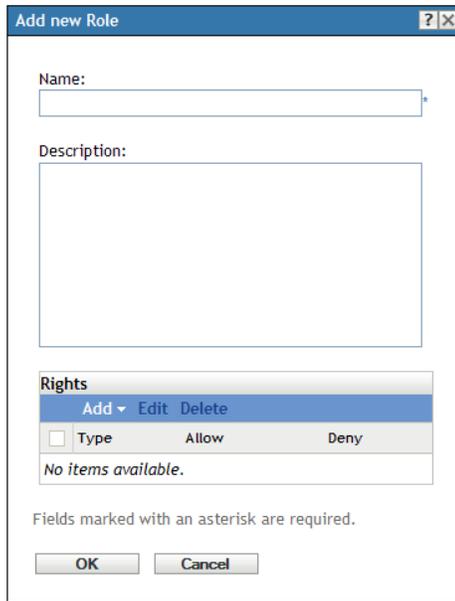
2 Specify a name and description for the role.

3 To configure the rights for the role, click *Add* and select a rights type from the drop-down list:

Rights

Add ▾ Edit Delete

☐ T   Deny

No it| Administrator Rights
      | Bundle Rights
Fields| Contract Management Rights   required.
      | Credential Rights
      | Device Rights
      | Document Rights
      | Inventoried Device Rights
      | License Management Rights
      | Policy Rights
      | Quick Task Rights
      | Remote Management Rights
      | Reporting Rights
      | User Rights
      | ZENworks User Group Rights
      | Zone Rights
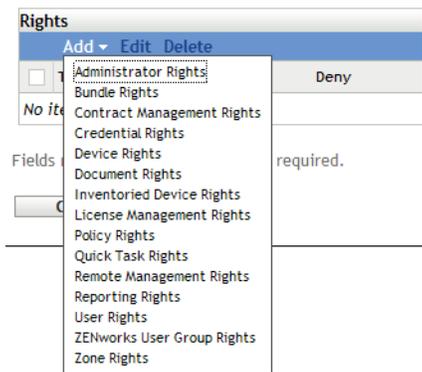
4 In the following dialog box, select whether each privilege should be allowed, denied, or left unset.
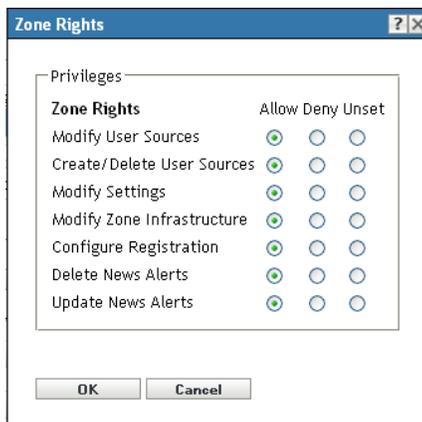
Zone Rights

┌─ Privileges ──────────────────────────────┐
│ **Zone Rights**   Allow Deny Unset │
│ Modify User Sources   ◉   ○   ○   │
│ Create/Delete User Sources   ◉   ○   ○   │
│ Modify Settings   ◉   ○   ○   │
│ Modify Zone Infrastructure   ◉   ○   ○   │
│ Configure Registration   ◉   ○   ○   │
│ Delete News Alerts   ◉   ○   ○   │
│ Update News Alerts   ◉   ○   ○   │
└──┘

[OK]   [Cancel]

The most restrictive right set in ZENworks prevails. If you select the *Deny* option, the right is denied for any administrator assigned to that role, even if the administrator is granted that right elsewhere in ZENworks.

If you select the *Allow* option and the right has not been denied elsewhere in ZENworks, the administrator has that right for the role.

If you select the *Unset* option, the administrator is not granted the right for the role unless it is granted elsewhere in ZENworks.

5 Click *OK* to continue.

6 To add another rights type to the role, repeat Step 3 through Step 5.

7 Click *OK* to exit the Add New Role dialog box.

The role is now displayed in the Roles panel. To assign it to administrators, see Section 2.4.3, "Assigning Roles," on page 44.

2.4.3 Assigning Roles

You can assign roles to administrators, or administrators to roles:

- "Assigning Roles to Administrators" on page 44
- "Assigning Administrators to Roles" on page 46

Assigning Roles to Administrators

Rights can be set in multiple locations in ZENworks Control Center, including for administrators. Administrators can be assigned to multiple roles.

If an administrator has rights conflicts because different conditions are set for a particular right in ZENworks Control Center, the *Deny* option is used if it is set anywhere for the administrator. In other words, *Deny* always supersedes *Allow* when there are rights conflicts.

To assign roles to an administrator:

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Administrators panel, click an administrator name in the *Name* column to open the administrator's settings page:

Configuration > Admin1

General   ≫

Administrator Full Name: | Administrator One |

☐ Super Administrator

Note: If the Super Administrator check box is checked, then this Administrator is a Super Administrator with all rights.
This will override any assigned rights that may be allowed, denied, or not set.

Assigned Rights   ≫

Add ▾ Edit Delete

☐ | Type | Context | Rights

No items available.
Note: Every admin receives view rights and they are not removable.

Assigned Roles   ≫

Add Edit Delete

☐ | Role | Type | Context
☐ | Bundles Role | Administrator Rights | Zone
  | | Bundle Rights | /Bundles

◁ ▷ | 1 - 1 of 1   show 5 ▾ items

[Apply]   [Reset]

2 In the Assigned Roles panel, click *Add* to display the Select Role dialog box.

Select Role   ? ✕

Select a role

Look in:
| /Roles   ▾ | ⬆

Name filter: Items of type:
| * | 🔍 | All Types   ▾ |

Name   **Type**
▤ Asset Management Role   Role
▤ User Management Role   Role

◁ ▷ | 1 - 2 of 2   show 25 ▾ items

[OK]   [Cancel]

3 Browse for and select the roles for the administrator, then click *OK* to display the Add Role Assignment dialog box:

The Add Role Assignment dialog box is displayed so that you can define the contexts for the role types included in the role. A context allows you to limit where granted rights can be used. For example, you can specify that the administrator's Quick Task Rights role is limited to the Devices folder in ZENworks Control Center.

Contexts are not required. However, if you do not specify a context, the right is not granted because it has no information about where it can be applied.

Rights that are global automatically display Zone as the context.

4 If necessary, assign contexts to role types where they are missing:

    4a In the *Types* column, click a role type.

        Role types that are designated with the Zone context are not clickable because they are generally available.

    4b In the subsequent Select Context dialog box, click *Add* and browse for a ZENworks Control Center context.

        While browsing, you can select multiple contexts in the Browse dialog box.

    4c When you are finished selecting the contexts for a particular role, click *OK* to close the Select Contexts dialog box.

    4d Repeat Step 4a through Step 4c as necessary to assign contexts to the roles.

    4e When you are finished, click *OK* to close the Add Role Assignment dialog box.

5 To add another administrator, repeat Step 2 and Step 4.

6 Click *Apply* to save the changes.

Assigning Administrators to Roles

Rights can be set in multiple locations in ZENworks Control Center. Administrators can be assigned to multiple roles.

If an administrator has rights conflicts because different conditions are set for a particular right in ZENworks Control Center, the *Deny* option is used if it is set anywhere for the administrator. In other words, *Deny* always supersedes *Allow* when there are rights conflicts.

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Roles panel, click a role name in the *Name* column to open the role's settings page:

Configuration > Bundles Role

General

Object type:	Role
GUID:	f4ccf0bcf5b8ab9007540f078572101e
Description:	Role to restrict rights to Bundles.

Rights

Add ▾ Edit Delete

	Type	Allow	Deny
☐	Administrator Rights	GR CD	
☐	Bundle Rights	M CD MG CDG MF CDF	MGM

◁ ▷ 1 - 2 of 2   show 5 ▾ items

Assigned Administrators

Add Edit Delete

	Administrator	Type	Context
☐	Admin1	Administrator Rights Bundle Rights	Zone /Bundles

◁ ▷ 1 - 1 of 1   show 5 ▾ items

[Apply]   [Reset]

2 In the Assigned Administrators panel, click *Add* to display the Select Administrator dialog box:

Select Administrator   ? ✕

Select an administrator

Look in:

/Administrators   ▾ ⬆

Name filter: Items of type:

*| All Types   ▾

Name	Type
👤 Admin1	Administrator
👤 Admin2	Administrator

◁ ▷ 1 - 2 of 2   show 25 ▾ items

[OK]   [Cancel]

3 Browse for and select the administrators for the role, then click *OK* to display the Add Role Assignment dialog box:

The Add Role Assignment dialog box is displayed so that you can define the contexts for the role types included in the role. A context allows you to limit where granted rights can be used. For example, you can specify that the administrator's Quick Task Rights role is limited to the Devices folder in ZENworks Control Center.

Contexts are not required. However, if you do not specify a context, the right is not granted because it has no information about where it can be applied.

Rights that are global automatically display `Zone` as the context.

4 If necessary, assign contexts to role types where they are missing:

4a In the *Types* column, click a role type.

Role types that are designated with the Zone context are not clickable because they are generally available.

4b In the subsequent Select Context dialog box, click *Add* and browse for a ZENworks Control Center context.

While browsing, you can select multiple contexts in the Browse dialog box.

4c When you are finished selecting the contexts for a particular role, click *OK* to close the Select Contexts dialog box.

4d Repeat Step 4a through Step 4c as necessary to assign contexts to the roles.

4e When you are finished, click *OK* to close the Add Role Assignment dialog box.

5 To add another role, repeat Step 2 and Step 4.

6 Click *Apply* to save the changes.

2.4.4 Editing a Role

You can edit a role's configuration at any time. After you apply the edited role, its changes are then effective for any assigned administrator.

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Roles panel, click *Edit* to open the Edit Role dialog box:

Edit Role ? X

Name: Bundles Role

Description:

Role to restrict rights to Bundles.

Rights

Add ▾ Edit Delete

☐	Type	Allow	Deny
☐	Administrator Rights	GR CD	
☐	Bundle Rights	M CD MG CDG MF CDF	MGM

◄ ► 1 - 2 of 2   show 20 ▾ items

Fields marked with an asterisk are required.

OK   Cancel
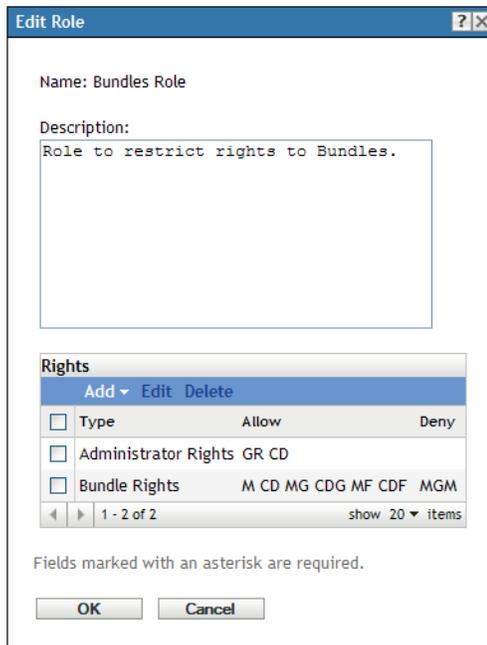
2 To edit the description, make the changes directly in the *Description* field.

3 To edit existing rights, do the following:

3a In the Rights panel, select the check box for a rights type, then click *Edit* to open the
following dialog box:

Zone Rights ? X

Privileges

Zone Rights	Allow	Deny	Unset
Modify User Sources	⊙	○	○
Create/Delete User Sources	⊙	○	○
Modify Settings	⊙	○	○
Modify Zone Infrastructure	⊙	○	○
Configure Registration	⊙	○	○
Delete News Alerts	⊙	○	○
Update News Alerts	⊙	○	○

OK   Cancel
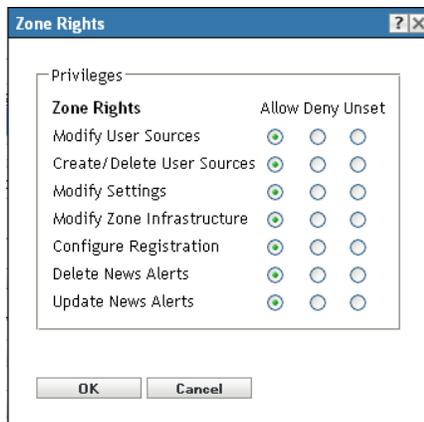
3b For each privilege, select whether it should be allowed, denied, or left unset.

The most restrictive right set in ZENworks prevails. If you select the *Deny* option, the
right is denied for any administrator assigned to that role, even if the administrator is
granted that right elsewhere in ZENworks.

If you select the *Allow* option and the right has not been denied elsewhere in ZENworks,
the administrator has that right for the role.

If you select the *Unset* option, the administrator is not granted the right for the role unless
it is granted elsewhere in ZENworks.

3c Click *OK* to continue.

3d To edit another existing role, repeat Step 3a through Step 3c.

4 (Optional) To add new rights:

4a In the Rights panel, click *Add*, then select one of the rights types from the drop-down list:
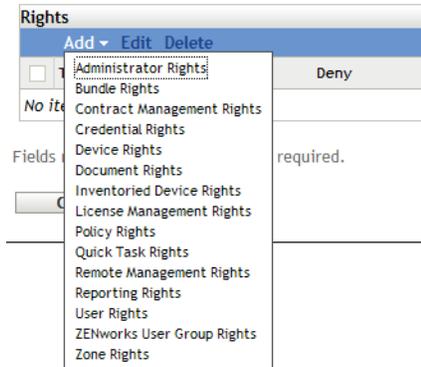
4b In the Rights dialog box, select whether each privilege should be allowed, denied, or left unset.
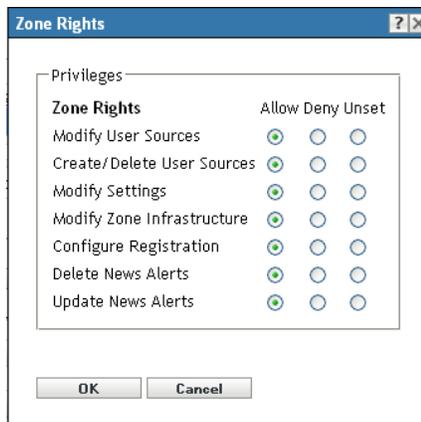
The most restrictive right set in ZENworks prevails. If you select the *Deny* option, the right is denied for any administrator assigned to that role, even if the administrator is granted that right elsewhere in ZENworks.

If you select the *Allow* option and the right has not been denied elsewhere in ZENworks, the administrator has that right for the role.

If you select the *Unset* option, the administrator is not granted the right for the role unless it is granted elsewhere in ZENworks.

4c Click *OK* to continue.

4d To add another rights type to the role, repeat Step 4a through Step 4c.

5 To exit the dialog box and save your changes to the role, click *OK*.

2.4.5 Renaming a Role

Role names can be changed at any time. The changed role name is automatically replicated wherever it is displayed in ZENworks Control Center.

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Roles panel, select the check box for the role to be renamed.

2 Click *Edit > Rename* to open the Rename Role dialog box:

3 Specify the new role name, then click *OK*.

2.4.6 Deleting a Role

When you delete a role, its rights configurations are no longer applicable to any administrator that was assigned to the role.

Deleted roles cannot be recovered. You must re-create them.

1 In ZENworks Control Center, click *Configuration* in the left pane, click the *Configuration* tab, then in the Roles panel, select the check box for the role to be deleted.

2 Click *Delete*, then confirm that you want to delete the role.

ZENworks News

<div style="text-align: right">3</div>

Novell ZENworks 10 Asset Management displays information from Novell about current top issues, news updates, promotions, and so forth on the home page of ZENworks Control Center.

The following sections provide information on deleting, updating, and sorting the news alerts, and on viewing the news. You can also configure the server and the schedule for downloading the news.

- ◆ Section 3.1, "Managing ZENworks News Alerts," on page 53
- ◆ Section 3.2, "Configuring ZENworks News Settings," on page 54

3.1 Managing ZENworks News Alerts

Figure 3-1 *ZENworks News Alerts*

Review the following sections to manage the ZENworks News Alerts:

- ◆ Section 3.1.1, "Deleting the News Alerts," on page 53
- ◆ Section 3.1.2, "Updating the News Alerts," on page 54
- ◆ Section 3.1.3, "Displaying the News Alerts Based on the Selected Category," on page 54
- ◆ Section 3.1.4, "Viewing the News," on page 54
- ◆ Section 3.1.5, "Sorting the News Alerts," on page 54

3.1.1 Deleting the News Alerts

1 In ZENworks Control Center, click *Home*.

2 In ZENworks News Alerts panel, select the check box next to the news alerts you want to delete.

3 Click *Delete*.

3.1.2 Updating the News Alerts

1 In ZENworks Control Center, click *Home*.

2 In ZENworks News Alerts panel, click *Update Now*.

The latest ZENworks news updates downloaded by the Primary Server are displayed in the ZENworks News Alerts panel. This might take some time.

3.1.3 Displaying the News Alerts Based on the Selected Category

1 In ZENworks Control Center, click *Home*.

2 In ZENworks News Alerts panel, select a category in the drop-down list next to *Show Category* to display all the news alerts based on the selected category.

3.1.4 Viewing the News

1 In ZENworks Control Center, click *Home*.

2 In ZENworks News Alerts panel, click the news alert to display the news in a new browser window.

3.1.5 Sorting the News Alerts

By default, the news alerts are sorted by the publication date. You can also sort the news alerts alphabetically by the title or category.

1 In ZENworks Control Center, click *Home*.

2 In ZENworks News Alerts panel, click *News Alert* to sort the news alerts alphabetically.

or

Click *Category* to sort the news alerts by category.

or

Click *Date* to sort the news alerts by date.

3.2 Configuring ZENworks News Settings

The ZENworks News Settings page lets you configure a dedicated news server and a schedule to download the ZENworks news. By default, the news is downloaded at midnight by the Primary Server of the Management Zone.

Figure 3-2   *News Download Schedule*

Review the following sections to configure the settings to download the news:

3.2.1 Dedicated News Server

By default, any available server in the Management Zone can be used to download the news updates. However, you can specify one ZENworks Server to be dedicated to handle the news downloads. The server that you select should have access to the Internet, either directly or through a proxy server.

The following sections contain more information:

Specifying a Dedicated News Server

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* section (if necessary), click *Infrastructure Management*, then click *ZENworks News Settings* to display the News Download Schedule panel.

3 In the *Dedicated News Server* field, browse for and select a server, then click *OK*.

   The server's identification is displayed in the *Dedicated News Server* field.

4 (Conditional) If you need to revert to the last saved dedicated server setting, click *Reset*.

   This resets the dedicated server to the last saved setting, such as when you last clicked *Apply* or *OK*.

5 Click *Apply* to make the changes effective.

6 Either click *OK* to close the page, or continue with configuring the schedule type.

   If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

Clearing a Dedicated News Server

Clearing a dedicated update server causes the news updates to be retrieved randomly from any server in the Management Zone.

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* section (if necessary), click *Infrastructure Management*, then click *ZENworks News Settings* to display the News Download Schedule panel.

3 Click ✖ to remove the dedicated server from the *Dedicated News Server* field.

4 (Conditional) If you need to revert to the last saved dedicated server setting, click *Reset*.

This resets the dedicated server to the last saved setting, such as when you last clicked *Apply* or *OK*.

5 Click *Apply* to make the change effective.

3.2.2 Schedule Type

You can configure the schedule for downloading the news:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *Configuration* tab.

2 Click *Management Zone Settings* to expand its options, click *Infrastructure Management* to expand its options, then select *ZENworks News Settings*.

3 (Conditional) To exclude scheduled checking for news updates, click the down-arrow in the *Schedule Type* field, select *No Schedule*, click *Apply* to save the schedule change, then skip to Step 6.

With this option selected, you must download the news updates manually. For more information, see "Updating the News Alerts" on page 54.

4 (Conditional) To set a recurring schedule for checking for the news updates, click the down-arrow in the *Schedule Type* field, then select *Recurring*.

5 Fill in the fields:

5a Select one or more check boxes for the days of the week when you want to check for news updates.

5b Use the *Start Time* box to specify the time of day for checking to occur.

5c (Optional) Click *More Options*, then select the following options as necessary:

◆ **Process Immediately if Device Unable to Execute on Schedule:** Causes checking for news updates to occur as soon as possible if the checking cannot be done according to schedule. For example, if a server is down at the scheduled time, checking for news updates occurs immediately after the server comes back online.

◆ **Use Coordinated Universal Time:** Causes the schedule to interpret the times you specify as UTC instead of local time.

◆ **Start at a Random Time Between Start and End Times:** Allows checking for news updates to occur at a random time between the time you specify here and the time you specified in Step 5b. Fill in the *End Time* fields.

◆ **Restrict Schedule Execution to the Following Date Range:** In addition to the other options, you can specify a date range to check for the news updates.

5d (Conditional) If you need to revert to the last saved schedule, click *Reset* at the bottom of the page.

This resets all data to the last saved state, such as when you last clicked *Apply* or *OK*.

5e When you have finished configuring the recurring schedule, click *Apply* to save the schedule change.

6 To exit this page, click *OK* when you are finished configuring the schedule.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

Credential Vault

4

The Credential Vault stores the credentials used by Novell ZENworks 10 Asset Management actions and tasks that require authentication to access a particular resource.

You can use ZENworks Control Center or the zman command line utility to manage credentials. The procedures in this section explain how to manage credentials by using ZENworks Control Center. If you prefer the zman command line utility, see "Credential Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

The following sections contain information to help you manage credentials:

- Section 4.1, "Adding a Credential," on page 59
- Section 4.2, "Creating a Folder for Credentials," on page 60
- Section 4.3, "Assigning Credential Rights," on page 61
- Section 4.4, "Editing a Credential," on page 62
- Section 4.5, "Renaming a Credential," on page 62
- Section 4.6, "Moving a Credential to Another Folder," on page 62
- Section 4.7, "Removing a Credential," on page 62

4.1 Adding a Credential

1 In ZENworks Control Center, click the *Configuration* tab.
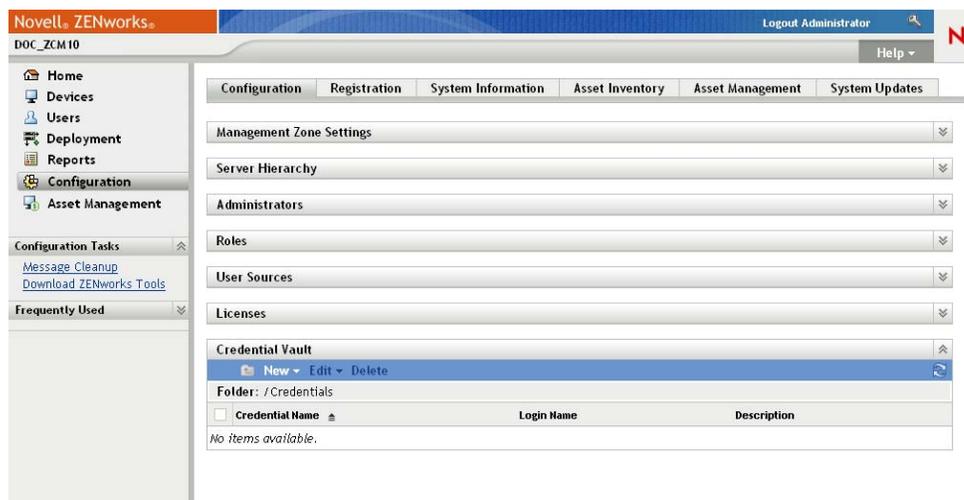
2 In the *Credential Vault* panel, click *New > Credential* to display the Add Credential dialog box.

3 Fill in the fields.

If you need help, click the *Help* button.

4.2 Creating a Folder for Credentials

1 In ZENworks Control Center, click the *Configuration* tab.
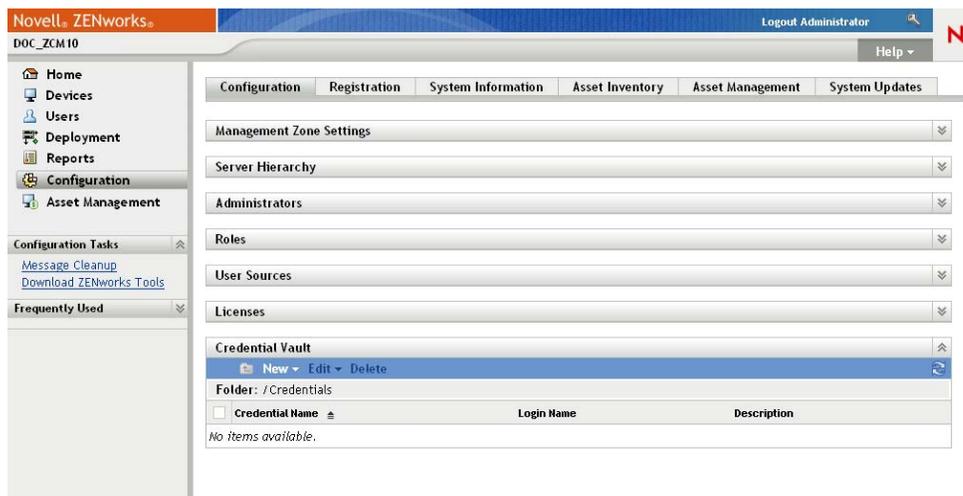
2 In the Credential Vault panel, click *New > Folder* to display the New Folder dialog box.
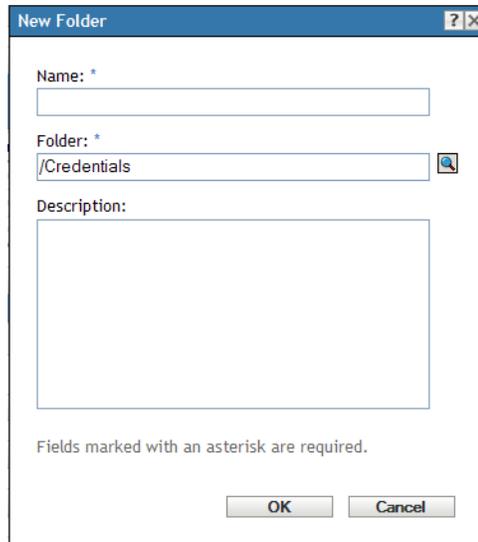
3 In the *Name* field, specify a unique name for the folder.

The folder cannot have the same name as any folders or credentials that already exist in the folder where you are creating it.

4 In the *Folder* field, click ▧ to browse for and select the folder where you want the new folder created.

5 Type a description for the new folder, if desired.

6 Click *OK* to create the folder.

4.3 Assigning Credential Rights

1 In ZENworks Control Center, click the *Configuration* tab.
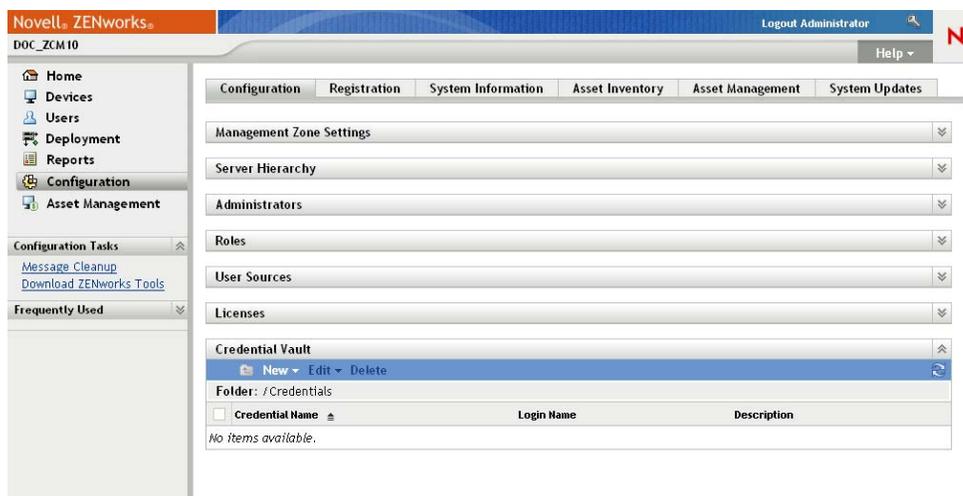
2 In the *Administrators* section, click the underlined link for the administrator for which you want to change rights.

3 In the *Assigned Rights* section, click *Add > Credential Rights*.

4 Click *Add* to select folders containing credentials, then modify the rights associated with those folders.

If you need help, click the *Help* button.

4.4 Editing a Credential

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

2 In the Credential Vault panel, select the check box next to the credential.

3 Click *Edit*.

4 Edit the fields.

If you need help, click the *Help* button.

5 Click *OK*.

4.5 Renaming a Credential

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

2 In the Credential Vault panel, select the check box next to the credential.

3 Click *Edit > Rename*.

4 Type the new name for the credential.

5 Click *OK*.

4.6 Moving a Credential to Another Folder

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

2 In the Credential Vault panel, select the check box next to the credential.

3 Click *Edit > Move*.

4 In the *Folder* field, click to browse for and select the folder where you want the credential moved.

5 Click *OK*.

4.7 Removing a Credential

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

2 In the Credential Vault panel, select the check box next to the credential.

3 Click *Delete*.

ZENworks Servers and Satellite Devices
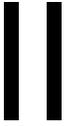
II

This section contains information about configuring the ZENworks Servers and Satellite devices.

ZENworks Server

5

The ZENworks Server is the backbone of the ZENworks system. It communicates with the ZENworks Adaptive Agent on managed devices to perform management tasks. It communicates with other ZENworks Servers and ZENworks Satellites to replicate or receive software and hardware inventory and messages throughout the Management Zone.

The following sections provide additional information about the ZENworks Server:

5.1 ZENworks Services on a Windows Server

When it is running on a Windows server, a ZENworks Server includes the services listed in the following table. All services are always installed regardless of the ZENworks 10 products (Configuration Management, Asset Management, and Patch Management) you have licensed and activated. If a service is not required for your product, it is disabled.

Table 5-1 *ZENworks Services on Windows*

Service	Service Name	Description
Proxy DHCP Service	novell-proxydhcp	Used with a standard DHCP server to inform PXE-enabled devices of the IP address of the Novell TFTP server.
TFTP Service	novell-tftp	Used by PXE-enabled devices to request files that are needed to perform imaging tasks.
ZENworks Agent Service	zenworkswindowsservice novell-zmd	Used to enable the server as a managed device.
ZENworks Datastore	dbsrv10	Embedded database used for storing ZENworks objects and resources.
ZENworks Loader	zenloader	Used for loading and controlling the Java services that perform ZENworks Server tasks.
ZENworks Preboot Policy Service	novell-zmgprebootpolicy	Used by PXE-enabled devices to check for assigned preboot policies and work.

Service	Service Name	Description
ZENworks Preboot Service	novell-pbserv	Used to provide imaging services to a device. This includes sending and receiving image files, discovering assigned Preboot bundles, acting as session master for multicast imaging, and so forth.
ZENworks Remote Management	nzrwinvnc	Used to enable remote management of the server.
ZENworks Server	zenserver	Used for communicating with the ZENworks Agent.
ZENworks Services Monitor	zenwatch	Used to monitor the status of the ZENworks services.
ZENworks Imaging Agent	ziswin	Used to save and restore image-safe data on the server (as a managed device). Only runs when launched by the ZENworks Agent.

The services reside in the `\novell\zenworks\bin` directory on a ZENworks Server. Refer to the following sections for instructions to help you control the ZENworks services:

- Section 5.1.1, "Checking the Status of a ZENworks Service," on page 66
- Section 5.1.2, "Starting the ZENworks Services," on page 66
- Section 5.1.3, "Stopping the ZENworks Services," on page 67
- Section 5.1.4, "Restarting the ZENworks Services," on page 67

5.1.1 Checking the Status of a ZENworks Service

1 On the server, click *Start*, select *Administrative Tools > Services*, then review the status of the services listed in Table 5-1 on page 65.

5.1.2 Starting the ZENworks Services

Do one of the following:

- Start the ZENworks services from the Services windows:
    1. Click the desktop *Start* menu.
    2. Click *Settings > Control Panel.*
    3. Double-click *Administrative Tools > Services*.
    4. Select the service you want to start (see Table 5-1 on page 65), then click *Start.*
- Start the ZENworks services from the command prompt:
    1. Execute the following command:

        `novell-zenworks-configure -c Start`

    2. To start a specific service, specify the number next to the service, then press Enter.

or

To start all the services, press Enter.

The ZENworks services start when the ZENworks Server is booted and should not normally need to be restarted. If you need to frequently restart the services, ensure that your server hardware meets the ZENworks minimum requirements. If the server does not have adequate RAM, ZENworks services might not continue running. For more information, see "Primary Server Requirements" in the *ZENworks 10 Asset Management Installation Guide*.

5.1.3 Stopping the ZENworks Services

Do one of the following:

- Stop the ZENworks services from the Services windows:

  1. Click the desktop *Start* menu.
  2. Click *Settings > Control Panel.*
  3. Double-click *Administrative Tools > Services*.
  4. Select the service you want to stop (see Table 5-1 on page 65), then click *Stop.*

- Stop the ZENworks services from the command prompt:

  1. Execute the following command:

     `novell-zenworks-configure -c Start`

  2. To stop a specific service, specify the number next to the service you want to stop followed by the number next to the `Stop` action by using comma (,) as the delimiter, then press Enter.

     or

     To stop all the services, enter the number next to the `Stop` action, then press Enter.

5.1.4 Restarting the ZENworks Services

Do one of the following:

- Restart the ZENworks services from the Services windows:

  1. Click the desktop *Start* menu.
  2. Click *Settings > Control Panel.*
  3. Double-click *Administrative Tools > Services*.
  4. Select the service you want to restart (see Table 5-1 on page 65), then click *Restart.*

- Restart the ZENworks services from the command prompt:

  1. Execute the following command:

     `novell-zenworks-configure -c Start`

  2. To restart a specific service, specify the number next to the service you want to restart followed by the number next to the `Restart` action by using comma (,) as the delimiter, then press Enter.

     or

     To start all the services, specify the number next to the `Restart` action, then press Enter.

5.2 ZENworks Services on a Linux Server

When it is running on a Linux server, the ZENworks Server includes the services listed in the following table. All services are always installed regardless of the ZENworks 10 products (Configuration Management, Asset Management, and Patch Management) you have licensed and activated. If a service is not required for your product, it is disabled

Table 5-2 *ZENworks Services on Linux*

Service	Service Name	Description
Proxy DHCP Service	novell-proxydhcp	Used with a standard DHCP server to inform PXE-enabled devices of the IP address of the Novell TFTP server.
TFTP Service	novell-tftp	Used by PXE-enabled devices to request files that are needed to perform imaging tasks.
ZENworks Agent Service	novell-zmd	Used to enable the server as a managed device.
ZENworks Datastore	sybase-asa	Used to run the embedded SQL Anywhere database.
ZENworks Loader	novell-zenloader	Used for loading and controlling the Java services that perform ZENworks Server tasks.
ZENworks Preboot Policy Service	novell-zmgprebootpolicy	Used by PXE-enabled devices to check for assigned preboot policies and work.
ZENworks Preboot Service	novell-pbserv	Used to provide imaging services to a device. This includes sending and receiving image files, discovering assigned Preboot bundles, acting as session master for multicast imaging, and so forth.
ZENworks Server	novell-zenserver	Used for communicating with the ZENworks Adaptive Agent.
ZENworks Services Monitor	novell-zenmntr	Used to monitor the status of the ZENworks services.
ZENworks Imaging Agent	novell-zenagent	Used to save and restore image-safe data on the server (as a managed device). Only runs when launched by the ZENworks Adaptive Agent.

The services reside in the `/etc/init.d` directory. Refer to the following sections for instructions to help you control the ZENworks services:

- Section 5.2.1, "Checking the Status of a ZENworks Service," on page 69
- Section 5.2.2, "Starting the ZENworks Services," on page 69

-
-

5.2.1 Checking the Status of a ZENworks Service

1 At the server prompt, enter the following command:

`/etc/init.d/`*servicename* `status`

Replace *servicename* with the name of the service as listed in Table 5-2 on page 68.

5.2.2 Starting the ZENworks Services

- To start a ZENworks service, do one of the following:
  - Enter the following command at the console prompt:

    `/etc/init.d/`*servicename* `start`

    Replace *servicename* with the name of the service as listed in Table 5-2 on page 68.
  - At the console prompt, execute `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`, specify the number next to the service you want to start, then press Enter.
- To start all the ZENworks services:
  1. Execute the following command at the server prompt:

     `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

     By default, all the services and the `Start` option are selected.
  2. Press Enter.

The ZENworks services start when the ZENworks Server is booted and should not normally need to be restarted. If you need to frequently restart the services, ensure that your server hardware meets the minimum ZENworks requirements. If the server does not have adequate RAM, ZENworks services might not continue running. For more information, see "Primary Server Requirements" in the *ZENworks 10 Asset Management Installation Guide*.

5.2.3 Stopping the ZENworks Services

- To stop a service, do one of the following:
  - Enter the following command at the console prompt:

    `/etc/init.d/`*servicename* `stop`

    Replace *servicename* with the name of the service as listed in Table 5-2 on page 68.
  - At the console prompt, execute `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`, specify the number next to the service you want to stop, then press Enter.
- To stop all the ZENworks services:
  1. Execute the following command at the server prompt:

     `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`
  2. Enter the number next to the `Stop` action.

5.2.4 Restarting the ZENworks Services

- To restart a service that is already running, do one of the following:

    - Enter the following command at the console prompt:

      `/etc/init.d/`*servicename* `restart`

      Replace *servicename* with the name of the service as listed in .

    - At the console prompt, execute `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`, specify the number next to the service you want to restart, then press Enter.

- To restart all the ZENworks services:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

    2. Enter the number next to the `Restart` action.

5.3 Configuring Additional Access to a ZENworks Server

If you have managed devices that are unable to authenticate to the IP address or DNS name of a ZENworks Server, such as devices outside the firewall or devices using a proxy server, you can specify additional IP addresses or DNS names for the ZENworks Server that can be used by the devices for access to the server.

-
-

5.3.1 Addressing Non-Detectable IP Address Conditions

The Non-Detectable IP Addresses panel lets you specify the addresses that can be used to access the ZENworks Server when the server's IP address cannot be found by a device.

1 In ZENworks Control Center, click *Devices* in the left pane, select *Servers* in the Devices panel, select a server object, click the *Settings* tab, click *Infrastructure Management*, then select *Non-detectable IP Addresses*.

2 Fill in the field:

   IP Address: Standard dotted-decimal notation. For example, `192.168.0.1`.

3 Click *Add* to add the address to the list.

4 Repeat Step 1 to Step 3 to add additional IP addresses.

5 If necessary, use the *Move Up* and *Move Down* buttons to reorder the list.

   The IP addresses are used in the order listed, from top to bottom.

6 When you are finished adding addresses, click *Apply* or *OK* to save the addresses.

5.3.2 Addressing Non-Detectable DNS Name Conditions

The Additional DNS Names panel lets you specify additional names that can be used to access the ZENworks Server when the server's DNS name cannot be found by a device.

The DNS names added in this panel are distributed to all managed devices for them to use in connecting to the server.

To add a DNS name:

1 In ZENworks Control Center, click *Devices* in the left pane, select *Servers* in the Devices panel, select a server object, click the *Settings* tab, click *Infrastructure Management*, then select *Additional DNS Names*.

2 In the *List of Server DNS Names* field, specify the DNS name for the IP address of the server (such as a proxy server) that the devices can access.

3 Click *Add* to add the DNS name to the list.

4 If necessary, use the *Move Up* and *Move Down* buttons to reorder the list.

The DNS names are used in the order listed, from top to bottom.

5 When you are finished adding addresses, click *Apply* or *OK* to save the addresses.

5.4 Configuring Restricted Access to a ZENworks Server

You can configure a list of IP addresses for the ZENworks server that should not be visible to the registration agent:

To restrict an IP addresses:

1 In ZENworks Control Center, click *Devices* in the left pane, select *Servers* in the Devices panel, select a server object, click the *Settings* tab, click *Infrastructure Management*, then select *Restricted IP Addresses*.

2 Click the address in the Visible IP Addresses list, then click [>] to move that IP address to the Restricted IP Addresses list.

To make a restricted IP address visible to the registration agent:

1 In ZENworks Control Center, click *Devices* in the left pane, select *Servers* in the Devices panel, select a server object, click the *Settings* tab, click *Infrastructure Management*, then select *Restricted IP Addresses*.

2 Click the address in the Restricted IP Addresses list, then click [<] to move that IP address to the Visible IP Addresses list.

5.5 Determining the ZENworks Software Version Installed on Servers

For upgrading and troubleshooting purposes, you use ZENworks Control Center to determine which versions of ZENworks Configuration Management (ZCM), ZENworks Asset Management (ZAM), and ZENworks Patch Management (ZPM) are running on ZENworks Primary Servers in your Management Zone.

To see ZENworks version information for a specific Primary Server in your Management Zone:

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

2 Click *Servers*, then click the desired Primary Server.

3 View the version number in the *ZENworks Configuration Management Version*, *ZENworks Asset Management Version*, and *ZENworks Patch Management Version* rows.

4 (Optional) Click the underlined version number next to *ZENworks Configuration Management Version* to see a list of installed packages.

To see ZENworks version information for all Primary Servers in your Management Zone:

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

2 In the Server Hierarchy panel, view the version information in the *ZCM Version*, *ZAM Version*, and *ZPM Version* columns for each server.

5.6 Uninstalling a ZENworks Server

Instructions for uninstalling a ZENworks Server are provided in "Uninstalling ZENworks Software" in the *ZENworks 10 Asset Management Installation Guide*.

5.7 Deleting a ZENworks Primary Server

If you cannot run the uninstallation program to uninstall a ZENworks Primary Server, you can delete it from the Server Hierarchy panel.

WARNING: Use extreme caution when deleting a ZENworks Primary Server from your ZENworks system.

Deleting a ZENworks Primary Server is irreversible. The preferred way to decommission a Primary Server is to run the uninstallation program from the Server. Deleting a Primary Server should only be used if the uninstallation program cannot be run (for example, if the Primary Server experiences a hard drive failure). For more information about running the uninstallation program, see "Uninstalling ZENworks Software" in the *ZENworks 10 Asset Management Installation Guide*.

If you remove a Primary Server that hosts an internal ZENworks Sybase database, your entire ZENworks Management Zone becomes inoperable.

Deleting a ZENworks Server completely removes the ZENworks Server from the Management Zone. There is no recovery.

You can delete managed server and workstation devices by using the options on the *Devices* tab, as explained in "Deleting Devices from Your ZENworks System" in the *ZENworks 1 Discovery, Deployment, and Retirement ReferenceZENworks 1 Discovery, Deployment, and Retirement Reference*.

To remove a ZENworks Primary Server from your Management Zone:

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

2 In the Server Hierarchy section, select the check box next to the Primary Server (you can select multiple devices).

3 Click *Action > Delete ZENworks Server*.

5.8 ZENworks Server Reports

You must have installed ZENworks Reporting Server to view the predefined reports. For more information on how to install ZENworks Reporting Server, see the *ZENworks 10 Asset Management Reporting Server Installation Guide*.

To view a predefined report for the ZENworks Server:

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

2 In the ZENworks Reporting Server panel, click *ZENworks Reporting Server InfoView* to launch the ZENworks Reporting Server InfoView.

3 Navigate to the *Novell ZENworks Reports* folder > *Predefined Reports* > *ZENworks System* folder.

The following predefined report is included for the ZENworks Server:

ZENworks Server Statistics: Displays server statistics such as database, disk space, CPU usage, and various connection details that include total connections per day and average connections per day.

For more information on creating and managing reports, see the *ZENworks 10 Asset Management System Reporting Reference* documentation.

Satellites 6

A Satellite is a managed device that can perform some of the roles that a ZENworks Primary Server normally performs, including authentication, information collection, content distribution, and imaging. A Satellite can be any managed Windows device (server or workstation), but not a Primary Server. A Satellite can also be an unmanaged Linux device (server or workstation) that has the ZENworks Agent for Linux installed. For more information, see "Satellite Requirements" in the *ZENworks 10 Asset Management Installation Guide* and "Deploying the ZENworks Adaptive Agent" in the *ZENworks 1 Discovery, Deployment, and Retirement Reference*.

When you configure a Satellite, you specify which roles it performs (Authentication, Collection, or Content). A Satellite can also perform roles that might be added by third-party products that are snap-ins to the ZENworks 10 Asset Management framework.

NOTE: The Imaging Satellite role is not supported for Windows 2000.

You might, for example, create a Satellite in a location across a slow WAN link and create Closest Server rules to offload one or more roles from the Primary Server to the newly created Satellite to improve the performance of your ZENworks system.

The following sections contain more information:

6.1 Understanding the Satellite Roles

A Satellite is a device that can perform some of the roles that a ZENworks Primary Server normally performs, including authentication, information collection, content distribution, and imaging. The following sections contain more information about each role:

6.1.1 Understanding the Authentication Role

When users logged in to previous versions of ZENworks, they were authenticated to the Management Zone by contacting the ZENworks Primary Server, which in turn contacted the user source that contains the users.

Satellite devices with the Authentication role can now speed the authentication process by spreading the workload among various devices and by performing authentication locally to managed devices. You can have multiple Satellite devices with the Authentication role. In addition, each Satellite with the Authentication role can have multiple user sources configured and each Satellite can have multiple connections to each user source to provide failover.

When a managed device uses a Satellite for authentication, the Satellite issues an authentication token to the managed device so that it can authenticate to the Management Zone using SSL.

On the managed device, the Authentication module is inactive until you promote the managed device to be a Satellite with the Authentication role or until the Authentication role is added to an existing Satellite.

NOTE: If a Satellite device performing the Authentication role is a member of a domain, all managed devices authenticating to that Satellite must be members of the same domain.

6.1.2 Understanding the Collection Role

If you want to improve information roll?up access for a group of devices to minimize traffic to the ZENworks Primary Server that is hosting the ZENworks database, you can enable the Collection role on a device. For example, if you have devices that are rolling up information to a Primary Server outside of their network segment, you can minimize network traffic by enabling the Collection role on a device within the network segment to accept the information from the other devices in that segment. That Collection role device is then the only device from that segment that is rolling up information to the Primary Server.

You can enable the Collection role on any managed device. The Collection role requires only the Collection role module that is installed with the ZENworks Adaptive Agent. The module is inactive until you enable the Collection role on the managed device.

When you enable a Collection role on a device, you can assign any ZENworks Primary Server as its parent server. The Collection role device uploads information only to its parent Primary Server. If the parent Primary Server is not a child of another Primary Server, it writes the information directly to the database. If the parent Primary Server is a child of another Primary Server, it passes the information up to its parent Primary Server, which writes the information to the database.

A Satellite with the Collection role collects inventory information and messages (errors, warning, informational, and so forth), then rolls that information up to its parent Primary Server, which in turn either writes to the database directly or passes the information to its parent Primary Server, which does the database writing. The role includes a roll-up schedule that you can edit.

On the managed device, the Collection module is inactive until you promote the managed device to be a Satellite with the Collection role or until the Collection role is added to an existing Satellite.

6.1.3 Understanding the Content Role

Content consists ofsystem updates (ZENworks Server and Adaptive Agent).

If you want to improve content access for a group of devices without creating another Primary Server, you can create the Content role on a device. For example, if you have devices that are accessing a Primary Server outside of their network segment, you can create the Content role on a device within the network segment to service those devices.

The Content role provides the same content delivery service as a Primary Server but requires only the Content role module that is installed with the ZENworks Adaptive Agent. The module is inactive until you enable it on the managed device.

When you enable the Content role on a device, you assign a Primary Server as its parent content server. The Content role Satellite downloads content only from its parent Primary Server. Therefore, any content you want hosted on a Content role Satellite must also be hosted on its parent Primary Server.

On the managed device, the Content module is inactive until you promote the managed device to be a Satellite with the Content role or until the Content role is added to an existing Satellite.

6.2 Adding and Configuring Satellite Devices

You can create a new Satellite device or configure an existing Satellite with the Authentication, Content and Collection roles, change its default port, and adjust the schedules for the roles. You can also remove roles from an existing Satellite.

IMPORTANT: Before promoting a managed device as Satellite, ensure that the ZENworks 10 Configuration Management version installed on the managed device is same as that of the Primary Server.

---

1 To add a new Satellite into the Server Hierarchy panel, in ZENworks Control Center, click the *Configuration* tab. In the Server Hierarchy panel, select the check box next to the desired Primary Server, click *Action*, then click *Add Satellite Server*.

or

To configure an existing Satellite from the Server Hierarchy panel, in ZENworks Control Center, click the *Configuration* tab. In the Server Hierarchy panel, select the check box next to the Satellite that you want to configure, click *Action*, then click *Configure Satellite Server*.

You can only configure one Satellite at a time.

or

To configure an existing Satellite from the device view, in ZENworks Control Center, click the *Devices* tab, then on the *Managed* tab, click either *Servers* or *Workstations*. In the Servers or Workstations panel, select the check box for the Satellite that you want to configure, click *Action*, then click *Configure Satellite Server*.

You can only configure one Satellite at a time.
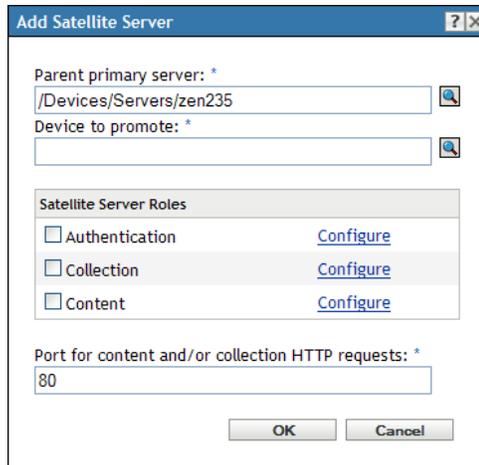
Depending on whether you are adding a new Satellite device or configuring an existing device, the title of the dialog box is different (Add Satellite Server or Configure Satellite Server). The settings and options on each page are similar.

2 (Conditional) To remove Satellite roles from a device, uncheck the desired role in the Satellite Server Roles section, then click *OK*.

You can also use the `zman satellite-server-delete (ssd)` command to remove roles from a Satellite. For more information, see "Satellite Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

3 (Conditional) To add a role to a Satellite, select the desired role in the *Satellite Server Roles* section.

If the *Configure* link is disabled for any role, that role is disabled for this device. For example, if the Satellite's parent Primary Server does not have the Collection role, the Satellite's Collection role is disabled and cannot be configured. Non-configurable roles that a managed device performs are also listed in the dialog box but cannot be edited.

See the following sections for more information about each role:

- Section 6.2.1, "Authentication Role," on page 79
- Section 6.2.2, "Collection Role," on page 80
- Section 6.2.3, "Content Role," on page 80

4 (Optional) In the *Port for Content and/or Collection HTTP Requests* field, specify the port number.

The default port is 80. Content and Collection servers share the same Web server and the same port. Make sure that the specified port is not in use.

5 (Optional) In the *Port for authentication Secure HTTPS requests* field, specify the port number.

The default port is 443. This is the port on which the Satellite device listens while communicating with the managed devices. Make sure that the specified port is not in use.

6 Click *OK* to save your changes and exit the dialog box.

7 Repeat the previous steps to configure other Satellites.

6.2.1 Authentication Role

This role helps speed the authentication process by spreading the workload among various devices and by performing authentication locally to managed devices.

- ◆ "Prerequisites to Configure the Authentication Role on a Satellite" on page 79
- ◆ "Configuring the Authentication Role on a Satellite" on page 79

Prerequisites to Configure the Authentication Role on a Satellite

If you are using an external certificate, you must complete the following tasks on the Satellite before configuring the Authentication role on a Satellite:

1. Ensure that the Satellite has its own individual server certificate and the private key.

   For detailed information on how to create to an external certificate and generate the private key, see "Creating an External Certificate" in the *ZENworks 10 Asset Management Installation Guide*.

2. Import the external certificate by using the `zac import-authentication-cert (iac)` command.

   For more information about zac, view the zac man page (man zac) on the Satellite or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

   NOTE: You must import the external certificate each time you promote the Satellite to Authentication role.

Configuring the Authentication Role on a Satellite

1 (Optional) To configure the Authentication role on a Satellite, select the check box next to *Authentication*, click *Configure* to display the Configure Authentication dialog box.

2 Specify the authentication port.

3 Select a user source from the User Source drop-down list.

4 Click *Add* to display the Add User Source Connections dialog box.

   Fill in the fields:

   Connection Name: (Optional) Specify all or part of the name for the connection to the LDAP directory, then click *Filter* to display the list of connections that match the criteria.

   If you have many connections in your ZENworks Management Zone, you can use the *Connection Name* field to display only those connections that match the criteria. For example, to display all connections that contain the word "London," type `London` in the *Connection Name* field, then click *Filter*.

   Connection Address: (Optional) Specify part of the IP address or DNS hostname of the connection to the LDAP directory, then click *Filter* to display all connections with that IP address.

   If you have many connections in your ZENworks Management Zone, you can use the *Connection Address* field to display only those connections that match the criteria. For example, to search for and display all connections that have an IP address starting with 172, type 172 in the *Connection Address* field, then click *Filter*.

   User Source Connections: Select the check box next to the connection you want to add.

5 Click *OK* to return to the Configure Authentication dialog box.

6 (Optional) Reorder the connections in the User Source Connection list by selecting a connection's check box, then clicking *Move Up* or *Move Down*.

The device uses the connections in the order they are listed to authenticate the device to the ZENworks Management Zone.

7 Click *OK* to return to the Add Satellite Server or Configure Satellite Server dialog box.

8 Continue with .

6.2.2 Collection Role

This role causes the device to collect inventory information and messages (errors, warning, informational, and so forth), then rolls that information up to its parent Primary Server, which in turn either writes to the database directly or passes the information to its parent Primary Server, which does the database writing.

1 Select the check box next to *Collection*, then click *Configure*.

2 Fill in the field:

Collection Roll-Up Schedule: Specify the number of days, hours, and minutes for how often you want the collected data to be rolled up from the devices that use it as a collection server.

The Collection Roll?Up schedule determines how often the collected inventory information is rolled up to the parent Primary Server for inclusion in the ZENworks database. When the information is in the database, it is viewable in ZENworks Control Center.

To specify the devices that use the Collection Roll-Up role, configure the *Closest Server Rules* setting in the *Management Zone* settings on the *Configuration* page.

3 Click *OK*.

4 Continue with .

6.2.3 Content Role

This role enables the managed device to distribute content (system updates) to other devices.

When you set up a device to function with a Content role, you must specify a Primary Server as its parent. The device with the Content role receives all content from its parent Primary Server. Any content you want hosted on a Satellite with the Content role must also be hosted on its parent Primary Server. If the content is not hosted on the new Primary Server, it is added.

To specify the devices that need content from this Satellite, configure the *Closest Server Rules* setting in the *Management Zone* settings on the *Configuration* page.

1 Select the check box next to *Content*, click *Configure*, then click *Add*.

Fill in the fields:

Content Type: Select a Content Type (for example, *Policy*, *Non-Patch Bundles*, or *System Update* Server).

Throttle (in KB/sec): Select the throttle rate. This rate specifies the maximum rate at which content is replicated. The actual rate can be lower, depending on other factors, including the number of downloads.

Duration: Click the up-arrow or down-arrow to set the content update duration period in minutes. Depending on the Schedule Type and its options you select, you need to be aware of the following:

- The *End Time* setting in all three scheduling types (*Days of the Week*, *Month*, and *Fixed Interval*) is not the true end time when the content update stops processing. The end time specifies the end of the time period during which an update can start.

  If you select *Days of the Week* or *Month* and set a random start and end time, the update starts between these times and continues for the specified duration. For example, if the *Duration* is set at the default of 60 minutes and the update starts 10 minutes before the specified end time, content is updated for the entire 60 minutes. The same concept applies for the *Fixed Interval* schedule. If *Duration* is set at the default of 60 minutes and the end time does not allow enough time for the specified duration, content is updated for the entire 60 minutes.

- If the Primary Server contains too much content to update during the specified duration, the update continues at the next regularly scheduled time. Content that already exists on the Satellite device is not updated again. Content that was not updated during the previous update and any new content added to the Primary Server is updated.

Schedule Type: Select a schedule for how often you want the Satellite's content to be updated from the parent Primary Server:

- **No Schedule:** If you select *No Schedule*, content is never automatically updated from the parent Primary Server. To manually replicate the content run the `zac wake-cdp (cdp)` command on the Satellite.

- **Recurring:** Select *Days of the Week*, *Monthly*, or *Fixed Interval*, then fill in the fields. For more information, see Section C.4, "Recurring," on page 347.

Be aware that the cleanup action for content occurs every night at midnight.

If you do not set a schedule for a particular type of content, the *<Default>* schedule applies to all content of that type.

2 Click *OK* twice to return to the Add Satellite Server or Configure Satellite Server dialog box.

3 Continue with Step 4 on page 78.

6.3 Refreshing a Satellite

You can refresh a device so that any pending actions take place immediately.

1 Select the check box next to the Satellite that you want to refresh.

2 Click *Action > Refresh Device*.

The QuickTask Status box is displayed while the action is in progress.

3 (Optional) To close the status dialog box, click *Hide*.

The refresh action continues in the background.

4 (Optional) To cancel the refresh action, click the check box for the device, click *Stop*, then click *Hide* to close the dialog box.

6.4 Removing the Roles from a Satellite

You can choose to remove one or more roles from a Satellite. However, the Satellite must have at least one role configured for it to continue to perform the Satellite function. If you remove all the roles, the Satellite is demoted to be only managed device.

Removing a Satellite role does not remove the device from any of the non-default Closest Server rules. The device is removed from the non-default Closest Server rules only when it is no longer a Satellite.

To remove one or more roles from a Satellite:

1 In ZENworks Control Center, click the *Configuration* tab.
2 In the Server Hierarchy panel, select the check box next to the Satellite from which you want to remove the role.
3 Click *Actions > Configure Satellite Server*.
4 In the Configure Satellite Server dialog box, deselect the check box next to the Satellite role you want to remove.
5 Click *OK*.

6.5 Removing Satellites from the Server Hierarchy

You can remove a Satellite from the Server Hierarchy listing when that device is no longer needed to perform Satellite functions. The device's object isn't removed from ZENworks; it is just removed from the Server Hierarchy listing. However, removing a Satellite from the hierarchy listing does cause the content, or collection roll?up information to be removed from the device.

When you remove a Satellite, the managed devices that used it must be reconfigured to use another server for content and collection purposes.

You cannot use this option to remove a Primary Server from the listing.

To remove a Satellite:

1 For the Satellite that you want to remove, make a note of all devices that are using it for content and collection information roll-up.
2 In ZENworks Control Center, click the *Configuration* tab.
3 In the Server Hierarchy panel, select the check box next to the Satellite that you want to remove from the zone.
4 Click *Action > Remove Satellite Server*.

5 To confirm the removal, click *OK*.

6 As necessary, reconfigure the managed devices that used the Satellite so that they can continue to receive content and roll up collection information.

6.6 Moving a Satellite from One Primary Server to Another Primary Server

You can move a Satellite from its parent Primary Server to another Primary Server.

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

2 In the Server Hierarchy panel, select the check box next to the Satellite that you want to move, then click *Move*.

3 Select the Primary Server you want to be the Satellite's new parent, then click *OK*.

6.7 Specifying a Different Repository for the Content Role Satellite (Windows Only)

The content repository is located in the following default path on Windows Satellites:

installation_path\zenworks\work\content-repo

To change the default path to another location accessible to the server:

1 Make sure that the disk drive you want to use is attached to the Satellite and is properly formatted.

You do not need to specify a drive letter, but the server must recognize the hardware.

2 Make sure that there is no content in the default location (*installation_path*\zenworks\work\content-repo) by doing one of the following:

  ◆ If the content-repo directory is not present in the path given above, create the content-repo directory in that path.

  ◆ If you need to save the content that is now in this directory, rename the existing directory and create a new empty directory named content-repo.

    You can later copy the content from the renamed directory to the new content repository location (see Step 9).

  ◆ If you do not need any of the content in the existing content-repo directory, delete the directory and re-create the content-repo directory.

An empty content-repo directory must exist to act as the pointer to the new content repository location for the Satellite.

3 Click *Start*, right-click the *My Computer* icon, then select *Manage*.

You can also click *Start*, then enter compmgmt.msc at the *Run* command line.

4 Select *Disk Management* under the *Storage* section in the left pane.

The disk drive you selected in Step 1 should be displayed.

5 Right-click the partition of the disk drive that you want to use as your content repository on the Satellite, then select *Change Driver Letter and Paths*.

This is the disk drive (see Step 1) that you will mount to the content-repo directory.

6 Click *Add*.

This displays the Add Drive Letter or Path dialog box.

7 Select *Mount in the Following Empty NTFS Folder*, then browse for and select the `content-repo` directory:

`installation_path\zenworks\work\content-repo`

8 Click *OK* as necessary to exit and save the configuration change.

9 If necessary (see Step 2), move the files from the old renamed `content-repo` directory to the new `content-repo` directory.

This copies the files to the hard drive that you have selected for your new content repository.

Server Hierarchy

<div style="text-align: right; font-size: large;">7</div>

Your Management Zone's server hierarchy determines the relationships among the ZENworks Primary Servers and Satellites. These relationships control the flow of content and information within the zone. Proper configuration can help you to minimize network traffic between network segments connected by slow links.

7.1 Primary Servers: Peer Versus Parent/Child Relationships

By default, each Primary Server that you add to the system is created as a peer to all other Primary Servers. Being in a peer relationship enables a Primary Server to:

* Have direct write access to the ZENworks database so that it can add information (inventory, messages, and status).
* Retrieve device configuration information directly from the database.
* Pull content (system updates) from any Primary Server.

Direct write access to the ZENworks database requires a JDBC/ODBC connection. If a Primary Server is located on the network so that it cannot effectively access the ZENworks database via a JDBC/ODBC connection, you can configure the Primary Server to be a child of another Primary Server that does have direct write access to the database. However, you should try to maintain peer relationships between your Primary Servers unless your network connections do not allow it.

Being in a child relationship instructs a Primary Server to use HTTP to roll up inventory, message, and status information to its parent Primary Server, which then writes the information to the database. However, the child Primary Server still retrieves configuration information from the database and passes configuration information back up to the database. For this reason, the child Primary Server must have a direct connection to the ZENworks database.

We do not recommend having a Primary Server across a WAN link from the ZENworks database because this causes increased traffic across the network. We recommend that you use a Satellite device across a WAN link. For more information, see Section 7.2, "Satellite Role Relationships," on page 85.

7.2 Satellite Role Relationships

A Satellite is a device that can perform certain roles that a ZENworks Primary Server normally performs. A Satellite can be any managed Windows device (server or workstation), but not a Primary Server. A Satellite can also be an unmanaged Linux device (server or workstation). When you configure a Satellite, you specify which roles it performs (Authentication, Collection, or Content). A Satellite can also perform roles that might be added by third-party products that are snap-ins to the ZENworks 10 Asset Management framework. For more information about the tasks you can perform on Satellites, see Chapter 6, "Satellites," on page 75.

The following sections contain more information:

7.2.1 Authentication Role Sever Relationships

An Authentication role identifies a managed device that is able to authenticate devices to the ZENworks Management Zone. When you set up a device to function with a Authentication role, you must specify a Primary Server as its parent.

7.2.2 Content Role Server Relationships

A Content role identifies a managed device that is able to distribute content (system updates) to other devices. When you set up a device to function with a Content role, you must specify a Primary Server as its parent. The device with the Content role receives all content from its parent Primary Server.

7.2.3 Collection Role Server Relationships

A Collection role causes a managed device to collect inventory information and messages (errors, warning, informational, and so forth), then rolls that information up to its parent Primary Server, which in turn either writes to the database directly or passes the information on to its parent Primary Server, which does the database writing.

7.3 Changing the Parent-Child Relationships of Primary Servers

You can move a Primary Server to be a peer or child of other Primary Servers:

7.3.1 Making a Primary Server a Child

You can place a Primary Server as a child of another Primary Server. This child Primary Server no longer writes collection data directly to the ZENworks database; instead, it passes its information on to its parent Primary Server, which does the database writing. However, the child Primary Server still retrieves configuration information from the database and passes configuration information back up to the database. For this reason, the child Primary Server must have a direct connection to the ZENworks database

To make a Primary Server a child of another server:

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

2 In the Server Hierarchy panel, select the check box next to the Primary Server you want to make a child.

3 Click *Move* to display the *Move Device* dialog box.

4 Select the Primary Server that you want to be its parent server.

5 Click *OK*.

7.3.2 Making a Primary Server a Peer

This places the Primary Server back to the first level of the hierarchy, or moves it to be a child of another Primary Server if it is nested more than one level deep.

If you move a Primary Server back to the first level, it writes directly to the ZENworks database.

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

2 In the Server Hierarchy panel, select the check box next to the Primary Server you want to make a peer.

3 Click *Move* to display the *Move Device* dialog box.

4 Do one of the following:

  ◆ Select *None* to move it up to the first level of servers in the listing.

  ◆ Select another Primary Server to be the parent server.

5 Click *OK*.

Closest Server Rules

<div style="text-align: right; font-size: 3em;">8</div>

When you have multiple ZENworks Servers (Primary Servers and Satellites) in your environment, you can use Closest Server rules to determine which ZENworks Server a managed device contacts to perform the following functions:

- Collection
- Content
- Configuration
- Authentication

Closest Server rules help you improve load balancing between ZENworks Servers, perform failover, and improve performance when there is a slow link between the managed devices and Servers.

The Closest Server rules let you map devices to ZENworks Servers based on network addresses (DNS names and IP addresses).

For example, you can create a rule that maps all devices to Server1 that fall within the IP address range of 192.168.67.1 to 192.168.67.100.

The following sections provide information and instructions for setting up Closest Server rules:

8.1 Understanding Closest Server Rules

When your ZENworks Management Zone includes more than one server (Primary Servers and Satellites), devices need to know which server to contact. The Closest Server Rules panel lets you create rules to determine which servers a device contacts.

With respect to Closest Server rules, devices that are configured as Satellites are considered as servers and can be listed for selection in the *Collection Servers*, *Content Servers* and *Authentication Servers* lists.

The following sections provide information you should understand before you start creating Closest Server rules:

8.1.1 ZENworks Server Functions

There following are basic functions for which devices contact a server:

 • **Collection:** Inventory and message log information is collected from each device, to be viewed in ZENworks Control Center and output to reports. Each ZENworks Primary Server and any Satellite can act as a collection server.

 • **Content:** Content is provided to managed devices. Each ZENworks Primary Server and any Satellite can act as a content server.

 • **Configuration:** Configuration settings and registration information are applied to devices. Only ZENworks Primary Servers can act as configuration servers.

 • **Authentication:** Managed devices contact a ZENworks Server to authenticate to the Management Zone. Each ZENworks Primary Server and any Satellite can act as an authentication server.

A device can contact the same server for all functions, or it can contact different servers for each function.

8.1.2 Mapping Devices to Servers

A Closest Server rule maps devices with specific network addresses to the following lists:

 • *Collection Server* list
 • *Content Server* list
 • *Configuration Server* list
 • *Authentication Server* list

For example, assume that you want to create a rule for devices that fall within the IP address range of 192.168.67.1 to 192.168.67.100. You specify the IP address range, then create the following lists:

Collection Server List	Content Server List	Configuration Server List	Authentication Server List
Server 1	Server 3	Server 1	Server 2
Server 2	Server 1	Server 3	Server 3
Server 3		Server 2	Server 1

Based on the lists, any device whose IP address falls within the range contacts Server 1 for collection, Server 3 for content, Server 1 for configuration, and Server 2 for authentication. If any of these servers are unavailable, the device contacts the next server in the list.

8.1.3 Effective Rules

You can configure Closest Server rules at three levels:

 • **Management Zone:** The rules are inherited by all device folders and devices.

 • **Device Folder:** The rules are inherited by all devices contained within the folder or its subfolders. They override the Management Zone settings.

- **Device:** The rules apply only to the device for which they are configured. They override the settings set at the Management Zone and folder levels.

Each device can have only one Closest Server rule applied to it. A device's effective rule is determined as follows:

1. **Device Settings:** Evaluate all rules that are set on the device. If the device meets a rule's criteria, that rule becomes the device's effective rule.

2. **Folder settings:** If no device rule applies, evaluate all rules that are set on the device's parent folder. If the device meets a rule's criteria, that rule becomes the device's effective rule. If not, evaluate the rules on the next folder up in the hierarchy.

3. **Management Zone:** If no folder rule applies, evaluate all rules that are set in the Management Zone. If the device meets a rule's criteria, that rule becomes the device's effective rule. If not, apply the Default rule to the device.

4. **Default Rule:** If no device, folder, or Management Zone rule applies, apply the default rule to the device. The Default rule is simply a listing of all content servers in the order you want devices to contact them.

8.2 Configuring the Closest Server Default Rule

The Closest Server Default rule lets you define the rule that is used by a device to determine the closest authentication, collection, content, and configuration servers when no Closest Server rules have been defined or when none apply. This rule is simply a listing of the servers in the order you want devices to contact them. You cannot add or remove servers from the lists.

For Closest Server Default rules, devices that are Satellites are considered as servers and can be listed for selection in the appropriate lists.

By default, all ZENworks Servers function as authentication, collection, content, and configuration servers and are displayed in the appropriate lists. In addition, any devices that are defined with the Content or Imaging roles are also displayed in the Content Servers list, any devices that are defined with the Collection role are also displayed in the Collection Servers list, and any devices that are defined with the Authentication role are also displayed in the Authentication Servers list.

To configure a Closest Server Default rule:

1 In ZENworks Control Center, click the *Configuration* tab, click *Infrastructure Management* (in the Management Zone Settings panel), then click *Closest Server Default Rule*.

2 To configure the servers listed in the any section, do any of the following:

   2a (Conditional) You can perform the following tasks to manage individual servers in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Reorder the list	1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Server1, Server2

2b (Conditional) You can use a group to randomize connections to servers. Each time the server list is sent to a device, it is randomized so that not all devices receive the same ordered list.

For example, assume the server list contains the following:

- ◆ Server 1
- ◆ Group 1 (Server 2, Server 3, Server 4)
- ◆ Server 5

One device might receive the following list: Server 1, Server 3, Server 2, Server 4, Server 5.

Another device might receive a different list: Server 1, Server 4, Server 3, Server 2, Server 5.

In all cases, Server 1 is listed first and Server 5 is listed last, but the order of the servers in Group 1 is randomized.

You can perform the following tasks to manage server groups in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Create a server group	1. In the desired server list, select the check boxes for the servers you want to include in the group, then click *Groups > Create Group from Selection*. or If you want to create an empty group, click *Groups > Create Empty Group*. You can add servers to the empty group later using the *Groups > Add to Group* option. 2. Specify a name for the group, then click *OK* to add the group to the list. 3. Click *Apply* to make the change effective.	
Add servers to a group	1. In the desired server list, select the check boxes for the servers you want to add to the group. 2. Click *Groups > Add to Group*. 3. Do one of the following: ◆ To add the selected servers to a new group, select *Create New*, specify a group name, then click *OK*. ◆ To add the selected servers to an existing group, select a group from the list in the *Select Existing* field, then click *OK*. 4. Click *Apply* to make the change effective.	

Task	Steps	Additional Details
Reorder the list	1. In the server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5, Server2, Server3, Server1 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Group1, L4Switch5, Server1, Server2
Copy a group from one list to another list	1. In the server list to which you want to copy a group, click *Groups > Copy Existing Group.* For example, to copy a group from the Collection Servers list to the Content Servers list, click *Groups > Copy Existing Group* in the Content Servers list. 2. Select the desired group from the list, then click *OK* to copy the group. 3. Click *Apply* to make the change effective.	If you copy a group to a list that does not already contain the group's servers, the unlisted servers are removed from the group. For example, if Group1 includes Server1 and Server2 and you copy Group1 to a list that does not include Server1, Server1 is removed from the group.
Remove servers from a group	1. In the server list, expand the group to display its servers. 2. Select the check boxes for the servers that you want to remove from the group. 3. Click *Groups > Remove from Group*, then click *OK.* 4. Click *Apply* to make the change effective.	The servers are not removed from the server list, only from the group.
Remove a group	1. In the server list, select the check box for the group you want to remove. 2. Click *Groups > Remove Group*, then click *OK.* 3. Click *Apply* to make the change effective.	The group's servers are not removed, only the group.

2c (Conditional) If you have ZENworks Servers or Satellites that are clustered behind an L4 switch, you can define the L4 switch and add the servers to the definition. This enables the L4 switch to continue to balance the traffic among those servers.

Task	Steps	Additional Details
Create an L4 switch definition	1. In the server list, select the check boxes for the servers to include in the L4 switch definition, then click *L4 Switch > Create L4 Switch Definition from Selection*. or If you want to create an empty L4 switch definition, click *L4 Switch > Create Empty*. You can add servers to the empty definition later using the *L4 Switch > Add to L4 Switch Definition* option. 2. Specify the DNS name or the IP address of the L4 switch, then click *OK* to add the L4 switch to the list. 3. Click *Apply* to make the change effective.	

Add servers to an L4 switch definition	1. In the server list, select the check boxes for the servers you want to add to the L4 switch definition.
	
	2. Click *L4 Switch > Add to L4 Switch Definition*.
	
	3. Do one of the following:
	
	  ◆ To add the selected servers to a new L4 switch definition, select *Create New* and specify the DNS name or IP address of the L4 switch, then click *OK*.
	
	  ◆ To add the selected servers to an existing L4 switch definition, select an L4 switch definition from the list in the *Select Existing* field, then click *OK*.
	
	4. Click *Apply* to make the change effective.	

Task	Steps	Additional Details
Reorder the list	1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5, Server2, Server3, Server1 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Group1, L4Switch5, Server1, Server2
Remove servers from an L4 switch definition	1. In the server list, expand the L4 switch definition to display its servers. 2. Select the check boxes for the servers that you want to remove from the L4 switch definition. 3. Click *L4 Switch > Remove from L4 Switch Definition*, then click *OK*. 4. Click *Apply* to make the change effective.	The servers are not removed from the server list, only from the L4 switch definition.
Remove an L4 switch definition	1. In the server list, click *L4 Switch > Remove L4 Switch Definition*, then click *OK*. 2. Click *Apply* to make the change effective.	The L4 switch definition's servers are not removed, only the definition.

3 Click *OK* or *Apply* to save the changes.

8.3 Creating Closest Server Rules

1 Launch ZENworks Control Center.

2 Do one of the following:

◆ To create a Closest Server rule for your Management Zone, click the *Configuration* tab, then click *Infrastructure Management* (in the Management Zone Settings panel) > *Closest Server Rules*.

◆ To create a Closest Server rule for a device folder, open the folder's details page, then click *Settings > Infrastructure Management* (in the Settings panel) > *Closest Server Rules*.

◆ To create a Closest Server rule for a device, open the device's details page, then click *Settings > Infrastructure Management* (in the Settings panel) > *Closest Server Rules*.

Configuration > Closest Server Rules

Closest Server Rules ☒
Configure the setting for how managed devices determine their closest server using the closest server rules.

[Add]
[Edit]
[Move Up]
[Move Down]
[Remove]

[OK]   [Apply]   [Reset]   [Cancel]

3 Conditional: If you are creating Closest Server rules on a device or device folder, click *Override settings* to activate the Closest Server Rules panel.

The *Override* option (not depicted) displays only at the device and device folder levels.

4 Click *Add* to display the Rule Construction dialog box:

5 In the *Rule Name* field, specify a name for the rule.

The name displays in the Closest Server Rules listing in ZENworks Control Center. To access this listing, click *Configuration* in the left pane, click the *Configuration* tab, click the *Management Zone Settings* panel to open it, click the *Infrastructure Management* section to open it, then click *Closest Server Rules*. All defined rules for the current level are displayed there.

6 If you do not want to append the Closest Server Default rule to the servers you are listing in this Closest Server rule, select the *Exclude the Closest Server Default Rule* check box.

The Closest Server rules feature first uses the servers specified in the rule, then proceeds to any other servers listed in the Closest Server Default rule if the specified servers are not available to the managed device. Therefore, to obtain content only from the servers specified in the rule, select this check box to exclude all other servers.

7 Use the *Rule Logic* fields to create the rule expression.

An expression consists of a criteria option, operator, and value. For example:

`DNS Name Filter equal to *.novell.com`

`DNS Name Filter` is the criteria option, `equal to` is the operator, and `*.novell.com` is the value. In the above example, the Closest Server rule is applied only to devices whose DNS name ends with `.novell.com`.

If necessary, you can use NOT to perform a logical negation of the expression. For example:

`NOT DNS Name Filter equal to *.novell.com`

In the above example, the Closest Server rule is applied only to devices whose DNS name does not end with `.novell.com`.

You can use more than one expression for the rule. For example:

`DNS Name Filter equal to provo.novell.com or IP Address equal to
192.168.67.12/24`

You can use the following criteria:

Option	Explanation
DNS Name Filter	Matches DNS names that meet the filter criteria. You can specify an exact filter or use a question mark (?) or an asterisk (*) as a wildcard to match one or more characters in the DNS name. A ? matches one character and an * matches one or more characters. Examples: provo.novell.com: Matches all devices in the provo subdomain of the novell.com top-level domain. *.novell.com: Matches all devices in the novell.com top-level domain, including any devices in subdomains. provo?.novell.com: Matches all devices in the provo1 and provo 2 subdomains of the novell.com top-level domain; does not match devices in the provo12 subdomain.
IP Address /n	Matches IP addresses that fall within the specified CIDR (Classless Inter-Domain Routing) block. With CIDR, the dotted decimal portion of the IP address is interpreted as a 32-bit binary number that has been broken into four 8-bit bytes. The number following the slash (/n) is the prefix length, which is the number of shared initial bits, counting from the left side of the address. The /n number can range from 0 to 32, with 8, 16, 24, and 32 being commonly used numbers. Examples: 192.168.67.12/16: Matches all IP addresses that start with 192.168. 192.168.67.12/24: Matches all IP addresses that start with 192.168.67.

8 To configure the servers listed in any section, do any of the following:

   8a (Conditional) You can perform the following tasks to manage individual servers in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Add a server to a list	1. In the desired server list (Collection, Content, Configuration, or Authentication), click *Add*. 2. Browse for and select one or more ZENworks Servers or Satellites. 3. Click *OK* to add the selected servers to the list.	By default, ZENworks Servers support all functions (Collection, Content, Configuration, and Authentication). Therefore, all ZENworks Servers are available for selection in any of the server lists. Satellites, however, can be configured for specific roles (Collection, Content, Imaging, and Authentication). This has the following implications: ◆ When selecting Satellites for the Collection Server list, only those Satellites that are assigned the Collection role are available for selection. ◆ When selecting Satellites for the Authentication Server list, only those Satellites that are assigned the Authentication role are available for selection. ◆ When selecting Satellites for the Content Server list, only those Satellites that are assigned the Content role or Imaging role are available for selection. ◆ Satellites do not fulfill the Configuration role. Therefore, they cannot be added to the Configuration Server list. Satellite roles are configured in the Server Hierarchy panel on the Configuration tab.
Reorder the list	1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Server1, Server2

Task	Steps	Additional Details
Remove a server from a list	1. In the server list, select the check box for the server you want to remove. 2. Click *Remove*.	

8b (Conditional) You can use a group to randomize connections to servers. Each time the server list is sent to a device, it is randomized so that not all devices receive the same ordered list.

For example, assume the server list contains the following:

- ◆ Server 1
- ◆ Group 1 (Server 2, Server 3, Server 4)
- ◆ Server 5

One device might receive the following list: Server 1, Server 3, Server 2, Server 4, Server 5.

Another device might receive a different list: Server 1, Server 4, Server 3, Server 2, Server 5.

In all cases, Server 1 is listed first and Server 5 is listed last, but the order of the servers in Group 1 is randomized.

You can perform the following tasks to manage server groups in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Create a server group	1. In the desired server list, select the check boxes for the servers you want to include in the group, then click *Groups > Create Group from Selection*. or If you want to create an empty group, click *Groups > Create Empty Group*. You can add servers to the empty group later using the *Groups > Add to Group* option. 2. Specify a name for the group, then click *OK* to add the group to the list. 3. Click *Apply* to make the change effective.	

Task	Steps	Additional Details
Add servers to a group	1. In the desired server list, select the check boxes for the servers you want to add to the group. 2. Click *Groups > Add to Group*. 3. Do one of the following: ◆ To add the selected servers to a new group, select *Create New* , specify a group name, then click *OK*. ◆ To add the selected servers to an existing group, select a group from the list in the *Select Existing* field, then click *OK*. 4. Click *Apply* to make the change effective.	
Reorder the list	1. In the server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5, Server2, Server3, Server1 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Group1, L4Switch5, Server1, Server2
Copy a group from one list to another list	1. In the server list to which you want to copy a group, click *Groups > Copy Existing Group*. For example, to copy a group from the Collection Servers list to the Content Servers list, click *Groups > Copy Existing Group* in the Content Servers list. 2. Select the desired group from the list, then click *OK* to copy the group. 3. Click *Apply* to make the change effective.	If you copy a group to a list that does not already contain the group's servers, the unlisted servers are removed from the group. For example, if Group1 includes Server1 and Server2 and you copy Group1 to a list that does not include Server1, Server1 is removed from the group.

Task	Steps	Additional Details
Remove servers from a group	1. In the server list, expand the group to display its servers. 2. Select the check boxes for the servers that you want to remove from the group. 3. Click *Groups* > *Remove from Group*, then click *OK.* 4. Click *Apply* to make the change effective.	The servers are not removed from the server list, only from the group.
Remove a group	1. In the server list, select the check box for the group you want to remove. 2. Click *Groups* > *Remove Group*, then click *OK.* 3. Click *Apply* to make the change effective.	The group's servers are not removed, only the group.

8c (Conditional) If you have ZENworks Servers or Satellites that are clustered behind an L4 switch, you can define the L4 switch and add the servers to the definition. This enables the L4 switch to continue to balance the traffic among those servers.

Task	Steps	Additional Details
Create an L4 switch definition	1. In the server list, select the check boxes for the servers to include in the L4 switch definition, then click *L4 Switch* > *Create L4 Switch Definition from Selection.* or If you want to create an empty L4 switch definition, click *L4 Switch* > *Create Empty.* You can add servers to the empty definition later using the *L4 Switch* > *Add to L4 Switch Definition* option. 2. Specify the DNS name or the IP address of the L4 switch, then click *OK* to add the L4 switch to the list. 3. Click *Apply* to make the change effective.	

Task	Steps	Additional Details

Add servers to an L4 switch definition	1. In the server list, select the check boxes for the servers you want to add to the L4 switch definition.
	
	2. Click *L4 Switch > Add to L4 Switch Definition*.
	
	3. Do one of the following:
	
	    ◆ To add the selected servers to a new L4 switch definition, select *Create New* and specify the DNS name or IP address of the L4 switch, then click *OK*.
	
	    ◆ To add the selected servers to an existing L4 switch definition, select an L4 switch definition from the list in the *Select Existing* field, then click *OK*.
	
	4. Click *Apply* to make the change effective.	

Reorder the list	1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click *Move Up* or *Move Down* as necessary to change its order in the list. 3. Repeat as necessary to order the list.	Placement in the list determines the order in which servers are contacted. The first list item (server, group, or L4 switch) is contacted first, then the second, and so forth. You can order the items in the lists differently. This allows you to spread the workload initiated by devices by placing different servers higher in one list than in the other lists. For example: ◆ **Collection Servers:** Server1, Group1, Server3, L4Switch5 ◆ **Content Servers:** L4Switch5, Server2, Server3, Server1 ◆ **Configuration Servers:** Server3, Server2, Group1 ◆ **Authentication Servers:** Group1, L4Switch5, Server1, Server2
Remove servers from an L4 switch definition	1. In the server list, expand the L4 switch definition to display its servers. 2. Select the check boxes for the servers that you want to remove from the L4 switch definition. 3. Click *L4 Switch > Remove from L4 Switch Definition*, then click *OK*. 4. Click *Apply* to make the change effective.	The servers are not removed from the server list, only from the L4 switch definition.

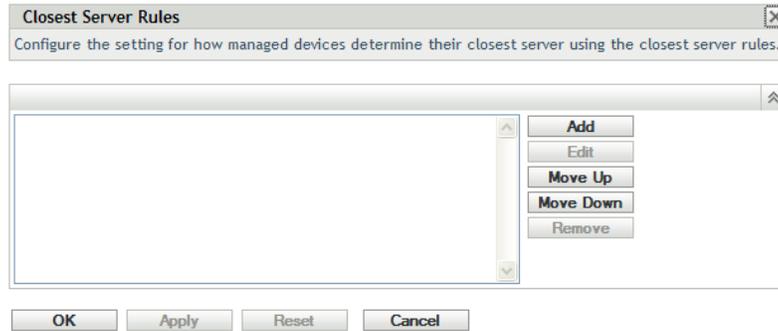| Task	Steps	Additional Details
Remove an L4 switch definition	1. In the server list, click *L4 Switch > Remove L4 Switch Definition*, then click *OK*. 2. Click *Apply* to make the change effective.	The L4 switch definition's servers are not removed, only the definition.

9 Specify the number of ZENworks servers whose data must be sent to the managed devices at a time. The available options are:

   ◆ **Unlimited:** By default, the contact information about all servers listed in the effective rule's lists are sent to the managed devices. In addition, unless excluded in the effective rule, the servers listed in the default rule are appended to the servers listed in the effective rule.

   ◆ **Limit to <number> Servers per list:** If you want to converse bandwidth between the server and the managed devices, specify the number of servers whose data must be sent to the managed devices at a time.

   NOTE: You can also configure the *Limit Servers Returned to Agent* setting in the Closest Server Default rule. The limit that you set in the Closest Server rule overrides the limit that you set in the Closest Server Default rule.

10 When you are finished, click *OK* to add the rule to the *Closest Server Rules* list.

11 Repeat Step 2 through Step 10 to create additional rules.

12 If necessary, when you are finished creating rules, do the following:

   ◆ Use the *Move Up* and *Move Down* buttons to reorder the rules in the *Closest Server Rules* list.

   The rules are evaluated in the order they are listed. You should place the rules in the order you want them evaluated.

   ◆ To modify the settings of a rule, select the desired rule, then click *Edit*.

8.4 Backing Up Closest Server Rules

If your ZENworks Management Zone has complex Closest Server rules configured, you might want to export these rules as part of your backup procedure.

The following zman commands are useful when backing up Closest Server rules:

   ◆ **location-copy-rules (loccp):** Copies Closest Server rules data from a source device or device folder to one or more destination devices or device folders.

   ◆ **location-export-rules-to-file (loctf):** Exports Closest Server rules data (in XML format) to a file. The XML file can be used as input for creating or appending to the Closest Server rules.

   ◆ **location-import-rules-from-file (locff):** Imports Closest Server rules data (in XML format) from a file.

For more information about these commands and their usage, see "Location Rules Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

Backing Up and Restoring the ZENworks Server and Certificate Authority

The following sections provide more information about backing up and restoring a ZENworks Server and Certificate Authority:

9.1 Backing Up a ZENworks Server

Novell ZENworks 10 Asset Management allows you to back up and restore the configuration files for a ZENworks Primary Server. This enables you to maintain a ZENworks Server's identity and configuration if a server fails or if you need to upgrade to new server hardware.

A ZENworks Server only needs to be backed up once. The backup saves only the configuration files. The following items must be backed up separately:

- The content repository . You should do a separate backup for the content repository if you only have one Primary Server in the Management Zone. If you have two or more Primary Servers and you've replicated all content to both servers, they serve as backup copies to each other.

- The ZENworks database (if it resides on the ZENworks Server). Backing up the ZENworks Server and backing up the ZENworks database are two separate processes. If your ZENworks database resides on the same server as one of your ZENworks Servers, first back up the database and then back up the ZENworks Server. Because the ZENworks database changes frequently, you should back up the database on a regular schedule. For information about backing up the database, see Part VII, "Database Management," on page 241.

When you back up a ZENworks Server using a zman command, all files in the `Novell\ZENworks\conf` directory on a Windows server or the `etc/opt/novell/zenworks/` directory on a Linux server are stored in an encrypted backup file in a location that you specify.

1 (Conditional) If the server you are backing up hosts the ZENworks database, manually back up the database file to a safe location.

   For information about backing up the database, see Part VII, "Database Management," on page 241.

2 At a command prompt on the ZENworks Server, enter the following command:

   `zman zenserver-backup` *path_to_backup_file_to_create*

   For example:

   `zman zenserver-backup c:\zcm_backups\zone_backup.bak`

   or

```
zman zenserver-backup /root/zcm_backups/zone_backup.bak
```

3 When prompted, enter a ZENworks administrator name and password.

4 When prompted, enter a passphrase (at least 10 characters) to be used for encrypting the backup file.

Make sure you remember this passphrase. You must enter it if you ever need to restore the server.

5 (Conditional) If this is your only Primary Server, or if this is the only Primary Server that contains all content defined in your Management Zone, manually back up your content repository to a safe location.

IMPORTANT: If this is the only Primary Server that contains all of your defined content for the Management Zone and you do not back up the content repository, you are not prepared for a full disaster recovery.

---

6 Repeat Step 1 and Step 5 on a regular basis.

The zman command documented in Step 2 through Step 4 only needs to be run once.

9.2 Restoring a ZENworks Server

This procedure assumes the following:

◆ You have a backup of the ZENworks Server's configuration information. See Section 9.1, "Backing Up a ZENworks Server," on page 105.

◆ If the ZENworks database resides on the ZENworks Server, you have a backup of the database. See Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245.

IMPORTANT: When you restore the ZENworks Server and the database, you must first restore the ZENworks Server, then continue with restoring the latest backed-up ZENworks database.

To restore a ZENworks server:

1 Reinstall the ZENworks Server, using the same IP address and DNS name.

If you do not use the same IP address and DNS name, any devices that connect to the server need to reregister.

If you have only one Primary Server connected to an external database in a zone, reinstall the Primary server and create a dummy database during the installation. You do not need to create an internal database.

If you have more than one Primary server connected to an external database in a zone, reinstall the failed Primary server as a second Primary Server. You are not prompted to configure the database during the installation.

2 Ensure that you have read/write rights to the `Novell\ZENworks\conf` directory on a Windows server or the `etc/opt/novell/zenworks` directory on a Linux server.

3 At a command prompt on the ZENworks Server, enter the following command:

```
zman zenserver-restore path_to_backup_file_to_restore
```

For example:

```
zman zenserver-restore c:\zcm_backups\zone_backup.bak
```

or

```
zman zenserver-restore /root/zcm_backups/zone_backup.bak
```

4 When prompted, enter a ZENworks administrator name and password.

5 When prompted, enter the passphrase (at least 10 characters) to be used for decrypting the backup file.

This is the same passphrase that was entered to encrypt the file when backing up the server.

6 (Conditional) If the database is located on the server, restore the database after the ZENworks Server information has been restored. For instructions, see Section 28.4, "Restoring the Embedded Sybase SQL Anywhere Database," on page 252.

7 Restart the ZENworks Server.

9.3 Backing Up the Certificate Authority

To back up the Certificate Authority files on the Primary Server that is configured to be the ZENworks internal Certificate Authority:

1 At the command prompt of the ZENworks Server, enter the following command:

```
zman certificate-authority-export (certificate-authority-export/cae)
[options] (file path)
```

This command exports the key-pair credentials of the zone Certificate Authority to a file. For more information about zman Certificate Authority commands, see "zman(1)"in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Enter the username and password of the administrator of the Management Zone.

3 Enter a passphrase for the file encryption.

Make sure you remember this passphrase. You must enter it if you ever need to restore the server.

9.4 Restoring the Certificate Authority

To restore the Certificate Authority files on the Primary Server that is configured to be the ZENworks internal Certificate Authority:

1 At the command prompt of the ZENworks Server, enter the following zman command:

```
zman certificate-authority-import (certificate-authority-import/cai) (file
path)
```

This command imports the key-pair credentials of the zone certificate authority from a file. For more information about zman Certificate Authority commands, see "zman(1)" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Enter the username and password of the administrator of the Management Zone.

3 Enter the file encryption passphrase you specified when you backed up the Certificate Authority files (Step 3 in Section 9.3, "Backing Up the Certificate Authority," on page 107).

4 Manually open the CaConfig.xml file, which is located in *ZENworks_installation_directory*\conf\security\ directory on Windows and in the /etc/opt/novell/zenworks/security/ directory on Linux, to ensure that the <Keystore> tag contains the correct path of zenca.keystore. The zenca.keystore file is located by default in the *ZENworks_installation_directory*\security\ directory on Windows and in the /etc/opt/novell/zenworks/security/ directory on Linux.

5 (Conditional) If you edit the `zenca.keystore` path in the `CaConfig.xml` file in Step 4, you must restart the Novell ZENworks Server service:

 - **On Windows:** Do the following:

   1. From the Windows desktop Start menu, click *Settings > Control Panel*.

   2. Double-click *Administrative Tools > Services*.

   3. Restart *Novell ZENworks Server*.

 - **On Linux:** At the console prompt, enter `/etc/init.d/novell-zenserver restart`.

Disaster Recovery

The following sections explain the disaster recovery mechanisms available in Novell ZENworks 10 Asset Management that help you protect the first Primary Server of a Management Zone if an organizational risk assessment identifies a need for such steps:

10.1 Replacing the First Primary Server with the Second Primary Server

You can replace the first Primary Server in your Management Zone with an existing second Primary Server or with a new server. If you choose to replace the first Primary Server with a new server that has a different hostname and IP address, you must install ZENworks 10 Asset Management on the new server in the same Management Zone. Consequently, the new server becomes the second Primary Server.

The first Primary Server and the second Primary Server must have the same version of the ZENworks 10 Asset Management installed.

NOTE: This scenario has been tested on the following platform combinations:

- Windows Server 2003 (32-bit) to Windows Server 2008 (32-bit)
- SUSE Linux Enterprise Server (SLES) 10 (32-bit) to SLES 10 (32-bit)

It has not been tested with ZENworks Reporting Server.

This scenario is not supported on Windows to Linux and vice-versa platform combinations.

To replace the first Primary Server with the second Primary Server:

1 Make sure that all the contents of the `content-repo` directory of the first Primary Server are replicated to the second Primary Server.

   The `content-repo` directory is located in the *ZENworks_installation_directory*\work\ directory on Windows and in the `/var/opt/novell/zenworks/` directory on Linux.

2 Export the Certificate Authority role.

   2a Take a reliable backup of the Certificate Authority of the first Primary Server.

   For detailed information on how to take a backup of the Certificate Authority, see Section 9.3, "Backing Up the Certificate Authority," on page 107.

   IMPORTANT: You must use the `-d` option with the `zman certificate-authority-export` command to remove the Certificate Authority role of the local server.

2b Restore the backed-up Certificate Authority on the second Primary Server.

For detailed information on how to restore a backed-up Certificate Authority, see Section 9.4, "Restoring the Certificate Authority," on page 107.

3 In the default closest server rule at the Management Zone level, move the first Primary Server as the last entry in the servers list.

3a In ZENworks Control Center, click the *Configuration* tab.

3b In the Management Zone Settings panel, click *Infrastructure Management > Closest Server Default Rule*.

3c In the *Collection Servers* list, select the check box next to the first Primary Server, then click *Move Down* until the server is the last entry in the list.

3d In the *Content Servers* list, select the check box next to the first Primary Server, then click *Move Down* until the server is the last entry in the list.

3e In the *Configuration Servers* list, select the check box next to the first Primary Server, then click *Move Down* until the server is the last entry in the list.

3f Click *OK*.

4 (Conditional) If you have any additional closest server rules configured, remove the first Primary Server from the rules.

4a In ZENworks Control Center, click the *Configuration* tab.

4b In the Management Zone Settings panel, click *Infrastructure Management > Closest Server Rules*.

4c Select a closest server rule, then click *Edit*.

The Rule Construction dialog box is displayed.

4d In the *Collection Servers* list, select the check box next to the first Primary Server, then click *Remove*.

4e In the *Content Servers* list, select the check box next to the first Primary Server, then click *Remove*.

4f In the *Configuration Servers* list, select the check box next to the first Primary Server, then click *Remove*.

4g Click *OK* twice.

5 Refresh all the devices (Primary Serves, Satellites, and managed devices) in the Management Zone so that they get the new closest server rules.

6 (Optional) Reregister all the managed devices and Satellites to the new Primary Server.

NOTE: You can choose not to perform this step because there is no loss in the functionality. However, the ZENworks icon and the `zac zone-config` command continue to display the IP address and the host name of the retired Primary Server.

To reregister the devices, perform the following tasks on all the devices:

6a Unregister the device from the Management Zone by running the following command:

```
zac unr -f
```

6b Register the device in the Management Zone by running the following command:

```
zac reg https://ZENworks_Server_DNS_name:port_number
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

7 (Conditional) Move the database to another device in any of the following scenarios:

- ◆ You are using an internal ZENworks database (embedded Sybase SQL Anywhere).
- ◆ You are using an external database installed on the device hosting the first Primary Server and you do not plan to use the device after uninstalling the Primary Server.

To move the database to another device:

7a (Conditional) If you are using an external database, ensure that you have a reliable backup of the database.

7b Obtain the credentials of the database.

To procure the credentials of the internal database, use one of the following commands:

```
zman dgc -U administrator_name -P administrator_password
```

or

```
zman database-get-credentials -U administrator_name -P
administrator_password
```

To obtain the credentials of the external database, contact the database administrator.

7c Remove the database role from the first Primary Server:

7c1 Log into the database.

7c2 In the SQL editor, execute the following SQL query to remove the database role entry for the first Primary Server from the zZENServerRoles table:

```
delete from zZENServerRoles where Roles='Database';
```

7c3 In the SQL editor, execute the following SQL command:

```
commit;
```

7d If the database is installed on the same device as that of the first Primary Server, move the database.

Internal Sybase: For detailed information on how to move the data from an internal Sybase database to an external Sybase database, see Section 28.6, "Moving the Data from an Embedded Sybase Database to an External Sybase Database," on page 259.

External Sybase: For detailed information on how to move the data from one external Sybase database to another external Sybase database, see Section 29.3, "Moving the Data from One External Sybase Database to another External Sybase Database," on page 281.

MS SQL: For detailed information on how to move the data to a new MS SQL database, see the MS SQL documentation. Later on, perform the steps described in Section 29.6, "Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database," on page 292.

Oracle: For detailed information on how to move the data from one Oracle database to another Oracle database, see the Oracle documentation. Later on, perform the steps described in Section 29.7, "Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database," on page 295.

8 Remove all Satellites under the first Primary Server from the Server Hierarchy.

For more information on how to remove the Satellites from the Server Hierarchy listing in ZENworks Control Center, see Section 6.5, "Removing Satellites from the Server Hierarchy," on page 82.

9 Retire the first Primary Server by entering one of the following commands at the second Primary Server prompt:

`zman zsret` *first_primary_server_object_name*

or

`zman zenserver-retire` *first_primary_server_object_name*

For more information about zman, view the zman man page (`man zman`) on the server or see "zman(1)"in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

10 After ensuring that all the operations in the Management Zone are working as expected, uninstall ZENworks 10 Asset Management on the first Primary Server.

For detailed information on how to uninstall ZENworks 10 Asset Management, see "Uninstalling ZENworks Software" in the *ZENworks 10 Asset Management Installation Guide*.

10.2 Replacing an Existing Primary Server with a New Primary Server

If you have only one Primary Server in the Management Zone and if you want to replace the device hosting the Primary Server with a new device that has the same hostname and IP address as the old device, you must move the Primary Server to the new device.

The existing Primary Server and the new Primary Server must have the same version of the ZENworks 10 Asset Management installed.

NOTE: This scenario has been tested on the following platform combinations:

- Windows Server 2003 (32-bit) to Windows Server 2008 (32-bit)
- SUSE Linux Enterprise Server (SLES) 10 (32-bit) to SLES 10 (32-bit)

It has not been tested with ZENworks Reporting Server.

This scenario is not supported on Windows to Linux and vice-versa platform combinations.

1 Take a reliable backup of the existing ZENworks Server.

For detail information on how to take a backup of the ZENworks Server, see Section 9.1, "Backing Up a ZENworks Server," on page 105.

2 Take a reliable backup of the Certificate Authority of the Primary Server.

For detail information on how to take a backup of the Certificate Authority, see Section 9.3, "Backing Up the Certificate Authority," on page 107.

3 (Conditional) Take a reliable backup of database in any of the following scenarios:

- You are using an internal ZENworks database (embedded Sybase SQL Anywhere).
- You are using an external database installed on the device hosting the Primary Server and you do not plan to use the device after uninstalling the Primary Server.

For detailed information on how to take a backup of an internal database, see Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245.

To take a backup of an external database, see the documentation for the database.

4 Stop all the ZENworks services on the Primary Server.

For detailed information on how to stop the ZENworks services on Windows, see Section 5.1.3, "Stopping the ZENworks Services," on page 67. For detailed information on how to stop the ZENworks services on Linux, see Section 5.2.3, "Stopping the ZENworks Services," on page 69

5 Take a reliable backup of the `content-repo` directory of the Primary Server.

The `content-repo` directory is located in the `ZENworks_installation_directory\work\` directory on Windows and in the `/var/opt/novell/zenworks/` directory on Linux.

6 Disconnect the device from the network.

7 Ensure that the hostname and the IP address of the new server are same as those of the old Primary Server.

8 Install ZENworks 10 Asset Management on the new server with the following settings that are same as that of the old Primary Server:

- ◆ Installation drive and path
- ◆ ZENworks Ports
- ◆ Management Zone name

For detailed information on how to install ZENworks 10 Asset Management, see "Installing the ZENworks Server" in the *ZENworks 10 Asset Management Installation Guide*.

9 Do the following on the new Primary Server:

9a Restore the backed-up ZENworks Server.

For detailed information on how to restore the ZENworks Server, see Section 9.2, "Restoring a ZENworks Server," on page 106.

9b (Conditional) Restore the backed-up database.

For detailed information on how to restore the internal ZENworks database, see Section 28.4, "Restoring the Embedded Sybase SQL Anywhere Database," on page 252.

9c Restore the backed-up Certificate Authority.

For detailed information on how to restore the Certificate Authority, see Section 9.4, "Restoring the Certificate Authority," on page 107.

9d (Conditional) If the Primary Server has only ZENworks 10 Configuration Management SP3 (10.3.0) installed, perform the steps mentioned in TID 7005781 that is available in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

9e Re-create all the default and custom deployment packages.

Default Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

Custom Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks- configure -c RebuildCustomPacks -Z
```

9f Copy the backed-up `content-repo` directory to the `ZENworks_installation_directory\work\` directory on Windows or to the `/var/opt/novell/zenworks/` directory on Linux.

10 Ensure that the new server is running correctly. Subsequently, uninstall ZENworks Asset Management from the old device.

For detailed information on how to uninstall ZENworks 10 Asset Management see "Uninstalling ZENworks Software" in the *ZENworks 10 Asset Management Installation Guide*.

10.3 Re-Creating Certificates

You need to re-create certificates in the following scenarios:

- Section 10.3.1, "Changing the Internal Certificate to an External Certificate on a Primary Server," on page 114
- Section 10.3.2, "Changing the IP Address of the Primary Server after Installing ZENworks 10 Configuration Management," on page 118
- Section 10.3.3, "Changing the DNS Name or the IP Address and DNS Name of the Primary Server after Installing ZENworks 10 Configuration Management," on page 119

IMPORTANT: ZENworks 10 Configuration Management SP3 currently does not support changing the external certificate to an internal certificate on Primary Servers.

10.3.1 Changing the Internal Certificate to an External Certificate on a Primary Server

On a Windows or Linux Primary Server, if you want to change the existing internal certificate to an external certificate or replace an expired server certificate with a new external certificate, perform the following tasks to create a new external certificate:

1 Before changing the internal certificate to an external certificate, take a reliable backup of the following on all the Primary Servers in the Management Zone:

- **Content-Repo Directory:** The `content-repo` directory is located by default in the `ZENworks_installation_directory`\work directory on Windows and in the `/var/opt/novell/zenworks/` on Linux.

  Ensure that the `images` directory located within the `content-repo` directory has been successfully backed up.

- **Certificate Authority:** For detailed information on how to take a backup of the Certificate Authority, see Section 9.3, "Backing Up the Certificate Authority," on page 107.

- **Embedded Database:** For detailed information on how to take a backup of the embedded database, see Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245.

2 Create a Certificate Signing Request (CSR) by providing the hostname of the Primary Server as the subject.

For more information on how to create a CSR, see "Creating an External Certificate" in the *ZENworks 10 Asset Management Installation Guide*.

3 Replace the existing certificate with the newly created external certificate on all the devices in the Management Zone in the order listed below:

1. "Replacing the Existing Certificate with the New External Certificate on the Primary Servers" on page 115

Replacing the Existing Certificate with the New External Certificate on the Primary Servers

Perform the following tasks on all the Primary Servers in the Management zone whose certificate you want to change:

1 Reconfigure the certificates on the Primary Server whose IP address and DNS name you changed in Step 2 by entering the following command at the server's command prompt:

`novell-zenworks-configure -c SSL -Z`

Follow the prompts.

2 (Conditional) If the Primary Server has only ZENworks 10 Configuration Management SP3 (10.3.0) installed, perform the steps mentioned in TID 7005781that is available in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

3 Restart all the ZENworks services by running the following command:

`novell-zenworks-configure -c Start`

By default, all the services are selected. You must select *Restart* as the *Action*.

4 Clear the ZENworks cache.

On Windows: Run the following commands:

`zac cc`

`delete ZENworks_installation_directory>\Novell\ZENworks\ cache\zmd\ /s`

On Linux: Run the following commands:

`zac cc`

`rm -rf /var/opt/novell/zenworks/zmd/cache`

5 Restart the ZENworks Adaptive Agent Service.

NOTE: After you perform steps 4 and 5, the agent is locally unregistered from the zone because it loses trust with the Primary Server, which has a new certificate.

6 Register the ZENworks Adaptive Agent to the Primary Server on which the agent is installed by entering the following command at the server's console prompt:

`zac reg https://`
`IP_address_of_the_Primary_Server_on_which_the_agent_is_installed:port_num`
`ber`

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

7 (Conditional) If the Primary Server has only ZENworks 10 Configuration Management SP3 (10.3.0) installed, edit the `initial-web-service` file to change the first line to:

`https://localhost:port_number;https://127.0.0.1:port_number`

Where, *port_number* is the port on which the server is running.

The `initial-web-service` file is located in the `ZENworks_installation_directory`\Novell\ZENworks\conf directory on Windows and in the `/etc/opt/novell/zenworks/` directory on Linux.

8 Re-create all the default and custom deployment packages.

Default Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

Custom Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks- configure -c RebuildCustomPacks -Z
```

Replacing the Existing Certificate with the New External Certificate on the Satellites

Perform the following tasks at the command prompt of each Satellite registered to the Primary Server whose certificate you changed:

1 Run the following command to force the device to be unregistered locally:

```
zac unr -f
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Clear the ZENworks cache.

On Windows: Run the following commands:

```
zac cc
```
```
delete c:\program files\novell\zenworks\cache\zmd /s
```

On Linux: Run the following commands:

```
zac cc
```
```
rm -rf /var/opt/novell/zenworks/zmd/cache
```

3 Restart the ZENworks Adaptive Agent Service.

4 Restart the Proxy DHCP services on all the Satellites.

5 Run the following command to register the device in the Management Zone:

```
zac reg https://ZENworks_Server_DNS_name:port_number
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

6 (Conditional) If a Satellite in the Management zone has the Authentication role configured, perform the following tasks:

  6a Remove the Authentication role from the device.

  For more information on how to remove the Authentication role from the device, see Section 6.4, "Removing the Roles from a Satellite," on page 82.

  6b Configure the Satellite with the new external certificates by entering the following command at the Satellite's prompt:

```
zac import-authentication-cert(iac)[-pk <private-key.der>] [-c
<signed-servercertificate.der>] [-ca <signing-authority-public-
certificate.der>] [-ks<keystore.jks>] [-ksp <keystore-pass-phrase>] [-
a <signed-cert-alias>] [-ks<signed-cert-passphrase>] [-u username] [-p
password]
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

6c Add the Authentication role to the device.

For more information on how to add the Authentication role to a device, see Section 6.2.1, "Authentication Role," on page 79.

6d (Conditional) If the Satellite has only the Authentication role configured, and if the device had been included in the Closest Server rule, reconfigure the Closest Server rule to include the Satellite.

1. In the default Closest Server rule, ensure that device has been correctly placed in the Authentication Servers list. If necessary, change the placement of the device in the list.

2. (Optional) Manually add the device to any other non-default Closest Server rule.

For more information on working with Closest Server rules, see Chapter 8, "Closest Server Rules," on page 89.

Replacing the Existing Certificate with the New External Certificate on the Managed Devices

Perform the following steps at the command prompt of each managed device registered to the Primary Server whose certificate you changed:

1 Locally unregister all the managed devices by entering the following command at the managed device's prompt:

```
zac unr -f
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Clear the cache and delete the contents of the *ZENworks_installation_directory*\Novell\ZENworks\cache\zmd directory by entering the following commands at each managed device's prompt.

```
zac cc
```

```
delete ZENworks_installation_directory>\Novell\ZENworks\cache\zmd\ /s
```

3 Restart the ZENworks Adaptive Agent Service.

4 Run the following command to register the device in the Management Zone:

```
zac reg https://ZENworks_Server_DNS_name:port_number
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

10.3.2 Changing the IP Address of the Primary Server after Installing ZENworks 10 Configuration Management

If you want to change the IP address of the Primary Server after installing ZENworks 10 Configuration Management SP3, and if the CN of the certificate does not have the IP address configured, use the following steps to change the IP address of the Primary Server:

NOTE: This scenario has been tested only on the Windows Primary Server and the embedded Sybase database. In this setup, the DNS and DHCP servers are configured on the same device.

1 Before changing the IP address of the Primary Server, take a reliable backup of the following on all the Primary Servers in the Management Zone:

- **Content-Repo Directory:** The `content-repo` directory is located by default in the `ZENworks_installation_directory`\work directory on Windows and in the `/var/opt/novell/zenworks/` on Linux.

  Ensure that the `images` directory located within the `content-repo` directory has been successfully backed up.

- **Certificate Authority:** For detailed information on how to take a backup of the Certificate Authority, see Section 9.3, "Backing Up the Certificate Authority," on page 107.

- **Embedded Database:** For detailed information on how to take a backup of the embedded database, see Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245.

2 Change the IP address of the Primary Server.

IMPORTANT: Do not change the DNS name of the server.

3 Ensure that the new IP address of the server is correctly mapped to its existing DNS name on the DNS server.

4 Restart all the ZENworks services by running the following command at the server's command prompt:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

5 Re-create all the default and custom deployment packages.

Default Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

Custom Deployment Packages: At the server's command prompt, enter the following command:

```
novell-zenworks- configure -c RebuildCustomPacks -Z
```

6 If the database is located on the Primary Server whose IP address you changed in Step 2, you must change the database server address on all the second Primary Servers. On all the second Primary Servers, change the value of database server address in the `ZENworks_Installation_Directory`\Novell\ZENworks\conf\datamodel\zdm.xml to point to the new IP address of the first Primary Server.

7 Restart the ZENworks Adaptive Agent.

8 Restart the Proxy DHCP services on all the Satellites.

10.3.3 Changing the DNS Name or the IP Address and DNS Name of the Primary Server after Installing ZENworks 10 Configuration Management

If you want to change only the DNS name or if you want to change both the IP address and DNS name of the Primary Server after installing ZENworks 10 Configuration Management SP3, and if the certificate's CN has fully qualified DNS configured, use the following steps to change only the DNS name or to change both the IP address and DNS name of the Primary Server:

NOTE: This scenario has been tested only on the Windows Primary Server and the embedded Sybase database. In this setup, the DNS and DHCP servers are configured on the same device.

1 Before changing the IP address of the Primary Server, take a reliable backup of the following on all the Primary Servers in the Management Zone:

  ◆ **Content-Repo Directory:** The `content-repo` directory is located by default in the `ZENworks_installation_directory`\work directory on Windows and in the `/var/opt/novell/zenworks/` on Linux.

   Ensure that the `images` directory located within the `content-repo` directory has been successfully backed up.

  ◆ **Certificate Authority:** For detailed information on how to take a backup of the Certificate Authority, see Section 9.3, "Backing Up the Certificate Authority," on page 107.

  ◆ **Embedded Database:** For detailed information on how to take a backup of the Embedded database, see Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245.

2 Do one of the following:

  ◆ Change the IP address and the DNS name of the Primary Server.

  ◆ Change the DNS name only of the Primary Server.

3 Reboot the Primary Server.

4 Ensure that the DNS entry of the Primary Server has been updated with the new DNS name.

5 Create a Certificate Signing Request (CSR) by providing the hostname of the Primary Server as the subject.

   For more information on how to create a CSR, see "Creating an External Certificate" in the *ZENworks 10 Asset Management Installation Guide*.

6 (Conditional) If the Primary Server whose DNS name you changed hosts the database, and if the database server IP address or DNS name has been changed, do the following on all Primary Servers:

  6a Ensure that the database server IP address or DNS name has been configured correctly in the `zdm.xml` file, which is located in the `ZENworks_Installation_Directory`\Novell\ZENworks\conf\datamodel\ directory on Windows, and in the `/etc/opt/novell/zenworks/datamodel/` directory on Linux.

6b Restart the following services:

- ◆ Novell ZENworks Server
- ◆ Novell ZENworks Loader
- ◆ Novell ZENworks Agent Service

7 Replace the existing certificate with the newly created external certificate on all the devices in the Management Zone in the order listed below:

1.

2.

3.

Replacing the Existing Certificate with the New External Certificate on the Primary Servers

Perform the following tasks on all the Primary Servers in the Management zone whose certificate you want to change:

1 Reconfigure the certificates on the Primary Server whose IP address and DNS name you changed in by entering the following command at the server's command prompt:

```
novell-zenworks-configure -c SSL -Z
```

Follow the prompts.

2 (Conditional) If the Primary Server has only ZENworks 10 Configuration Management SP3 (10.3.0) installed, perform the steps mentioned in TID 7005781that is available in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

3 Restart all the ZENworks services by running the following command:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

4 Clear the ZENworks cache.

On Windows: Run the following commands:

```
zac cc
```

```
delete ZENworks_installation_directory>\Novell\ZENworks\ cache\zmd\ /s
```

On Linux: Run the following commands:

```
zac cc
```

```
rm -rf /var/opt/novell/zenworks/zmd/cache
```

5 Restart the ZENworks Adaptive Agent Service.

NOTE: After you perform steps 4 and 5, the agent is locally unregistered from the zone because it loses trust with the Primary Server, which has a new certificate.

---

6 Register the ZENworks Adaptive Agent installed on the Primary Server to the correct Primary Server by entering the following command at the device's command prompt:

```
zac reg https://IP_address_of_the_correct_Primary_Server:port_number
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

7 (Conditional) If the Primary Server has only ZENworks 10 Configuration Management SP3 (10.3.0) installed, edit the `initial-web-service` file to change the first line to:

`https://localhost:`*`port_number`*`;https://127.0.0.1:`*`port_number`*

Where, *port_number* is the port on which the server is running.

The `initial-web-service` file is located in the *`ZENworks_installation_directory`*`\Novell\ZENworks\conf` directory on Windows and in the `/etc/opt/novell/zenworks/` directory on Linux.

8 Re-create all the default and custom deployment packages.

Default Deployment Packages: At the server's command prompt, enter the following command:

`novell-zenworks-configure -c CreateExtractorPacks -Z`

Custom Deployment Packages: At the server's command prompt, enter the following command:

`novell-zenworks- configure -c RebuildCustomPacks -Z`

Replacing the Existing Certificate with the New External Certificate on the Satellites

Perform the following tasks at the command prompt of each Satellite registered to the Primary Server whose certificate you changed:

1 Run the following command to force the device to be unregistered locally:

`zac unr -f`

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Clear the ZENworks cache.

On Windows: Run the following commands:

`zac cc`

`delete c:\program files\novell\zenworks\cache\zmd /s`

On Linux: Run the following commands:

`zac cc`

`rm -rf /var/opt/novell/zenworks/zmd/cache`

3 Restart the ZENworks Adaptive Agent Service.

4 Restart the Proxy DHCP services on all the Satellites.

5 Run the following command to register the device in the Management Zone:

`zac reg https://`*`ZENworks_Server_DNS_name:port_number`*

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

6 (Conditional) If a Satellite in the Management zone has the Authentication role configured, perform the following tasks:

6a Remove the Authentication role from the device.

For more information on how to remove the Authentication role from the device, see Section 6.4, "Removing the Roles from a Satellite," on page 82.

6b Configure the Satellite with the new external certificates by entering the following command at the Satellite's prompt:

```
zac import-authentication-cert(iac)[-pk <private-key.der>] [-c
<signed-servercertificate.der>] [-ca <signing-authority-public-
certificate.der>] [-ks<keystore.jks>] [-ksp <keystore-pass-phrase>] [-
a <signed-cert-alias>] [-ks<signed-cert-passphrase>] [-u username] [-p
password]
```

For more information about zac, view the zac man page (man zac) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

6c Add the Authentication role to the device.

For more information on how to add the Authentication role to a device, see Section 6.2.1, "Authentication Role," on page 79.

6d (Conditional) If the Satellite has only the Authentication role configured, and if the device had been included in the Closest Server rule, reconfigure the Closest Server rule to include the Satellite.

1. In the default Closest Server rule, ensure that device has been correctly placed in the Authentication Servers list. If required, change the placement of the device in the list.

2. (Optional) Manually add the device to any other non-default Closest Server rule.

For more information on working with Closest Server rules, see Chapter 8, "Closest Server Rules," on page 89.

Replacing the Existing Certificate with the New External Certificate on the Managed Devices

Perform the following steps at the command prompt of each managed device registered to the Primary Server whose certificate you changed:

1 Locally unregister all the managed devices by entering the following command at the managed device's prompt:

```
zac unr -f
```

For more information about zac, view the zac man page (man zac) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Clear the cache and delete the contents of the *ZENworks_installation_directory*\Novell\ZENworks\cache\zmd directory by entering the following commands at each managed device's prompt.

```
zac cc
```

```
delete ZENworks_installation_directory>\Novell\ZENworks\cache\zmd\ /s
```

3 Restart the ZENworks Adaptive Agent Service.

4 Run the following command to register the device in the Management Zone:

```
zac reg https://ZENworks_Server_DNS_name:port_number
```

For more information about zac, view the zac man page (`man zac`) on the device or see the *ZENworks 10 Asset Management Command Line Utilities Reference*.

This replaces the server certificate in the local cache.

ZENworks Adaptive Agent
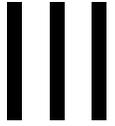
The ZENworks Adaptive Agent is part of the Novell ZENworks 10 Asset Management software that lets you manage devices over the network. The ZENworks Adaptive Agent, commonly referred to as the Adaptive Agent, provides services that do the following without requiring you to visit individual devices:

- Deliver system updates to devices.
- Take inventory of device hardware and software.
- Act as a Satellite to help distribute content and collect inventory and device messages.

Each of these services is provided through the use of modules that plug in to the Adaptive Agent. Using ZENworks Control Center, you can configure which modules are active on devices, thus controlling which services are available on those devices. You can also configure a variety of other Adaptive Agent settings.

The following sections contain more information:

Viewing the Version of the Adaptive Agent Software and Modules on a Device

11

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

2. Click *Servers* to view the Adaptive Agent software version on a server.

   or

   Click *Workstations* to view the Adaptive Agent software version on a workstation.

3. Click the underlined link for the desired device.

4. In the General section, view the version in the *ZENworks Agent Version* row.

5. (Optional) Click the underlined version number to display a list of the ZENworks Agent modules that are installed on the device, along with their version numbers.

   You can uninstall, enable, or disable the ZENworks modules by using the ZENworks Agent settings on the device's Settings page. For more information, see "Agent Features" on page 134.

Searching for Devices that Have a Specified Version of the Adaptive Agent

12

For upgrading or troubleshooting purposes, you can use the Advanced Search feature to display a list of devices in your ZENworks Management Zone that have a specified version of the Adaptive Agent software installed.

1 Depending on whether you want to search for all devices (servers and workstations), for servers, or for workstations that have the specified version of the Adaptive Agent installed, do one of the following in ZENworks Control Center:

  ◆ To search for all devices, click the *Devices* tab.

  ◆ To search for all servers, click the *Devices* tab > *Servers*.

  ◆ To search for all workstations, click the *Devices* tab > *Workstations*.

2 In the Search section, click *Advanced Search*.

3 Click *Add* to display the Search Criteria dialog box.

4 Click *Add Filter*, click *Device/AgentVersion* from the drop-down list, then click *OK*.

Configuring Adaptive Agent Settings after Deployment

13

By default, the ZENworks Adaptive Agent is deployed with the features selected at the Management Zone level in the Agent Features panel of ZENworks Control Center. For more information on how to customize the agent features during deployment, see "Customizing Features before Deployment". After the deployment, you can choose to uninstall, enable or disable the Adaptive Agent features, configure the agent's cache, set retry settings, and select whether to let users uninstall the agent.

You can configure settings at three levels:

- ◆ **Management Zone:** The setting applies to all devices in the Management Zone.
- ◆ **Device Folder:** The setting applies to all devices contained within the folder or its subfolders. It overrides the Management Zone setting.
- ◆ **Device:** The setting applies only to the device for which it is configured. It overrides the settings established at the Management Zone and folder levels.

The following sections contain more information:

- ◆ Section 13.1, "Configuring Agent Settings on the Management Zone Level," on page 131
- ◆ Section 13.2, "Configuring Agent Settings on the Device Folder Level," on page 132
- ◆ Section 13.3, "Configuring Agent Settings on the Device Level," on page 132
- ◆ Section 13.4, "ZENworks Agent Settings," on page 132

13.1 Configuring Agent Settings on the Management Zone Level

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

2 In the *Management Zone Settings* panel, click *Device Management*.

Configuration	Registration	System Information	Asset Inventory	Asset Management	System Updates

Management Zone Settings	⊗
Device Management	⊗

Category	Description
Local Device Logging	Enable and configure local logging of warnings and errors encountered by managed devices.
Device Refresh Schedule	Configure the device refresh interval.
ZENworks Agent	ZENworks Agent Configuration.
Registration	Configure registration settings.
System Variables	Configure system variables.
Primary User	Configure the setting for how the primary user is determined.
Primary Workstation	Configure the setting for how the primary workstation is determined.
Dynamic Group Refresh Schedule	Configure dynamic group refresh schedule.
Wake-on-LAN	Configure the Wake-on-LAN settings.

Discovery and Deployment	⟱
Event and Messaging	⟱
Infrastructure Management	⟱
Inventory	⟱
Reporting Services	⟱
Asset Management	⟱

3 Click *ZENworks Agent*.

4 Fill in the fields. For more information, see Section 13.4, "ZENworks Agent Settings," on page 132.

5 Click *OK* to apply the changes.

13.2 Configuring Agent Settings on the Device Folder Level

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

2 Click the *Servers* or *Workstations* folder.

3 Click *Details* next to the folder for which you want to configure settings.

4 Click the *Settings* tab, click *Device Management*, then click *ZENworks Agent*.

5 Fill in the fields. For more information, see Section 13.4, "ZENworks Agent Settings," on page 132.

6 Click *OK* to apply the changes.

13.3 Configuring Agent Settings on the Device Level

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

2 Click the *Servers* or *Workstations* folder.

3 Click the device for which you want to configure settings.

4 Click the *Settings* tab, click *Device Management*, then click *ZENworks Agent*.

5 Fill in the fields. For more information, see Section 13.4, "ZENworks Agent Settings," on page 132.

6 Click *OK* to apply the changes.

13.4 ZENworks Agent Settings

- Section 13.4.1, "General," on page 132
- Section 13.4.2, "Agent Features," on page 134
- Section 13.4.3, "Agent Preferences," on page 135

13.4.1 General

You can configure the ZENworks Adaptive Agent's cache, whether or not users can uninstall the Adaptive Agent, and set retry settings.

If you are configuring the ZENworks Agent settings on a device folder or a device, click *Override settings*.

The following settings can be configured:

- **Allow Users to Uninstall Agent:** Enable this option if you want users to be able to uninstall the ZENworks Adaptive Agent. This option is applicable only for the local uninstallation.

◆ **Cache Life:** The ZENworks Adaptive Agent's cache directory contains content data used by the agent. Each piece of data, referred to as a cache entry, is stored in the cache database.

When a cache entry is added to the cache database, it is assigned a creation time and an expiration time. The creation time is simply the time it was added to the database. The expiration time is the creation time plus the number of hours specified by the *Cache Life* setting (by default, 336 hours or 14 days). For example, suppose that a cache entry is added on June 10 at 3:00 p.m. With the default *Cache Life* setting, the expiration time is set to June 24 at 3:00 p.m.

The agent does not attempt to update a cache entry until after the entry's expiration time. At that point, the agent updates the cache entry the next time it contacts the ZENworks Server to refresh its information.

> **NOTE:** Updates to expired cache entries occur only for cache entries that are content-related. Updates to cache entries that are event-related only occur at the time the event takes place on the device.

A higher *Cache Life* setting reduces the traffic load on your network because cache entries are refreshed less frequently. A lower setting provides newer information but increases the traffic load.

This setting affects only how often the agent requests updates to a cache entry. Cache entries can also be updated before their expiration time if information is changed in ZENworks Control Center that causes the information to be pushed from the ZENworks Server to the agent.

◆ **Cache Orphaning Threshold:** Over a period of time, it is possible for entries to be inserted in the cache database but not removed. This can cause the cache to grow unnecessarily.

An orphan is an entry that is inserted into the cache but not accessed within the number of days specified by the *Cache Orphaning Threshold* setting. For example, suppose that a cache entry is accessed on July 1 at 10:00 a.m. Without the default *Cache Orphaning Threshold* setting (30 days), the entry becomes an orphan if it is not accessed again before July 31 at 10:00 a.m.

A higher *Cache Orphaning Threshold* setting ensures that infrequently accessed information is not removed from the cache database. A lower setting can reduce the cache size.

◆ **Times to Retry Requests to a Busy Server:** Lets you specify the number of times that the agent retries a request to a busy server before considering the server as bad instead of busy.

The default value is 15. The maximum value that you can specify is 20.

◆ **Initial Retry Request Wait:** The *Initial Retry Request Wait* setting lets you specify the initial amount of time that the agent waits before retrying a Web service request after receiving a busy response from the server. The wait time increases by one second with every busy response. The default setting is four seconds. The maximum value that you can set is ten seconds. Each subsequent request is incremented by one second.

For example, suppose that you leave this setting at the default (four seconds). After receiving a busy response from the server, the agent waits four seconds for the first retry attempt. If the server is still busy, the agent waits five additional seconds (4 + 1) before making the second retry attempt. The third retry attempt is 15 seconds after the initial retry attempt (4 + 5 + 6). The time increments until the value specified in the *Maximum Retry Request Wait* setting is reached. The retry attempts stop when the value specified in the *Times to Retry Requests to a Busy Server* setting is reached.

◆ **Maximum Retry Request Wait:** Lets you specify the maximum amount of time to wait before retrying a Web service request after receiving a busy response from the server.

The default setting is 16 seconds. The maximum value that you can specify is 20 seconds.

13.4.2 Agent Features

The ZENworks Adaptive Agent uses modules to perform the following functions on managed devices:

◆ Asset Management

◆ User Management

If you are viewing the properties of a Windows 2000 device, the User Management options are disabled because user management cannot be disabled or uninstalled from Windows 2000 devices. If you are viewing the properties of the Management Zone or a folder, user management settings are ignored for Windows 2000 devices.

NOTE: You can use ZENworks 10 Asset Management with ZENworks 7 Desktop Management installed in your environment.

If you enable any Agent feature besides Asset Management, and you are running ZENworks 7 Desktop Management in your environment, you are prompted that the ZENworks 7 Desktop Management Agent will be uninstalled.

Ensure that you enable only the Asset Management feature if you want to use ZENworks 10 Asset Management and you want to continue using ZENworks 7 Desktop Management in your environment.

By default, all modules are installed on a device. However, you can uninstall any of the modules. You can also disable (or enable) any of the installed modules.

You can install, uninstall, enable or disable the modules at three levels:

◆ **Management Zone:** The setting applies to all devices in the Management Zone.

◆ **Device Folder:** The setting applies to all devices contained within the folder or its subfolders. It overrides the Management Zone setting.

◆ **Device:** The setting applies only to the device for which it is configured. It overrides the settings established at the Management Zone and folder levels.

To modify a module's state:

1 (Conditional) If you are configuring the ZENworks Agent settings on a device folder or a device, click *Override settings*.

2 To install a module, select the *Installed* check box.

or

To uninstall a module, deselect the *Installed* check box.

By default, the *Installed* check boxes for all modules are selected, meaning that all modules are installed on devices when they register to your ZENworks Management Zone. If you deselect a module's *Installed* check box, that module is uninstalled from the device the next time it refreshes.

3 To enable an installed module, click the *Enabled* button.

or

To disable an installed module, click the *Disabled* button.

By default, the *Enabled* option for all installed modules is selected, meaning that all modules are enabled on devices. Disabling a module does not cause that module to be uninstalled from currently managed devices. The module remains installed on the device, but it is disabled.

4 Specify the reboot behavior if a reboot is required.

This option applies only when installing or uninstalling a module. In some cases, Windows Installer might require a reboot of the device when installing or uninstalling the module. If a reboot is required during install, the module does not function until the reboot occurs. If a reboot is required during uninstall, the module's files are not completely removed until a reboot occurs, but the module stops functioning.

- *Prompt user to reboot (Default)*: The user is prompted to reboot the device. The user can reboot immediately or wait until later.
- *Do not reboot device*: No reboot occurs. The user must initiate a reboot.
- *Force device to reboot*: The device is automatically rebooted. The user is notified that the device will reboot in 5 minutes.

5 Click *Apply* to save the changes.

13.4.3 Agent Preferences

To provide optimal performance the default status upload frequency of the ZENworks Adaptive Agent is 30 minutes. You can choose to override the default status upload frequency by configuring the following preferences on a Windows or Linux managed device:

- "Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Windows Managed Device" on page 135
- "Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Linux Managed Device" on page 135

Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Windows Managed Device

1 On a Windows managed device, open `<CONF_DIR>/StatusSenderConfig.xml` in a text editor.

2 Provide the following values:

```
<configuration>
<StatusSender>
  <Parameter SleepTime=nnn>
</StatusSender>
</configuration>
```

Where `nnn` is the SleepTime in seconds.

Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Linux Managed Device

1 On a Linux managed device, open `/etc/opt/novell/zenworks/conf/xplatzmd.properties` in a text editor.

2 Add the `SleepTime` parameter as: `SleepTime=`*nn*

Where `nn` is the repeat frequency in minutes.

Removing the ZENworks Pre-Agent from a Device

<div align="right">

14

</div>

During the uninstallation of ZENworks software from a device, if you choose to leave the ZENworks Pre-Agent installed on the device, the ZENworks Pre-Agent responds to the Advertised discovery requests and also to ZENworks Ping requests if an IP-based discovery is performed on the device.

To remove the ZENworks Pre-Agent from a device after ZENworks has been uninstalled from the device, perform the following steps:

1 Delete the directory named `ZENPreAgent` from the following registry:

`HKLM\SYSTEM\CurrentControlSet\Services\`

2 Delete the `zenworks` directory from the operating system installation directory on the device. For example, if the operating system is installed in `C:/`:

 ◆ **On a Windows XP device:** Remove `C:\Windows\Novell\zenworks` directory.

 ◆ **On a Windows 2000 device:** Remove `C:\WINNT\Novell\zenworks` directory.

15 Configuring the System Update Behavior of the ZENworks Adaptive Agent

You can configure System Update behavior on the ZENworks Adaptive Agent that resides on managed devices, including whether a dialog box displays on managed devices prompting users to allow the system update or a required boot after a system update is applied, and whether users can postpone the update or reboot. You can also provide custom text in the prompts that you choose to display.

For more information, see .

Troubleshooting the Adaptive Agent

16

The following section provides solutions to the problems you might encounter while working with the ZENworks Adaptive Agent:

- "Satellite menu is not displayed in the left navigation pane of the ZENworks Adaptive Agent page" on page 141
- "Unable to use rights-based authentication to remotely manage a device" on page 141
- "Unable to launch a terminal session with a Citrix Server that has ZENworks Adaptive Agent installed" on page 142
- "The ZENworks Adaptive Agent Policies page does not display the correct status for the DLU policy" on page 142
- "The partial or the general refresh of a terminal server might cause high usage of system resources and take considerable time to refresh the server" on page 142
- "The general refresh of a managed device might take considerable time if the device is unable to contact the Primary Server" on page 143

Satellite menu is not displayed in the left navigation pane of the ZENworks Adaptive Agent page

Source: ZENworks 10 Asset Management; ZENworks Adaptive Agent.

Explanation: When you promote a device to Satellite through ZENworks Control Center, the configured Satellite role is added to the device. However, when you double-click the ▣ icon, the Satellite menu is not displayed in the left navigation pane of the ZENworks Adaptive Agent page.

Action: Refresh the managed device (In the notification area of the device, right-click the ▣ icon, then click *Refresh*).

Unable to use rights-based authentication to remotely manage a device

Source: ZENworks 10 Management; ZENworks Adaptive Agent.

Explanation: When you use rights-based authentication to remotely manage a device, the following error is logged on the device:

```
Rights Authentication failed. An internal error occurred
while communicating to ZENworks Management Daemon. Contact
Novell Technical Services.
```

Possible Cause: ZENworks Adaptive Agent is not installed on the device. Only Remote Management service is installed on the device.

Action: Install ZENworks Adaptive Agent on the device. For more information on installing the ZENworks Adaptive Agent, see "Installing the ZENworks Adaptive Agent" in *ZENworks 10 Asset Management Administration Quick Start*.

Unable to launch a terminal session with a Citrix Server that has ZENworks Adaptive Agent installed

Source: ZENworks 10 Management; ZENworks Adaptive Agent.

Explanation: After deploying the ZENworks Adaptive Agent on a Citrix server, you might encounter any of the following ICA login session issues:

- The ICA login session that is launched from Citrix agent terminates after some time.

- The ICA login session displays the following exception:

  winlogon.exe ..Application Error

  If you try to close the exception window, the session hangs displaying the following message:

  Running login scripts

Action: Before launching a terminal session with the Citrix server, do any of the following on the server:

- Rename NWGina.dll.

  1. In the c:\windows\system32 directory, rename NWGina.dll.

  2. In the Registry Editor, go to HKLM\Software\Microsoft\WindowsNT\CurrentVersion\Winlogon, and change the value of the CtxGinaDLL key to the new name for NWGina.dll.

  3. Reboot the server.

- Install Novell Client.

NOTE: This needs to be done only once.

The ZENworks Adaptive Agent Policies page does not display the correct status for the DLU policy

Source: ZENworks 10 Asset Management; ZENworks Adaptive Agent.

Explanation: If the User Management Agent Feature is disabled or uninstalled in ZENworks Control Center (Agent Features panel on the ZENworks Agent page), the status for the DLU policy on the ZENworks Adaptive Agent Policies page is displayed as *Success,* even though the policy is not effective on the device

Action: None.

The partial or the general refresh of a terminal server might cause high usage of system resources and take considerable time to refresh the server

Source: ZENworks 10 Configuration Management; ZENworks Adaptive Agent.

Explanation: During a partial or general refresh of a terminal server, the ZENworks agent on the server simultaneously refreshes the sessions of all the users logged into the terminal server. If too many users are logged in to the terminal server, the ZENworks agent might take substantial time to refresh the terminal server and the usage of the system resources on the server might also be high.

Action: Perform the following steps to refresh the user sessions in batches:

1 Open the Registry Editor.

2 Go to `HKLM\Software\Novell\ZCM\`.

3 To enable batch refreshes, create a string called EnableBatchRefresh and set the value to 1.

By default, there are 5 sessions in a batch.

4 (Optional) To change the number of user sessions in a batch, create a string called maxUserRefreshThreads and set the desired value.

The general refresh of a managed device might take considerable time if the device is unable to contact the Primary Server

Source: ZENworks 10 Configuration Management; ZENworks Adaptive Agent.

Explanation: During a general refresh, the adaptive agent on a managed device attempts to contact the primary server twice by default. Consequently, the general refresh of the device might take considerable time if the device is unable to contact the Primary Server.

Action: To prevent the device from retrying to connect to a primary server and subsequently reduce the time taken by the device to refresh:

1 Open the Registry Editor.

2 Go to `HKLM\Software\Novell\ZCM\`.

3 Create a string called PingRetryCount and set its value to 0.

ZENworks System Updates

IV

The System Updates feature allows you to obtain updates to the Novell ZENworks 10 Asset Management software on a timely basis, and also allows you to schedule automatic downloads of the updates.

17 Introduction to ZENworks System Updates

The System Updates feature allows you to obtain updates to the Novell ZENworks 10 Asset Management software on a timely basis, and also allows you to schedule automatic downloads of the updates.

Software updates are provided periodically and you can choose whether to deploy each update after viewing its content.

You can also download the latest Product Recognition Update (PRU) to update your knowledgebase so that Inventory can recognize newer software.

When you select to update your ZENworks software, you can update globally in one step or in stages. You can also select to update specific devices, groups of devices, or all devices in the Management Zone that have the ZENworks software installed. You can use ZENworks Control Center to track the successes and failures per device for each software update.

The following figure illustrates the System Updates page:

Figure 17-1 *System Updates Panels (Available System Updates, Deploying System Updates, and Deployment Stages)*

Review the following sections to set up and manage updates for your ZENworks software:

- Chapter 18, "Configuring Updates," on page 149
- Chapter 19, "Managing Update Downloads," on page 167
- Chapter 20, "Deploying Updates," on page 173
- Chapter 21, "Deleting Updates," on page 189
- Chapter 22, "Reviewing the Content of an Update," on page 191
- Chapter 23, "Update Statuses," on page 195

Configuring Updates

18

Perform the following tasks to configure your update process:

18.1 Configuring System Update Settings

You should configure System Update before attempting to use it. Configure as many of the following settings as necessary for your system:

18.1.1 Check for Updates Schedule

The default is to not schedule update checking (*No Schedule* is displayed in the *Schedule Type* field). With this scheduling option selected, the only way you can check for software updates is to do so manually in the Available System Updates panel on the *System Updates* tab.

You can specify how often you want to check for updates. When you do this, information on available updates is automatically downloaded from Novell to the Available System Updates panel on the *System Updates* tab when the schedule fires. This does not download the update content itself. Downloading can be scheduled in the Download Schedule panel (see "Download Schedule" on page 151).

To schedule checking for the ZENworks software updates:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *Configuration* tab.

2 Click *Management Zone Settings* to expand its options, click *Infrastructure Management* to expand its options, then select *System Update Settings*.

In the Check for Updates panel, there are two scheduling options for updates:

- **No Schedule:** The default is to not schedule update checking. With this scheduling option selected, the only way you can check for software updates is to do so manually in the Available System Updates panel on the *System Updates* tab. To specify the *No Schedule* option, continue with Step 3.

◆ **Recurring:** Lets you specify how often you want to check for updates. When you set this option, information on available updates is automatically downloaded from Novell to the Available System Updates panel on the *System Updates* tab when the schedule fires. This does not download the update content itself. To set a recurring schedule, skip to Step 4.

3 (Conditional) To exclude scheduled checking for software updates (the default), click the down-arrow in the *Schedule Type* field, select *No Schedule*, click *Apply* to save the schedule change, then skip to Step 6.

With this option selected, you must check for updates manually. For more information, see "Manually Downloading Updates" on page 169.

4 (Conditional) To set a recurring schedule for checking for updates to your ZENworks software, click the down-arrow in the *Schedule Type* field, then select *Recurring*.

5 Fill in the fields:

5a Select one or more check boxes for the days of the week.

5b To set the time of day for checking to occur, use the *Start Time* box to specify the time.

5c (Optional) For additional scheduling options, click *More Options*, then select the following options as necessary:

◆ **Process Immediately if Device Unable to Execute on Schedule:** Causes checking for updates to occur as soon as possible if the checking cannot be done according to schedule. For example, if a server is down at the scheduled time, checking for updates occurs immediately after the server comes back online.

◆ **Use Coordinated Universal Time:** Causes the schedule to interpret the times you specify as UTC instead of local time.

◆ **Start at a Random Time Between Start and End Times:** Allows checking for updates to occur at a random time between the time you specify here and the time you specified in Step 5b. Fill in the *End Time* fields.

◆ **Restrict Schedule Execution to the Following Date Range:** In addition to the other options, you can specify a date range for when the checking can occur.

5d When you have finished configuring the recurring schedule, click *Apply* to save the schedule change.

6 To exit this page, click *OK* when you are finished configuring the schedule.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.1.2 Download Schedule

The default is to not schedule downloading of updates (*No Schedule* is displayed in the *Schedule Type* field). With this scheduling option selected, the only way you can download updates is to do so manually in the Available System Updates panel on the *System Updates* tab.

If you do specify how often you want to download updates, you should set this schedule in conjunction with the schedule to check for updates (see "Check for Updates Schedule" on page 149).

After an update has been checked for and its information displayed in the Available System Updates panel on the *System Updates* tab, you can schedule the download from Novell to automatically occur when the schedule fires.

To schedule ZENworks software updates:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *Configuration* tab.

2 Click *Management Zone Settings* to expand its options, click *Infrastructure Management* to expand its options, then select *System Update Settings*.

In the Download Schedule panel, there are two scheduling options for downloading updates:

   ◆ **No Schedule:** The default is to not schedule downloading of updates (*No Schedule* is displayed in the *Schedule Type* field). With this scheduling option selected, the only way you can download updates is to do so manually in the Available System Updates panel on the *System Updates* tab. To specify the *No Schedule* option, continue with Step 3.

   ◆ **Recurring:** You can specify how often you want to download updates. After an update has been checked for and its information displayed in the Available System Updates panel on the *System Updates* tab, you can schedule the download from Novell to automatically occur when the schedule fires. To set a recurring schedule, skip to Step 4.

3 (Conditional) To exclude scheduled downloading of software updates (the default), click the down-arrow in the *Schedule Type* field, select *No Schedule*, click *Apply* to save the schedule change, then skip to Step 6.

With this option selected, you must download updates manually. For more information, see Section 19.2, "Downloading Updates," on page 168.

4 (Conditional) To set a recurring schedule for downloading updates to your ZENworks software, click the down-arrow in the *Schedule Type* field, then select *Recurring*.

```
System Update Settings                                                    [X]
Configure the server for downloading System Updates, proxy server settings, and scheduling updates

Check For Updates Schedule                                                [»]

Download Schedule                                                         [«]
This setting allows the administrator to configure a download schedule for updates.

Schedule Type:
[Recurring                    ▼]

 ⊙ Days of the week
      Sun  Mon  Tue  Wed  Thu  Fri  Sat
      □    □    □    □    □    □    □

   Start Time: [1 ▼] : [00 ▼] [am ▼]
   Hide Options
      □ Process immediately if device unable to execute on schedule
      □ Use Coordinated Universal Time ( Current UTC 7:52 PM )
      □ Start at a random time between Start and End Times
         End Time: [1 ▼] : [00 ▼] [am ▼]
      □ Restrict schedule execution to the following date range:
         Start Date: [2/5/08   ] 🗓
         End Date:   [2/5/08   ] 🗓
```

5 Fill in the fields:

   5a Select one or more check boxes for the days of the week.

   5b To set the time of day for downloading to occur, use the *Start Time* field to specify the time.

   5c (Optional) For additional scheduling options, click *More Options*, then select the following options as necessary:

       ◆ **Process Immediately if Device Unable to Execute on Schedule:** Causes checking for updates to occur as soon as possible if the checking cannot be done according to schedule. For example, if a server is down at the scheduled time, checking for updates occurs immediately after the server comes back online.

       ◆ **Use Coordinated Universal Time:** Causes the schedule to interpret the times you specify as UTC instead of local time.

       ◆ **Start at a Random Time Between Start and End Times:** Allows downloading of updates to occur at a random time between the time you specify here and the time you specified in Step 5b. Fill in the *End Time* fields.

       ◆ **Restrict Schedule Execution to the Following Date Range:** In addition to the other options, you can specify the days when downloading can occur.

   5d When you have finished configuring the recurring schedule, click *Apply* to save the schedule change.

6 To exit this page, click *OK* when you are finished configuring the schedule.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.1.3 E-Mail Notification

In conjunction with using stages, you can set up e-mail notifications to indicate when each stage has completed. When you deploy an update, you can specify to use the e?mail notifications.

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *Configuration* tab.

2 Click *Management Zone Settings* to expand its options, click *Events and Messaging*, then select *SMTP Settings* to display the E?mail Notification panel:

Configuration > SMTP Settings

SMTP Settings ☒
Configuration of settings related to SMTP Server

E-mail Notification ⌃

SMTP Server Address	
SMTP Port	

☐ SMTP Server requires authentication

User	
Password	

[OK] [Apply] [Reset] [Cancel]

Staging must be used to receive notifications, and the stage behavior must be set to one of the following:

- *Advance Through Stage Automatically With Notification*
- *Advance To Next Stage and Notify When Complete*

SMTP must be configured in order for the staging e-mail configuration to work.

3 (Conditional) If you do not have SMTP configured:

3a To access the SMTP Settings page, click *Configuration* in the left pane, click the arrows in the *Management Zone Settings* heading to expand its options, click *Event and Messaging*, then select *SMTP Settings*.

3b In the *E-mail Notification* section, fill in the fields:

SMTP Server Address: Specify the DNS name or IP address of the SMTP server.

SMTP Port: Specify the SMTP server's communication port.

Use SSL: To use an encrypted SSL channel for sending e-mails. By default this option is disabled.

SMTP Server Requires Authentication: If authentication is required, select this check box, then specify the *User* and *Password* information.

3c Click *OK* to save the changes.

3d Click *Management Zone Settings* to expand its options, click *Infrastructure Management*, then select *System Update Settings* to display the E-mail Notification panel:

Configuration > System Update Settings
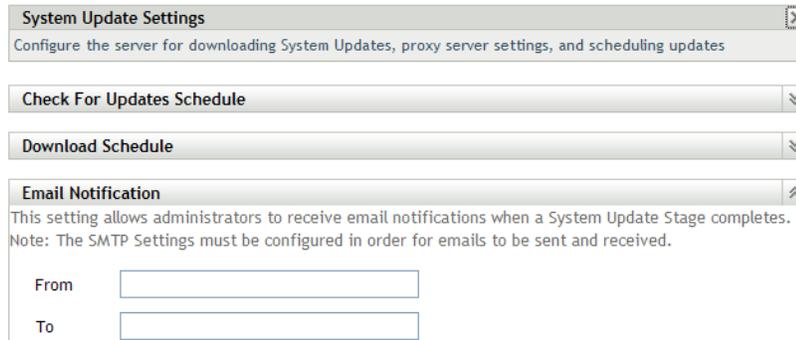
System Update Settings
Configure the server for downloading System Updates, proxy server settings, and scheduling updates

Check For Updates Schedule

Download Schedule

Email Notification
This setting allows administrators to receive email notifications when a System Update Stage completes.
Note: The SMTP Settings must be configured in order for emails to be sent and received.

From

To

4 Fill in the fields:

From: Either specify your administrator e?mail address, or type something descriptive, such as `System-Update-Stage-Notice`. Do not use spaces between words.

To: Specify your administrator's e-mail address. You can specify multiple e-mail addresses separated by a comma (,).

This is the person you want to be notified when the stage ends.

5 Click *Apply* to make the changes effective.

6 Either click *OK* to close the page, or continue with another configuration task.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.1.4 Proxy Server Settings

This option is useful for restrictive environments where you do not want all of your production servers to have Internet access. This is used in conjunction with the Dedicated Server Settings panel.

To specify a proxy server:

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* section (if necessary), click *Infrastructure Management*, then click *System Update Settings* to display the Proxy Server Settings panel.
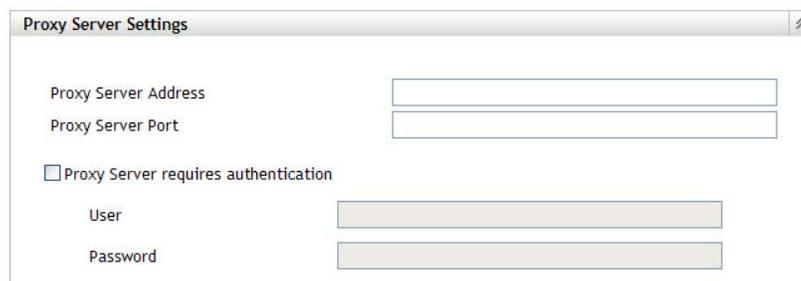
Proxy Server Settings

Proxy Server Address

Proxy Server Port

☐ Proxy Server requires authentication

User

Password

3 Fill in the fields:

Proxy Server Address: Specify the DNS name or IP address of the proxy server.

Proxy Server Port: Specify the proxy server's communication port.

Proxy Server Requires Authentication: When you select this check box, the *User* and *Password* fields become editable. If authentication is required, select this check box and specify the username and password for access to the proxy server.

4 Click *Apply* to make the changes effective.

5 Either click *OK* to close the page, or continue with another configuration task.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.1.5 Dedicated Server Settings

By default, any available Primary Server in the Management Zone can be used randomly to download the updates. However, you can specify one ZENworks Server to be dedicated to handling your update downloads. The server that you select should have access to the Internet, directly or through a proxy server.

The following sections contain more information:

- "Specifying a Dedicated Update Server" on page 155
- "Clearing a Dedicated Update Server" on page 156

Specifying a Dedicated Update Server

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* section (if necessary), click *Infrastructure Management*, then click *System Update Settings* to display the Dedicated Server Settings panel:

3 Browse for and select a ZENworks Primary Server.

The server's identification is displayed in the *Dedicated System Update Server* field.

This ZENworks Server must be a member of the Management Zone.

4 Click *Apply* to make the changes effective.

5 Either click *OK* to close the page, or continue with another configuration task.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

Clearing a Dedicated Update Server

Clearing a dedicated update server causes your updates to be retrieved randomly from any Primary Server in the Management Zone.

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* section (if necessary), click *Infrastructure Management*, then click *System Update Settings* to display the Dedicated Server Settings panel:

3 Click *Clear* to remove the dedicated server from the *Dedicated System Update Server* field.

4 (Conditional) If you need to revert to the last saved dedicated server setting, click *Reset*.

This resets the dedicated server to the last saved setting, such as when you last clicked *Apply* or *OK*.

5 Click *Apply* to make the change effective.

IMPORTANT: Previous settings cannot be restored after you click *Apply*.

18.1.6 Stage Timeout Settings

Deployment stages are optional; however, stages allow you to deploy an update one step at a time, such as to a test group first, then to your managed devices. If a failure occurs during the update process, the process is halted. E?mail notifications can let you know when each stage has completed.

The global default timeout setting is 3 days. This provides the same timeout length for each stage. For information about setting the timeout for individual stages, see "Modifying the Stage Timeout" on page 161.

Set this value to be long enough to accommodate updating all of the devices you plan to update.

When the timeout value is reached, the stage's deployment stops and an e-mail message is sent, if e-mail notification is configured. You can cancel the deployment, or you can clear the error to restart the stage and reset the timeout. Or, you can ignore all pending devices to trigger a stage progression (either automatic, or wait for administrator action based on the setting).

You can use E-mail notification to know when a stage has completed.

To configure global stage timeout settings:

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* panel (if necessary), click *Infrastructure Management*, then click *System Update Settings* to display the Stage Timeout Settings panel:

Stage Timeout Settings
This setting allows the administrator to set a default timeout period for all stages. If the timeout value is reached before the stage completes, the deployment process ends and an error message will notify the administrator of the timeout. The default timeout setting is 3 days.

☐ Stage Timeout:

[3] Days [0] Hours [0] Minutes

3 Select the *Stage Timeout* check box, then specify the days, hours, and minutes desired.

4 Click *Apply* to make the changes effective.

5 Either click *OK* to close the page, or continue with another configuration task.

If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.1.7 Reboot Behavior

Some updates do not require a device to be rebooted after they have been deployed to a device. However, if a reboot is required to complete the update process, the deployment is not completed until the device is rebooted.

To configure the reboot behavior:

1 In ZENworks Control Center, click *Configuration* in the left pane.

2 On the *Configuration* tab, expand the *Management Zone Settings* panel (if necessary), click *Infrastructure Management*, then click *System Update Settings* to display the Reboot Behavior panel:
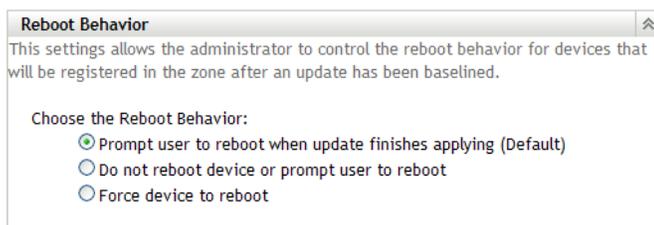
Reboot Behavior
This settings allows the administrator to control the reboot behavior for devices that will be registered in the zone after an update has been baselined.

Choose the Reboot Behavior:
◉ Prompt user to reboot when update finishes applying (Default)
◯ Do not reboot device or prompt user to reboot
◯ Force device to reboot

3 Select one of the following options:

- **Prompt User to Reboot When Update Finishes Applying (Default):** After the update has been applied, a request to reboot is immediately displayed. If the user initially rejects rebooting, the user is periodically requested to reboot the device, until the device is rebooted.

- **Do Not Reboot Device:** The device does not reboot; however, the user is periodically requested to reboot the device, until the device is rebooted.

- **Force Device to Reboot:** After the update has been applied, the device is automatically rebooted without user intervention if a reboot is required by the update.

4 Click *Apply* to make the changes effective.

5 Either click *OK* to close the page, or continue with another configuration task.

If you did not click *Apply* to make some of your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

18.2 Creating Deployment Stages

Deployment stages are optional; however, stages allow you to deploy an update one step at a time, such as to a test group first, then to your managed devices. If a failure occurs during the update process, the process is halted. E?mail notifications can let you know when each stage has completed.

The following sections contain more information:

18.2.1 Understanding Stages

You can do the following with stages:

- Set them up for different devices or groups, such as for a test group, specific devices or device groups, or all managed devices in the zone.
- Modify an existing stage's membership.
- Change the order in which the stages run.
- Rename and delete stages.
- Specify the default timeout for a stage. When the timeout value is reached, the stage's deployment stops and an e-mail message is sent , if e-mail notification is configured. You can cancel the deployment, or you can clear the error to restart the stage and reset the timeout. Or, you can ignore all pending devices to trigger a stage progression (either automatic, or wait for administrator action based on the setting).
- Specify the reboot behavior when devices complete the update: prompt a reboot, force a reboot, or suppress rebooting.
- Specify how the update process is to advance through the stages:
    - Automatically, with or without notification
    - One stage at a time with notification when each stage is completed
    - Bypass the configured stages and immediately apply the update to all devices

There are many reasons for creating deployment stages:

- Testing the update on certain devices before deploying it to your production environment
- Including all Primary Servers in one stage so they can be updated at the same time.

- Grouping your servers in several stages so that the update process isn't too intensive for the Primary Server being used to perform the updates.
- Grouping the workstations in several stages so that the update process isn't too intensive for the Primary Server being used to perform the updates.

Any managed devices that are not part of a stage are automatically updated after the last deployment stage has been processed.

You cannot configure stages when an update is in progress.

The following figure illustrates the Deployment Stages panel on the System Updates page:

Figure 18-1 *The Deployment Stages Panel*

The following table explains the column information. For some columns, you can sort the listed information by clicking a column heading. Click it again to reverse the sorting order.

Table 18-1 *Deployment Stages column descriptions.*

Column Heading	Explanation
Ordinal	Displays the order in which the stages run. You can rearrange the staging order by using the *Move Up* and *Move Down* options. For more information, see "Rearranging the Order in Which Stages Start" on page 165. The first stage listed always displays ordinal 1, the second, ordinal 2, and so on. Therefore, you do not need to include a sequence number in your stage names.
Stage Name	Name of the stage, which you specify when creating the stage by using the *Action* > *Add Stage* option. Make this name descriptive enough to indicate its purpose.
Stage Members	This column contains the *View/Modify Members* option, which opens the Modify Stage Members dialog box that lists all of the members of the stage. You can use the dialog box to add or remove members from the stage. Stage membership can include individual devices and groups that contain devices. For more information, see "Modifying the Membership of a Deployment Stage" on page 163.
Staging Behavior	Displays the current behavior for each stage, which you can change by using the *Action* > *Modify Staging Behavior* option. For more information, see "Modifying Staging Behavior" on page 162.

Column Heading	Explanation
Reboot Behavior	Displays the reboot behavior of devices after the update is deployed.
	Some updates do not require a device to be rebooted after they have been deployed to a device. However, if a reboot is required to complete the update process, the deployment is not completed until the device is rebooted.
	You have the following reboot options:
	◆ **Prompt User to Reboot When Update Finishes Applying (Default):** After the update has been applied, a request to reboot is immediately displayed. If the user initially rejects rebooting, the user is periodically requested to reboot the device, until the device is rebooted.
	◆ **Do Not Reboot Device:** The device does not reboot; however, the user is periodically requested to reboot the device, until the device is rebooted.
	◆ **Force Device to Reboot:** After the update has been applied, the device is automatically rebooted without user intervention, if a reboot is required by the update.
	For more information, see "Modifying Reboot Behavior" on page 163.
Stage Timeout	Displays the stage timeout, listed in minutes, which you can change by using the *Action* > *Modify Stage Timeout* option. The default is 3 days, 0 hours, and 0 minutes, which is the global timeout value that can be changed in "Stage Timeout Settings" on page 156. Changing the value here only changes it for the selected deployment stage.
	When the timeout value is reached, the stage's deployment stops and an e-mail message is sent, if e-mail notification is configured. You can cancel the deployment, or you can clear the error to restart the stage and reset the timeout. Or, you can ignore all pending devices to trigger a stage progression (either automatic, or wait for administrator action based on the setting).
	For more information, see "Modifying the Stage Timeout" on page 161.

18.2.2 Creating and Populating a Deployment Stage

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, click *Action*, then select *Add Stage*.

You cannot add a stage while a deployment is in process.

3 Specify a deployment stage name, then click *OK*.

Deployment stages appear as device folders on the *Devices* tab, so you should specify names that help you to know a folder's purpose.

You might want to include something like "Deployment Stage" at the beginning of the name to sort the groups in the devices listing in ZENworks Control Center.

For information about naming in ZENworks Control Center, see Appendix B, "Naming Conventions in ZENworks Control Center," on page 343.

A newly created stage does not have any members. You must modify the stage's membership to add them.

4 Add devices to a deployment stage:

   4a In the *Stage Members* column, click *View/Modify Members* for the stage for which you want to add members.

   4b Click *Add*, browse for and select the devices, then click *OK*.

      You can add individual devices or device groups, or any combination of them.

      You can have both managed servers and workstations in the same deployment stage or in different stages, or you can split your servers and workstations into separate deployment stages.

      IMPORTANT: Some of your network servers will be Primary Servers for use in ZENworks management, while other servers on your network might only be managed devices with the ZENworks Adaptive Agent installed on them.

      You must update your Primary Servers before updating any of the other managed servers and especially before updating any managed workstations.

   4c Repeat Step 4b until you are finished adding members to the stage.

   4d To add members to another stage, repeat Step 4a through Step 4c.

5 Repeat Step 2 through Step 4 until you have created all of your deployment stages.

6 If you need to reorder the sequence of the deployment stages, select a stage, then click *Move Up* or *Move Down*.

If you are using one of the stages for test purposes, make sure that it is first in the listing.

18.2.3 Modifying the Stage Timeout

A stage timeout sets the length of time before a stage terminates. The default timeout is 3 days. You set the value for individual stage timeouts by using the procedure in this section. The global stage timeout value is established by following the steps in "Stage Timeout Settings" on page 156.

You cannot modify a stage if an update is in progress.

To set the timeout value for a selected stage:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, select the check box for a stage, click *Action*, then select *Modify Stage Timeout* to display the following dialog box:
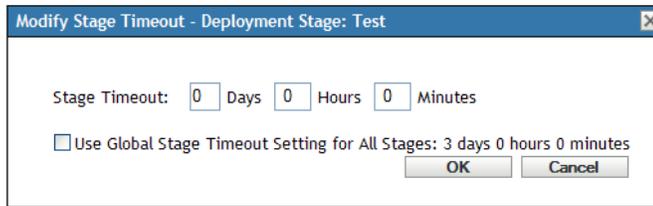
3 Specify the timeout value.

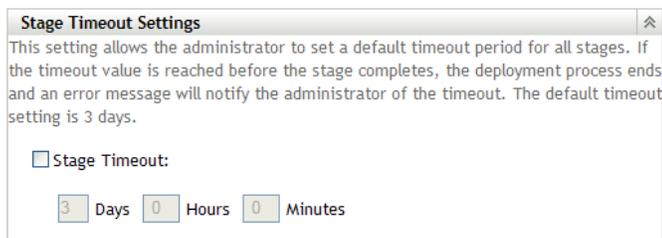This change in timeout value only applies to the selected stage. If you specify a timeout value for this stage, set its value to be long enough to accommodate updating all of the devices in the stage.

When the timeout value is reached, the stage's deployment stops and an e-mail message is sent, if e-mail notification is configured. You can cancel the deployment, or you can clear the error to restart the stage and reset the timeout. Or, you can ignore all pending devices to trigger a stage progression (either automatic, or wait for administrator action based on the setting).

4 (Optional) Select the *Use Global Stage Timeout Setting for All Stages* check box to specify using the global timeout value (default of 3 days, 0 hours, and 0 minutes).

For more information, see "Stage Timeout Settings" on page 156.

5 Click *OK*.

18.2.4 Modifying Staging Behavior

The default stage behavior is to automatically advance through the configured stages. You can change this default behavior. If you change the staging behavior for one stage, the change becomes effective for all stages.

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, select the check box next to any stage, click *Action*, then select *Modify Stage Behavior* to display the following dialog box:
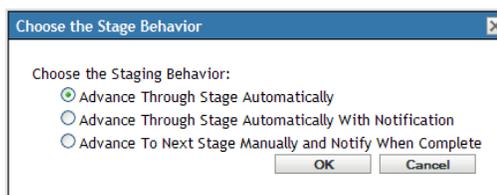
3 Select one of the following stage behaviors:

Advance Through Stages Automatically: As soon as one stage has completed its updates, the next stage begins. This is the default behavior (its check box is enabled).

After the last stage has completed, all applicable devices that are not members of a stage are then processed.

Advance Through Stages Automatically with Notification: Starts the first stage, sends an e?mail notification when it has completed, then automatically starts the next stage, and so on.

To use this option, a notification method must be set up on the System Update Download Settings page in the *E-mail Notification* section.

Advance to Next Stage Manually and Notify When Complete: Use this method for user action between the stages, such as reviewing the results of an update to a test group.

This option automatically starts the first stage. After any stage has completed, e?mail notification is sent, then the system waits for you to manually start the next stage.

To use this option, a notification method must be set up on the System Update Download Settings page in the *E-mail Notification* section.

4 Click *OK*.

18.2.5 Modifying Reboot Behavior

Some updates do not require a device to be rebooted after they have been deployed to a device. However, if a reboot is required to complete the update process, the deployment is not completed until the device is rebooted.

To modify the reboot behavior:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, select the check box for one or more the deployment stages, click *Action*, then click *Modify Reboot Behavior*.

3 Select one of the following options:
- ◆ **Prompt User to Reboot When Update Finishes Applying (Default):** After the update has been applied, a request to reboot is immediately displayed. If the user initially rejects rebooting, the user is periodically requested to reboot the device, until the device is rebooted.
- ◆ **Do Not Reboot Device:** The device does not reboot; however, the user is periodically requested to reboot the device, until the device is rebooted.
- ◆ **Force Device to Reboot:** After the update has been applied, the device is automatically rebooted without user intervention, if a reboot is required by the update.

4 Click *OK*.

18.2.6 Modifying the Membership of a Deployment Stage

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 (Optional) Add devices to a deployment stage:

  2a In the *Stage Members* column, click *View/Modify Members* for the stage for which you want to add members.

2b Click *Add*, browse for and select the devices, then click *OK*.

You can add individual devices or device groups, or any combination of them.

You can have both managed servers and workstations in the same deployment stage or in different stages, or you can split your servers and workstations into separate deployment stages.

IMPORTANT: Some of your network servers will be Primary Servers for use in ZENworks management, while other servers on your network might only be managed devices with the ZENworks Adaptive Agent installed on them.

You must update your Primary Servers before updating any of the other managed servers and especially before updating any managed workstations.

2c Repeat Step 2b until you are finished adding members to the stage.

2d To add members to another stage, repeat Step 2a through Step 2c.

3 (Optional) Remove devices from a deployment stage:

3a In the *Stage Members* column, click *View/Modify Members* for the stage for which you want to remove members.
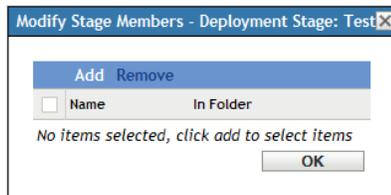
3b Select the check box next one or more devices that you want to remove, then click *Remove*.

4 Click *OK* when you have finished configuring the stage's membership.

18.2.7 Renaming a Deployment Stage

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, click the check box for the deployment stage to be renamed.

3 Click *Rename*.

4 In the Rename dialog box, specify the new name, then click *OK*.

For information about naming in ZENworks Control Center, see Appendix B, "Naming Conventions in ZENworks Control Center," on page 343.

18.2.8 Deleting a Deployment Stage

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, click the check box for one or more of the deployment stages to be deleted.

3 Click *Delete*.

Deleted stages cannot be recovered.

18.2.9 Rearranging the Order in Which Stages Start

All updates that use stages deploy to the devices that are members of the stages according to the currently listed staging order.

To rearrange the staging order:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deployment Stages panel, click the check box for the deployment stage to be moved.

3 Click *Move Up* or *Move Down* as necessary to rearrange the staging order.

4 Repeat Step 2 and Step 3 as necessary for each stage.

Managing Update Downloads

<div style="text-align:right">19</div>

The Available System Updates panel on the System Updates page displays the updates that are available after you have checked for them. This includes the Product Recognition Update (PRU), which Novell provides to update your knowledgebase so that ZENworks Inventory can recognize newer software. The display refreshed according to the schedule you set in "Check for Updates Schedule" on page 149.

The following sections contain more information:

19.1 Understanding Available Updates

The following figure illustrates the Available System Updates panel:

Figure 19-1   *Available System Updates Panel*

The following table explains the column information and the *Auto Refresh* drop-down list (on the right side of the panel, above *Target Type*). For some columns, you can sort the listed information by clicking a column heading. Click it again to reverse the sorting order.

Table 19-1   *Available System Updates column descriptions.*

Column Heading or List	Explanation
Update Name	Displays the name of the update, which is created by Novell.
	Click the name to access the Release Details page.
	For more information, see Chapter 22, "Reviewing the Content of an Update," on page 191.
Release Date	Displays the date that Novell created the update.
Download Date	Displays the date that you downloaded the update.
Applied Date	Displays the date that you applied the update.

Column Heading or List	Explanation
Status	Displays the current status of the update, which is automatically updated every 15 seconds. For more information on the individual statuses, see Chapter 23, "Update Statuses," on page 195.
Importance	Displays the relative importance of the update's content to your ZENworks installation. Some possible entries include: **OPTIONAL:** Not required for normal operation of ZENworks. **MANDATORY:** A required update that must be applied.
Target Type	Displays the type of update, such as: **ZENworks Servers:** The update applies only to ZENworks Servers. **All Devices:** The update applies to all managed devices, including ZENworks Servers.

Auto Refresh	Click *Auto Refresh* (the menu item on the right side of the panel, above *Target Type*), then select one of the following:
	
	   ◆ No Auto Refresh
	   ◆ 15-second Refresh
	   ◆ 30-second Refresh
	   ◆ 60-second Refresh
	
	By default the panel view is not automatically refreshed. However, you can manually refresh the view by clicking the *System Updates* tab.

19.2 Downloading Updates

You can schedule the downloads, or download them manually:

- Section 19.2.1, "Scheduling Update Downloads," on page 168
- Section 19.2.2, "Manually Checking for Updates," on page 169
- Section 19.2.3, "Manually Downloading Updates," on page 169
- Section 19.2.4, "Manually Importing Updates to Servers without Internet Connectivity," on page 170

19.2.1 Scheduling Update Downloads

You can schedule both checking for updates and downloading them:

- "Check for Updates Schedule" on page 149
- "Download Schedule" on page 151

19.2.2 Manually Checking for Updates

If the most recent updates are not being displayed in the Available System Updates panel on the System Updates page, you can manually refresh the display.

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Available System Updates panel, click *Action > Check for Updates*.

Any available updates are displayed with a status of *Available*.

3 To re-sort the listed updates, click the heading for any of the columns in the Available System Updates panel.

Click the heading a second time to reverse the sorting order.

19.2.3 Manually Downloading Updates

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Available System Updates panel, select the check box next to one or more updates, click *Action*, then click *Download Update*.

The update is downloaded and its status is eventually set to `Downloaded`.

Depending on the size of the update, the downloading process can take some time.

3 To refresh the view of the download progress (*Status* column), click the *System Updates* tab or use the Auto Refresh option.

4 If you want to use deployment stages to apply the selected updates, go to Chapter 20, "Deploying Updates," on page 173 to configure the stages and deploy the updates.

or

To immediately apply the downloaded updates to all applicable devices in the Management Zone, select the check box for the downloaded update that you want to deploy, then click *Action > Deploy Update to Devices*. The Create System Update Deployment Wizard steps you through the deployment process. For more information, see Chapter 20, "Deploying Updates," on page 173.

19.2.4 Manually Importing Updates to Servers without Internet Connectivity

If you have servers in your environment that do not have Internet access, you can obtain the update or Product Recognition Update (PRU) files from the Novell Downloads page (http://download.novell.com), copy the files onto a CD or other media, and then use the CD to import the files to a ZENworks Primary Server by using the `zman system-update-import` command. For more information, see "System Update/Product Recognition Update Commands" in the "ZENworks Command Line Utilities" guide.

After the files are on a ZENworks Primary Server, the update or PRU displays in the Available System Updates panel on the *System Updates* tab in ZENworks Control Center (*Configuration > System Updates*). You can then follow the instructions in Chapter 20, "Deploying Updates," on page 173 to deploy the update to managed devices.

19.3 Downloading and Installing the PRU

Novell provides a Product Recognition Update (PRU) to update your knowledgebase so that ZENworks Inventory can recognize newer software.

This action deploys the PRU to your database and sets its deployment to your managed devices to be scheduled. Deployment is then done by the ZENworks Adaptive Agent on the devices.

If the PRU is not up-to-date, Inventory might return some software as unrecognized. However, you can use the Local Software Products utility to take a fingerprint of the unrecognized software to update your knowledgebase.

To download and install the PRU:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.
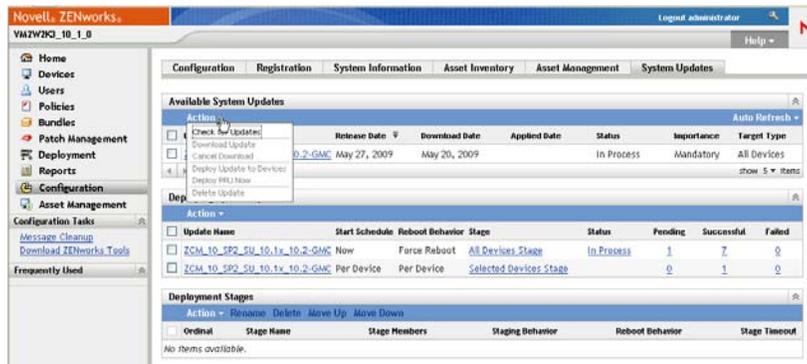
2 If a PRU is not displayed in the Available System Updates panel, click *Action > Check for Updates*.

Information for the latest PRU is displayed, if it is available.

3 To download a listed PRU, go to the Available System Updates panel, select the check box for a listed PRU, then click *Action > Download Update*.

4 To install a downloaded PRU, go to the Available System Updates panel, then click *Action > Deploy PRU Now*.

The PRU is now listed in the Deploying System Updates panel, where its progress is displayed.

19.4 Canceling or Deleting a System Update

You can cancel the downloading of an update, or you can delete the update from the Available System Updates list.

To cancel an update:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 Select the check box for a system update that is being downloaded, then click *Action > Cancel Download*.

Cancelling an update cancels the downloading of an update. Already downloaded files are not automatically removed, but if you delete the update, any downloaded files are removed.

If a server's connection to the ZENworks database is lost while downloading an update, the download does not resume after reconnecting. Attempting to use the *Cancel Download* action results in the update hanging in the Cancel state. Use the `zman sudu --force` command to delete the update.

To delete an update:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.
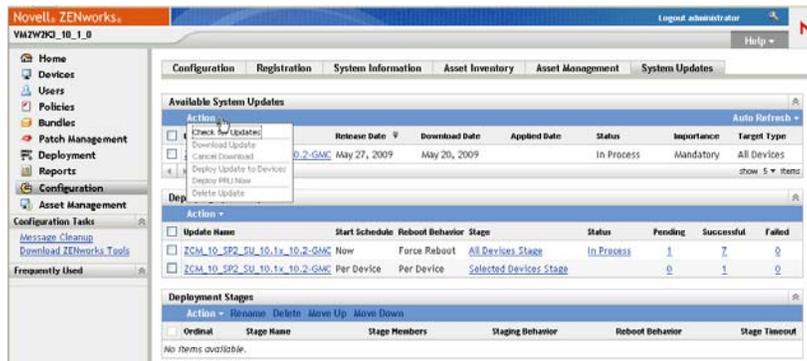
2 Select the check box for the system update that you want to delete, then click *Action > Delete Update*.

Deleting an update removes it from the list and all downloaded files are removed. However, if the deleted update is still available on the update server the next time that you check for updates, it is displayed in the list again for possible downloading.

3 Click *OK* to confirm the deletion.

Deploying Updates

20

20.1 Understanding Deploying Updates

You have the following options for deploying an update:

◆ Deploy the update to all devices without using deployment stages. You can schedule the deployment.

◆ Deploy the update by using deployment stages where one stage automatically starts after the previous one has completed, unless you have configured stages to pause the deployment and send e-mail notifications to the administrator. You can schedule the deployment.

◆ Deploy the update by using deployment stages with e?mail notification to allow manual control for starting the next stage. You can use this option to test the update before deploying it to all devices in your production environment. You can schedule the deployment.

◆ Deploy the update to specific devices (selected individually and by device groups) without using deployment stages. You can use this option to test the update before deploying it to all devices in your production environment. You can schedule the deployment.

If you choose to retire a managed device in ZENworks Control Center before deploying an update to all the devices in the Management Zone, you must first ensure that the device has retired and subsequently apply the update. The device is retired only when the ZENworks Adaptive Agent installed on the device is refreshed. If you deploy the update before the agent is refreshed, the update is also applied to the retired device. The agent is automatically refreshed during the next device refresh schedule (the default device refresh interval is set to 12 hours). If you want to deploy the update before the next device refresh schedule, you must manually refresh the agent.

The Deploying System Updates panel displays the progress and results of deploying an update.

Updates are removed from this panel when the entire update process completes. You can view the Deployment History panel on the Release Details page for information on deployed updates.

The following figure illustrates the Deploying System Updates panel:

Figure 20-1   *Deploying System Updates Panel*

Deploying System Updates								⊗
Action ▾								
☐ **Update Name**	**Start Schedule**	**Reboot Behavior**	**Stage**	**Status**	**Pending**	**Successful**	**Failed**	
☐ ZCM Update 10.0.2	Now	Prompt User	All Devices Stage	In Process	1	0	0	

The following table explains the column information. For some columns, you can sort the listed information by clicking a column heading. Click it again to reverse the sorting order.

Table 20-1   *Deploying System Updates column descriptions*

Column Heading	Explanation
Update Name	Displays the name of the update, which is created by Novell.
	Click the name to access the Status by Device page. You can also click the underlined number in the *Pending*, *Successful*, or *Failed* columns to view the appropriate Status by Device page, filtered to display devices with that status.
Start Schedule	Displays the current schedule, if any has been set. Use the Reschedule Deployment action to reschedule the update. For more information, see Section 20.4, "Rescheduling a Deployment," on page 182.
	Each device can have its own schedule.
Reboot Behavior	Displays the reboot behavior of devices after the update is deployed.
	Some updates do not require a device to be rebooted after they have been deployed to a device. However, if a reboot is required to complete the update process, the deployment is not completed until the device is rebooted.
	You have the following reboot options:
	◆ **Prompt User to Reboot When Update Finishes Applying:** After the update has been applied, a request to reboot is immediately displayed. If the user initially rejects rebooting, the user is periodically requested to reboot the device, until the device is rebooted. This is the default.
	◆ **Do Not Reboot Device:** The device does not reboot; however, the user is periodically requested to reboot the device, until the device is rebooted.
	◆ **Force Device to Reboot:** After the update has been applied, the device is automatically rebooted without user intervention, if a reboot is required by the update.

Column Heading	Explanation
Stage	Indicates the deployment state. The possible entries are: ***stage_name***: The update is being deployed to the managed devices that are members of the current stage that is listed. **Selected Devices Stage:** The update is being deployed to selected managed devices without the use of stages. **All Devices Stage:** The update is being deployed to all managed devices in the Management Zone without the use of stages. *All Devices Stage* is displayed after the last stage has completed, which means any devices left in the Management Zone that were not part of a completed stage are then receiving the update. In other words, managed devices cannot skip an update. If stages are being used, click a stage name to view the device status for each stage member. For more information, see Section 20.9, "Viewing Status by Device," on page 184.
Status	Indicates the status of the update being deployed (for the current stage, if stages are being used). For information on the possible statuses, see Chapter 23, "Update Statuses," on page 195. Click an item in the *Status* column to view a message explaining the current status. When the status for an update reaches either the APPLIED or BASELINE status, the update deployment item is no longer displayed in this panel, but is displayed in the Deployment History panel. For more information, see Section 20.9, "Viewing Status by Device," on page 184.
Pending	Displays the number of devices for which the update deployment process is pending. A device can be pending if it is a member of a stage when stages are not automatically started after another stage completes. Click the number to view the Status by Device page, which displays the devices that have a pending deployment of the update. For more information, see Section 20.9, "Viewing Status by Device," on page 184.
Successful	Displays the number of devices for which the update deployment process is complete. Click the number to view the Status by Device page, which displays the devices that successfully received the update. For more information, see Section 20.9, "Viewing Status by Device," on page 184.
Failed	Number of devices for which the update deployment process has failed. Click the number to view the Status by Device page, which displays the devices that failed to receive the update. For more information, see Section 20.9, "Viewing Status by Device," on page 184. For failed deployments, you have the option of ignoring the error and continuing, or you can redeploy the update if the error has been resolved.

20.2 Deploying Updates

1 (Optional) Before deploying the updates, ensure that the health of the Primary Servers and the database in the Management zone is conducive for the deployment by performing diagnostic tests on the Primary Server using the ZENworks Diagnostic Center tool.

For detailed information about the ZENworks Diagnostic Center tool, see "ZENworks Diagnostic Center" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 (Optional) If you want to use deployment stages, set them up if you have not previously done so.

For more information, see Section 18.2, "Creating Deployment Stages," on page 158.

3 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab to display the Available System Updates panel:

4 (Conditional) If new updates are not being displayed, click *Action > Check for Updates*.

The following illustrates available updates:

5 (Optional) To view the content of an available update, click the name of the update (in the *Update Name* column) to display the Release Details page:
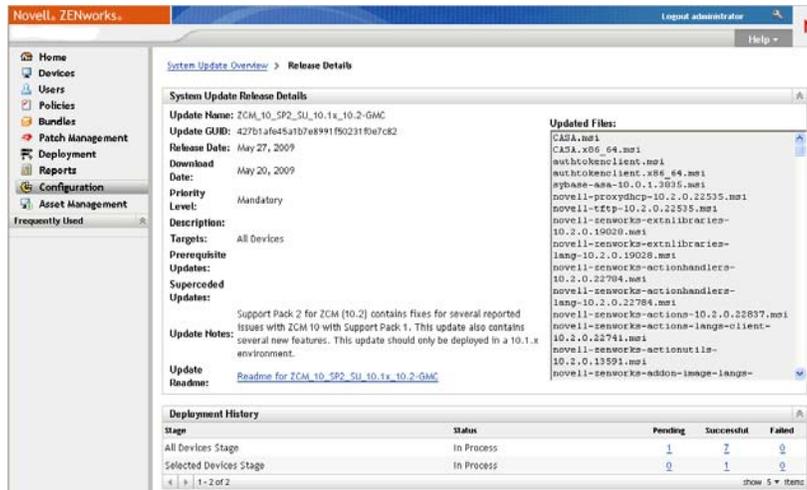
For more information, see Chapter 22, "Reviewing the Content of an Update," on page 191.

6 To download an update, select the check box for it, click *Action* > then click *Download Updates*.

After an update has completed downloading, its status is automatically changed to `Downloaded`. The length of time to download an update depends on its size and your hardware configuration.

You can download multiple updates at a time, but you can only deploy one at a time. Because these steps are repeated for each update, you only need to download the update you plan to deploy at this time.

The following illustrates downloaded updates:

7 Determine whether to deploy the downloaded update, then select its check box.

You can deploy only one update at a time.

If you want to review the content of the update that you downloaded, see Chapter 22, "Reviewing the Content of an Update," on page 191 for instructions about reviewing the content of a downloaded update.

If you want to download a different update for deployment, return to Step 5.

8 Click *Action* > *Deploy Update to Devices*.

This starts the Create System Update Deployment Wizard for deploying the update to all applicable devices. If deployment stages are enabled, they can be used.

The Deployment Wizard provides you with many options, including scheduling the deployment.

Create System Update Deployment
Step 1: Choose the Reboot Behavior for the Deployment

Update Name: Update for ZCM 10.0.7
Release Date: Apr 7, 2008
Download Date: Apr 12, 2008
Priority Level: OPTIONAL
Description:
Targets:
Product Version: 0
Update Notes:
Update Readme:

Updated Files:

Choose the Deployment Option for the Management Zone:
○ Deploy System Updates to Selected Devices in the Management Zone
◉ Deploy System Updates to All Devices in the Management Zone
○ Deploy System Updates using Stages to Devices in the Management Zone

<< Back   Next >>   Cancel

9 In the Deployment Wizard, complete the following steps:

9a On the Choose the System Update and Deployment Option page, select a deployment option (all of them can be scheduled in a subsequent wizard page).

NOTE: Depending on the size of your ZENworks system, we recommend as a best practice to deploy the selected update to one ZENworks Primary Server before deploying the update to other Primary Servers and to the managed devices that contact those servers.

We recommend that you perform the following actions in order:

1. Designate a ZENworks Primary Server to download the system update.

2. After the system update is in the *Downloaded* state, assign the update to only the designated Primary Server you chose above.

3. Refresh the ZENworks Agent on the Server and let the system update finish, then reboot the Server.

4. After the Server is restarted and running, update the other Primary Servers in your system, followed by managed devices.

In a production environment, we recommend that you use the *Deploy System Updates to Selected Devices in the Management Zone* option to update the first Primary Server, update the remaining Primary Servers, and then update the managed devices. Or you should use the *Deploy System Updates Using Stages to Devices in the Management Zone* option to deploy the update to a stage containing the first Primary Server before deploying the update to other stages containing the remaining Primary Servers and managed devices.

◆ **Deploy System Updates to Selected Devices in the Management Zone:** Deploys the selected update to only the devices that you select in . Stages are not used. If you choose this option, the next page of the wizard lets you select the reboot behavior for the devices included in the deployment.

◆ **Deploy System Updates to All Devices in the Management Zone:** Deploys the selected update to all devices in the Management Zone. Stages are not used. If you choose this option, the next page of the wizard lets you select the reboot behavior for the devices included in the deployment.

This option does not guarantee that ZENworks Servers are updated before managed devices. In a large ZENworks system or in a production environment, we recommend that you use one of the other options.

- **Deploy System Updates Using Stages to Devices in the Management Zone:** The selected update is deployed to only the devices that have membership in one of the stages. The stages are executed one after the other; that is, a stage does not start until the previous stage completes. After all stages complete, the *All Devices* stage is run. If you choose this option, and because the reboot behavior is set per stage, the next page of the wizard lets you select the reboot behavior for the All Devices Stage, which runs automatically after all other stages.

  For more information on stages, see the Section 18.2, "Creating Deployment Stages," on page 158.

9b Click *Next* to display the following page:

```
Create System Update Deployment
⚙ Step 2: Choose the Reboot Behavior for the Deployment

Choose the Reboot Behavior for the Deployment:
  ◉ Prompt user to reboot when update finishes applying
  ○ Do not reboot device
  ○ Force device to reboot
```

```
[ << Back ]  [ Next >> ]  [ Cancel ]
```

9c Select one of the following options:

- **Prompt User to Reboot When Update Finishes Applying:** After the update has been applied, a request to reboot is immediately displayed. If the user initially rejects rebooting, the user is periodically requested to reboot the device, until the device is rebooted. This is the default.

- **Do Not Reboot Device:** The device does not reboot; however, the user is periodically requested to reboot the device, until the device is rebooted.

- **Force Device to Reboot:** After the update has been applied, the device is automatically rebooted without user intervention, if a reboot is required by the update.

Some updates do not require a device to be rebooted after they have been deployed to a device. However, if a reboot is required to complete the update process, the deployment is not completed until the device is rebooted.

9d Click *Next*.

9e (Conditional) If you selected *Deploy System Updates to Selected Devices* in the Management Zone in Step 9a, the following wizard page displays:

```
Create System Update Deployment
⚙ Step 3: Choose the Deployment Devices and Groups

Add  Remove
☐  Name                                In Folder
No items selected, click add to select items
```

```
[ << Back ]  [ Next >> ]  [ Cancel ]
```

9f To add devices or groups to the deployment configuration, click *Add*, browse for and select the devices or device groups to include in the update deployment, then click *OK*.

9g Click *Next* to display the Choose the Deployment Schedule page.

9h Fill in the fields:

Schedule Type: Select one of the schedule options:

- **Now:** Immediately deploys the update when you finish the wizard.

- **Date Specific:** Deploys the update according to the schedule that you set. The following options are displayed for the *Date Specific* option:

Fill in the fields:

- **Start Date:** Select the deployment date from the calendar.

- **Run Event Every Year:** Select this option to deploy the update every year on the start date.

- **Process Immediately if Device Unable to Execute on Schedule:** Do not use this option for updates. It does not apply to updates.

- **Start Immediately at Start Time:** Lets you deploy updates at the start time you specify.

- **Start at a Random Time Between Start and End Times:** Lets you deploy updates at a random time between the times you specify. Fill in the *End Time* fields.

9i Click *Next* to display the Review Deployment Options page, then review the information.

```
Create System Update Deployment
  Step 5: Review Deployment Options

Update Name:                ZCM Update 10.0.2
Deployment Type:            Deploy System Updates to Selected Devices in the Management Zone
Deployment Reboot Behavior: Prompt user to reboot when update finishes applying
Deployment Schedule:        Schedule Type:
                               Date Specific

                            Dates scheduled event will be performed
                            on:
                               4/12/08

                            Start time:
                               1:00 AM

                            End time:

                                          << Back      Finish      Cancel
```

10 If you are satisfied, click *Finish* to start the update's deployment; otherwise, click *Back* to make changes.

11 (Conditional) If you chose the deployment schedule type as *Now* in Step 9h, the update is deployed only during the next device refresh schedule. However, if you want to immediately apply the update to the device, you must manually refresh the managed device in one of the following ways:

   ◆ Click the *Devices* tab > the *Managed* tab > *Servers* or *Workstations*, then select the check box next to the devices you want to refresh, click *Quick Tasks* > *Refresh Device*.

   ◆ On the managed device, right-click the ▣ icon, then click *Refresh*.

   ◆ On the Linux unmanaged device, open a terminal, change your current working directory to `/opt/novell/zenworks/bin/`, and execute `./zac ref`.

12 To observe the progress of the update deployment, do any of the following:

   ◆ In ZENworks Control Center, observe the panels on the System Updates page:

      ◆ The Available System Updates panel automatically displays `Baselined` in the *Status* column when the deployment has completed.

      ◆ The Deployed System Updates panel displays the update in its listing when the deployment has completed.

   ◆ On a Windows device where the update is being deployed, right-click the ZENworks icon, then select *Show Progress* to open the ZENworks Progress dialog box.

     You cannot view the download progress on a Linux device because these devices are not ZENworks managed devices and do not have the ZENworks icon.

     The progress of downloading the update MSI files is displayed. When it has finished, the dialog box automatically closes and the *Show Progress* option is dimmed.

     After a 5-minute wait, all ZENworks services are closed on the device. Then the MSIs (for Windows) or RPMs (for Linux) are installed and the services are restarted.

13 To verify that the update was successfully deployed:

   13a To verify that the MSIs or RPMs have been installed and the update process is complete, review the following log files:

   Windows: *installation_path*`\novell\zenworks\logs\systemupdate.log`

Linux: `/var/opt/novell/log/zenworks/SystemUpdate.log`

You can also look for the existence of the following file (the same path for both Windows and Linux):

`installation_path\novell\zenworks\work\system-update\systemupdate.ini.timestamp`

13b Test the ZENworks software on the device to ensure that it is working properly.

13c To ensure that the update has been deployed, do one of the following to determine whether the version number has been incremented (for example, the first update for ZENworks should change the value from 10.0.*x* to 10.0.2):

   ◆ Open the Windows Registry and browse to the following:

   `HKEY_LOCAL_MACHINE/Software/Novell`

   For the *ZCM* key, the update process should have incremented the *version* value.

   ◆ On a Windows device, review the following file:

   `Installation_path\Novell\ZENworks\version.txt`

   ◆ On a Linux device, review the following file:

   `/etc/opt/novell/zenworks/version.txt`

13d Repeat Step 13a through Step 13c for each test device.

14 (Conditional) If you are receiving e-mail notifications at the completion of the deployment stages and are ready to begin the next stage, go to the Deployed System Updates panel, then click *Action > Advance to Next Stage*.

15 To deploy another update, repeat from Step 5.

20.3 Starting a Pending Stage

The default stage behavior is to automatically advance through the configured stages. However, you can configure stage behavior for individual stages or for all stages.

The *Start Pending Stage* option is only available if you used the *Advance to Next Stage Manually and Notify When Complete* option to stop each stage for manual input before continuing, instead of having the stages complete automatically.

To start a pending stage:

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, select the check boxes for an update.

3 Click *Action > Start Pending Stage*.

20.4 Rescheduling a Deployment

You cannot reschedule a deployment after it starts:

   ◆ Section 20.4.1, "Rescheduling a Deployment for the All Stages Status," on page 183
   ◆ Section 20.4.2, "Rescheduling a Deployment for the Other Statuses," on page 183

20.4.1 Rescheduling a Deployment for the All Stages Status

1 Select the check box for an update.

Because all devices do not need to have the update deployed at the same time, you can set individual deployment schedules for the devices.

2 Click *Action > Reschedule Deployment* to open the Redeployment Schedule dialog box.

3 Either click *OK* to accept the default schedule of *Now*, or select *Date Specific* in the *Schedule Type* field, specify the new date, then click *OK*.

20.4.2 Rescheduling a Deployment for the Other Statuses

1 Select the check box for an update.

2 Click *Action > Reschedule Deployment*.

3 In the Status by Device page, select the check box for an update, then click *Reschedule Deployment*.

4 On the Status by Device page, select one or more devices that are listed in the *Device* column.

5 Click *Reschedule Devices* to open the Redeployment Schedule dialog box.

6 Either click *OK* to accept the default schedule of *Now*, or select *Date Specific* in the *Schedule Type* field and specify the new date, then click *OK*.

20.5 Bypassing Staging

You can bypass the stages at any time and immediately deploy the update to all managed devices in the Management Zone.

1 Select the check box for an update.

2 Click *Action > Bypass Stages and Apply to All Devices*.

20.6 Canceling a Deployment

This option is mainly for canceling a deployment that has not yet started.

If you select to apply the update only through stages, and if you cancel the update deployment, the status in the Available System Updates panel is changed to *Aborted*.

However, for an update, you can select to deploy to individual devices, as well as through stages for the other devices. Therefore, the status in the Available System Updates panel is changed to:

  ◆ *Ready* if you cancel only the staged deployment.

  ◆ *Aborted* if you cancel both the staged deployment and the deployment for individually selected devices.

To cancel a deployment:

1 Select the check box for an update.

2 Click *Action > Cancel Deployment*.

WARNING: If you cancel a deployment that is currently running (not just scheduled), all deployment actions performed up to that point cannot be reversed. There currently is no rollback option.

3 Click *OK* to confirm canceling the deployment.

20.7 Clearing an Error to Retry a Deployment

To continue with the deployment after determining that an error is not serious enough to stop the deployment: Click *Action > Clear Error and Continue*.

20.8 System Update Fails on the Device with an Error Code

When you deploy an update on the managed device, the system update checks for the availability of the Windows installer service, before making any change to the device.

If installation of other MSIs, not related to ZENworks, is in progress and the system update installation begins, the update of subsequent ZENworks MSIs fails.The Windows installer displays the following error with the error code 1618:

```
ERROR_INSTALL_ALREADY_RUNNING
```

You need to redeploy the update on the managed device to successfully update the ZENworks MSIs.

20.9 Viewing Status by Device

The following sections contain more information:

- Section 20.9.1, "Understanding Device Statuses," on page 184
- Section 20.9.2, "Viewing a Device's Properties," on page 185
- Section 20.9.3, "Viewing Information on a Device's Status," on page 186
- Section 20.9.4, "Toggling Ignored Devices," on page 186
- Section 20.9.5, "Redeploying Updates to Devices," on page 187
- Section 20.9.6, "Rescheduling Updates to Devices," on page 187
- Section 20.9.7, "Refreshing Devices," on page 188

20.9.1 Understanding Device Statuses

The following graphic illustrates the Deploying System Updates panel on the System Updates page:

Figure 20-2   *Deploying System Updates Panel*

Deploying System Updates							
Action ▾							
☐ Update Name	Start Schedule	Reboot Behavior	Stage	Status	Pending	Successful	Failed
☐ ZCM Update 10.0.2	Now	Prompt User	All Devices Stage	In Process	1	0	0

You can click any of the underlined links to display the corresponding status of devices. For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

Figure 20-3 *Device by Status Page for Devices with Pending Status*

Update for ZCM 10.0.7 - Devices with Pending Status				⋀
Action ▾				
☐ Ignore Device	Device ≜	Status	Device Type	In Folder
☐	**zendoc3a**	Update Assigned	Server	/devices/servers/zendoc3a
◄ ► 1 - 1 of 1				show 5 ▾ items

The possible statuses that can be viewed on this page are:

All Devices: Lists all devices that were configured to receive the selected update, regardless of status.

Pending Devices: Lists only the devices where the selected update is pending.

Successful Devices: Lists all of the devices where the selected update has been successfully deployed.

Failed Devices: Lists only the devices where the selected update failed.

Update Assigned: Lists only the devices where the selected update has been assigned.

The following table explains the column information. For some columns, you can sort the listed information by clicking a column heading. Click it again to reverse the sorting order. This page refreshes automatically to allow you to work with devices as the update is applied on them.

Column Heading	Explanation
Device	The device's name. Click it to display the device's properties page in ZENworks Control Center.
Status	The current update deployment status for the device. Click the status item to view information about the status. For more information on the individual statuses, see Chapter 23, "Update Statuses," on page 195.
Device Type	Whether the device is a server or workstation.
In Folder	Displays the ZENworks Control Center folder where the device's ZENworks object resides.

20.9.2 Viewing a Device's Properties

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Click the underlined link in the *Device* column to display the device's properties.

20.9.3 Viewing Information on a Device's Status

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Click the underlined link in the *Status* column to display status information about the device.

20.9.4 Toggling Ignored Devices

Ignoring a device is helpful if an update fails on a device and you want to continue with the deployment without resolving the error. For example, if a device is offline, you might want to ignore that device so that the deployment can continue.

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Click the check box next to one or more devices.

4 Click *Action > Toggle Ignored Devices*.

The options available from the *Action* menu vary, depending on whether you are viewing the All Assigned Devices Status panel, the Devices with Pending Status panel, or the Devices with Failed Status panel. If you are viewing the Devices with Success Status panel, no options are available.

20.9.5 Redeploying Updates to Devices

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Select the check box next to one or more devices.

4 Click *Action > Redeploy Update to Devices*.

The options available from the *Action* menu vary, depending on whether you are viewing the All Assigned Devices Status panel, the Devices with Pending Status panel, or the Devices with Failed Status panel. If you are viewing the Devices with Success Status panel, no options are available.

20.9.6 Rescheduling Updates to Devices

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Select the check box next to one or more devices.

4 Click *Action > Reschedule Devices*.

The options available from the *Action* menu vary, depending on whether you are viewing the All Assigned Devices Status panel, the Devices with Pending Status panel, or the Devices with Failed Status panel. If you are viewing the Devices with Success Status panel, no options are available.

The *Reschedule Devices* option displays only when the update deployment is scheduled. If the update has a schedule of *Now*, this option is not available.

20.9.7 Refreshing Devices

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Deploying System Updates panel, click an underlined link in the *Update Name*, *Stage*, *Pending*, *Successful*, or *Failed* column to display the appropriate Status by Device page.

For example, if you click the link in the *Pending* column, you see the status of devices on which the deployment is pending, as in the following figure:

3 Select the check box next to one or more devices.

4 Click *Action > Refresh Device*.

The options available from the *Action* menu vary, depending on whether you are viewing the All Assigned Devices Status panel, the Devices with Pending Status panel, or the Devices with Failed Status panel. If you are viewing the Devices with Success Status panel, no options are available.

Deleting Updates

<div style="text-align: right; font-size: 2em;">21</div>

You can clear an update that fails to download, or an update that you do not want to deploy.

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Available System Updates panel, select the check boxes for one or more updates.

3 Click *Action > Delete Update*.

Available System Updates	
Action ▾	
☐ Check for Updates	Release Date
☑ Download Update	Mar 7, 2008
Cancel Download	
☐ Deploy Update to Devices	Jan 1, 2008
Deploy PRU Now	
☐ Delete Update	Dec 25, 2007
☐ ZCM Update 10.0.2	Oct 31, 2007
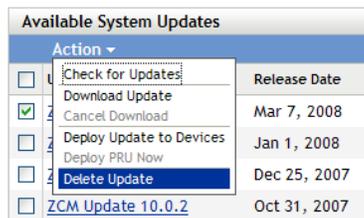
The update is deleted from the list and all downloaded files are removed. However, if the deleted update is still available on the update server, it is displayed in the list again for possible downloading the next time that you check for updates.

Reviewing the Content of an Update

22

You might want to review the content of an update for the following reasons:

  ◆ To determine whether to download the update
  ◆ To determine whether to deploy a downloaded update
  ◆ To review what was deployed by the update
  ◆ To review the history of the update

This section contains the following information:

  ◆ Section 22.1, "Viewing the Release Details Page," on page 191
  ◆ Section 22.2, "Update Release Details," on page 192
  ◆ Section 22.3, "Deployment History," on page 192

22.1 Viewing the Release Details Page

1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.

2 In the Available System Updates panel, click an update name in the *Update Name* column to display the Release Details page:
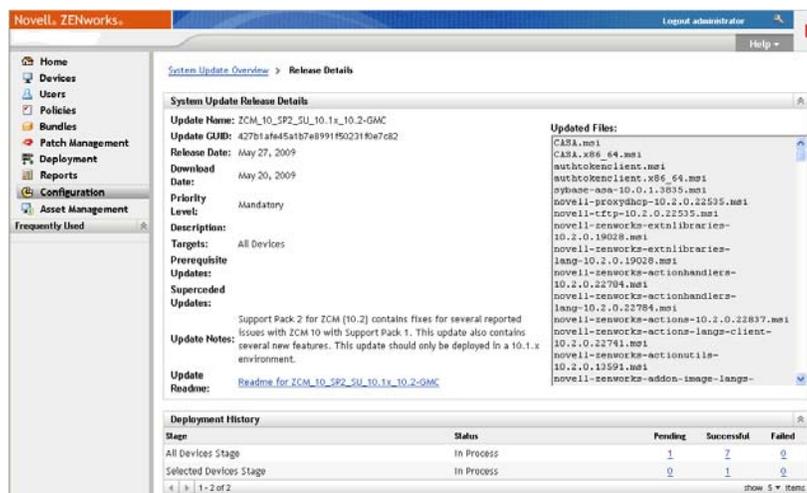
22.2 Update Release Details

Table 22-1 *Information from the System Update Release Details Panel*

Column Heading	Explanation
Update Name	The name of the update, which is created by Novell.
Update GUID	The update's GUID.
Release Date	The date the update was released by Novell.
Download Date	The date you downloaded the content of the update, including all files necessary to install the update.
Priority Level	The relative importance of the update's content to your ZENworks installation. Some possible entries: **OPTIONAL:** Not required for normal operation of ZENworks. **MANDATORY:** A required update that must be applied.
Description	Brief information about the purpose of the update and its content.
Targets	Indicates whether the target devices are Primary Servers only, all managed devices, or servers with ZENworks roles.
Product Version	The version of ZENworks in this update.
*Prerequisite Update*s	Any updates that are required for this update.
Superseded Updates	Any updates that the current update supersedes.
Update Notes	Brief information about important issues related to the update.
Update Readme	Information pertinent to deploying the update, such as last-minute instructions. Click this entry to open the Readme.
Updated Files	Lists all of the files contained in the update that will be applied to update your ZENworks software.

22.3 Deployment History

This Deployment History panel displays a current snapshot of the history for the selected update. It does not automatically refresh its content.

The following sections contain more information:

- Section 22.3.1, "Understanding Deployment History Details," on page 193
- Section 22.3.2, "Performing Deployment History Tasks," on page 194

22.3.1 Understanding Deployment History Details

Table 22-2 *Columns for the Deployment History Details Panel*

Column Heading	Explanation
Stage	Indicates the deployment method used. The possible entries are: **stage_name:** The update was deployed to the managed devices that are members of the stage that is listed. **Selected Devices Stage:** The update was deployed to selected managed devices in the Management Zone that are not members of a stage. **All Devices Stage:** The update was deployed to all managed devices in the Management Zone that are not members of a stage.
Status	Indicates the status of the update that was successfully deployed, such as *Applied* or *Baselined*. **In Process:** The update is currently being deployed to the members of the stage. For more information on the individual statuses, see Chapter 23, "Update Statuses," on page 195.
Pending	Displays the number of devices for which the update deployment process is pending. A device can be pending if it is a member of a stage when stages are not automatically started after another stage completes. Click the number to view the Status by Device page, which displays the devices that have the deployment of the update pending.
Successful	Displays the number of devices for which the update deployment process has completed. Click the number to view the Status by Device page, with the devices displayed that successfully received the update.
Failed	Displays the number of devices for which the update deployment process has failed. Click the number to view the Status by Device page, which displays the devices that failed to receive the update. For failed deployments, you have the option of ignoring the error and continuing, or you can redeploy the update if the error has been resolved.

22.3.2 Performing Deployment History Tasks

Table 22-3 *Tasks for Evaluating an Update's Deployment History*

Task	Steps	Additional Details
View which devices have their deployment pending	1. In the Deployment Stages panel, click the number in the *Pending* column. 2. On the Status by Device page, review the information.	Displays devices where the deployment of the update is pending.
View the devices where deployment was successful	1. In the Deployment Stages panel, click the number in the *Successful* column. 2. On the Status by Device page, review the information.	Displays devices that have had the selected update successfully applied.
View which devices had the deployment fail	1. In the Deployment Stages panel, click the number in the *Failed* column. 2. On the Status by Device page, review the information.	Displays devices where the update deployment failed. In order to consider a deployment successfully finished when there are failed devices, the failed devices should either be ignored, or the error should be fixed before you redeploy the update to those failed devices.

Update Statuses

23

The following update statuses can be displayed in the *Status* column of several System Update panels in ZENworks Control Center:

Aborted: The deployment of the update was stopped, such as by selecting *Action > Cancel Deployment*.

Applied: The update was successfully applied to the managed devices.

Available: Updates with this status have downloaded the information about the update, which you can view by clicking the update name in the *Update ID* column.

Awaiting Reboot: The device is waiting for you to manually reboot after the update has been applied.

Baselined: The update has been assigned to the `/Devices` folder, meaning that all new devices added to the Management Zone automatically get the update, unless they are already at that update level. When an update is baselined, any packages (MSIs and RPMs) that were updated by the system update have been deleted and replaced with the new packages. A baselined update is considered complete; although, individual devices could have been ignored.

In previous versions of ZENworks Configuration Management, when an update was baselined, the ZENworks Agent packages on all ZENworks Servers were rebuilt with the latest software. In this version, however, the agent packages are rebuilt during the upgrade process of each individual Server.

Canceled: Displays after you select *Action > Cancel Download* and the download or deployment was successfully canceled.

Canceling: Temporarily displays after you select *Action > Cancel Download*.

Deploying: The update is currently being deployed. See Chapter 20, "Deploying Updates," on page 173 for further deployment information and for actions that you can take on an update that is being deployed.

Downloaded: You have downloaded the update's content and it is ready for deployment. See Chapter 20, "Deploying Updates," on page 173 for further deployment information and for actions that you can take on an update that has been deployed.

Downloading: Displays a percentage of completion during the downloading process. This status changes to *Downloaded* when the download is complete.

Error: The stage failed to complete because of an error with one or more of the devices being updated. You can select to ignore the error and continue, or to fix the error before continuing. This status can also indicate an error in downloading the update.

In Process: That the current stage is active.

Installing Update: The update is currently being installed on the device.

Ready: The current stage is ready to start.

Reboot in Process: Rebooting the device is in process.

Reboot Process Canceled: Rebooting the device after the update was applied was canceled.

Scheduled: The update has a schedule defined for it. See Chapter 20, "Deploying Updates," on page 173 when creating the deployment in the Create System Update Deployment Wizard. You can alter the update's schedule by using the *Action > Reschedule Deployment* option.

Stage Complete: The stage has completed.

Status Unknown: The status of updates for the device is unknown.

Superceded: Indicates that the update has been replaced by another update listed in the Available System Updates section. You should see this status only if you are in the process of deploying this update and there are pending devices. You can delete a superseded update, but you cannot deploy it.

Update Aborted: The update was canceled for the device.

Update Completed: Installation of the update has been completed on the device.

Update Completed with Errors: Installation of the update has been completed on the device, but there were errors. Check the update log for details.

Update Assigned: The update has been assigned to the device.

Zone Pre-Update Actions: Actions for the Management Zone are taking place before the server update begins.

Zone Post-Update Actions: Actions for the Management Zone are taking place after the server upgrade finishes.

Configuring the System Update Behavior of the ZENworks Adaptive Agent

<div style="text-align:right">**24**</div>

You can configure System Update behavior on the ZENworks Adaptive Agent that resides on managed devices.

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

2 In the Management Zone Settings panel, click *Device Management*, then click *System Update Agent*.

3 Fill in the fields:

Show Permission Prompt: Select *On* to display a dialog box on the managed device when a System Update is ready to begin. If this setting is set to *On*, the user can cancel, postpone, or allow the update to begin.

By default, this setting is set to *Off*, which does not give the user the ability to cancel or postpone the update, and the update begins immediately without the user being prompted.

Permission Prompt Max Postpone This setting specifies how many times the user can postpone the update. If you select *On* for the *Show Permission Prompt* setting, the user is prompted before a System Update begins. The user can then postpone the update. Select *Unlimited* to let the user postpone the update an unlimited number of times. Or, Select *Limit*, then specify a number to let the user postpone the update the specified number of times. By default, the user can postpone the update five times.

NOTE: Because this feature was added after localization for non-English-languages, there is no translation available for the string required to indicate to the user that they have a limited number of postpone attempts. In the event that a localized string is unavailable for the local language (this will be the case for all non-English languages), this setting is ignored, and the user is allowed an unlimited number of postpones. You can remedy this limitation by setting the *PERMISSION_MSG_POSTPONES_REMAINING* string in the registry under *HKEY_LOCAL_MACHINE\Software\Novell\ZCM\SystemUpdate* using {0} to indicate the number of postpones remaining.

Permission Prompt Timeout When the user is prompted for permission to apply the update, you can specify how long you want to wait for an answer before the update begins. To display the permission prompt until the user responds, select *No Timeout*. Or, select *Timeout after _ mins* and specify the number of minutes you want an unanswered prompt to remain on the user's screen before the update starts. By default, the user has five minutes to respond to the prompt.

Specify this value in minutes.

Permission Prompt Nag Time When the user chooses to postpone the start of the update, this setting specifies how often the prompt appears to let the user know that an update is waiting to start. By default, this prompt displays every 15 minutes.

Specify this value in minutes.

Specify this value in minutes. The default is 120 minutes.

Reboot Prompt Nag Dialog If this setting is set to *On,* a dialog box is displayed on the managed device to remind the user that a reboot is required to complete the update. By default, the setting is set to *On*, and the dialog box displays every 15 minutes.

Reboot Prompt Max Postpone This setting specifies how many times the user can postpone the reboot if one is required for the update. If you select *On* for the *Reboot Prompt Nag Dialog* setting, the user is prompted before a reboot occurs. The user can then postpone the reboot. Select *Unlimited* to let the user postpone the reboot an unlimited number of times. Or, Select *Limit*, then specify a number to let the user postpone the reboot the specified number of times. By default, the user can postpone the reboot five times.

NOTE: Because this feature was added after localization for non-English-languages, there is no translation available for the string required to indicate to the user that they have a limited number of postpone attempts. In the event that a localized string is unavailable for the local language (this will be the case for all non-English languages), this setting is ignored, and the user is allowed an unlimited number of postpones. You can remedy this limitation by setting the *REBOOT_MSG_POSTPONES_REMAINING* string in the registry under *HKEY_LOCAL_MACHINE\Software\Novell\ZCM\SystemUpdate* using {0} to indicate the number of postpones remaining.

Reboot Prompt Timeout When an update is assigned with the *Prompt User for Reboot* option, the default behavior is to wait five minutes for a response from the user and, in the absence of a response, automatically initiate the reboot. Select *No Timeout* to display the dialog box until the user responds, without initiating the reboot. Or, select *Timeout after _ mins*, then specify the number of minutes to wait for the reboot response before initiating the reboot.

Reboot Prompt Nag Time When an update assigned with the *Suppress Reboot* option, or if a user chooses to cancel a required reboot, a dialog box displays to remind the user that a reboot is required to complete the update. By default, the dialog box displays every 15 minutes. This setting lets the administrator define how often the prompt is presented to users.

Specify this value in minutes.

Update Watcher Icon You can specify a different icon that displays on the managed device's notification area of the system tray. The path to the file must resolve on the managed device. If the file does not exist, or if the file in not a valid `.ico` file, the default icon displays.

Agent Message Overrides You can provide custom text for Agent System Update messages that display in dialog boxes during the update. Click *Add* to display the Edit Agent System Update Message dialog box. Select a Message Key from the drop-down list, type the desired text, then click *OK*.

You can also remove and edit custom messages that you have created.

4 Click OK.

Users

V

The following sections provide information about connecting your ZENworks Management Zone to an authoritative user source (Microsoft Active Directory or Novell eDirectory) and managing how users log in to the ZENworks Management Zone:

User Sources

Novell ZENworks 10 Asset Management enables you to connect to one or more LDAP directories to provide authoritative user sources in ZENworks. Adding a user source lets you associate ZENworks administrator accounts with LDAP user accounts, associate devices with the users who primarily use them, and run asset inventory and management reports that include users.

NOTE: After you define a user source, the ZENworks Adaptive Agent automatically prompts device users to log in to the ZENworks Management Zone. If you do not want users to receive this prompt, you can uninstall or disable the User Management module at the ZENworks Adaptive Agent level. For more information, see Section 13, "Configuring Adaptive Agent Settings after Deployment," on page 131.

The following sections provide instructions to define user sources:

25.1 Prerequisites

❑ **Minimum directory version:** Novell eDirectory 8.7.3 or Microsoft Active Directory on Windows 2000 SP4.

❑ **Minimum LDAP version:** LDAPv3

❑ **Minimum user account rights:** Read rights.

   For Active Directory, you can use a basic user account. This provides sufficient read access to the directory.

   For eDirectory, you need inheritable read rights to the following attributes: CN, O, OU, C, DC, GUID, WM:NAME DNS, and Object Class. You can assign the rights at the directory's root context or at another context you designate as the ZENworks root context.

   The username and password used to access the user source directory are stored in clear-text format on the ZENworks Linux Primary servers in the `/etc/CASA/authtoken/svc/iaRealms.xml` file. By default, the access to this file is limited because of security reasons.

   If you are an eDirectory user the required access rights that are provided by default are: Read, Write, Create, Erase, Modify, File Scan, and Access Control. These rights are sufficient to access a Roaming profile.

❑ **DNS name resolution:** With Active Directory, your ZENworks Servers (in particular, the DNS clients on the ZENworks Server) must be able to resolve the DNS name of each Active Directory domain defined as a user source. Otherwise, users from the Active Directory domain cannot log in to the ZENworks Management Zone.

25.2 Managing User Sources

The following sections contain more information:

- Section 25.2.1, "Adding User Sources," on page 202
- Section 25.2.2, "Deleting User Sources," on page 205
- Section 25.2.3, "Editing User Sources," on page 206
- Section 25.2.4, "Adding a Container from a User Source," on page 207

25.2.1 Adding User Sources

1 In ZENworks Control Center, click the *Configuration* tab.
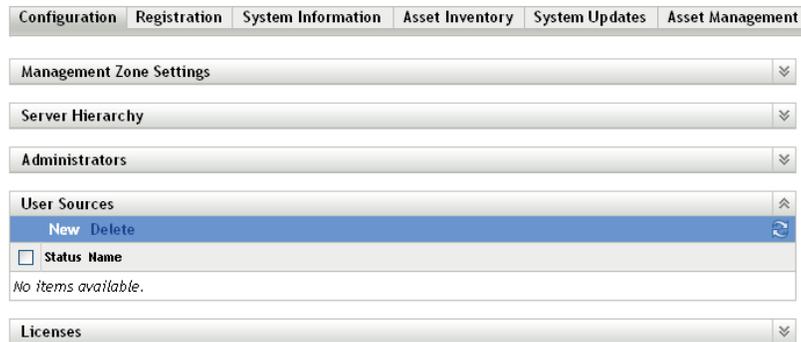
2 In the User Sources panel, click *New* to launch the Create New User Source Wizard.

3 Follow the prompts to create the connection to the user source.

For information about each of the wizard pages, click the *Help* button or refer to the following table:

Wizard Page	Details
Connection Information page	Specify the information required to create a connection to the LDAP directory: ◆ **Connection Name:** Specify a descriptive name for the connection to the LDAP directory. ◆ **Address:** Specify the IP address or DNS hostname of the server where the LDAP directory resides. ◆ **Use SSL:** By default, this option is enabled. Disable the option if the LDAP server is not using the SSL (Secure Socket Layer) protocol. ◆ **Port:** This field defaults to the standard SSL port (636) or non-SSL port (389) depending on whether the *Use SSL* option is enabled or disabled. If your LDAP server is listening on a different port, select that port number. ◆ **Root Context:** The root context establishes the point in the directory where you can begin to browse for user containers. Specifying a root context can enable you to browse less of the directory, but it is optional. If you don't specify a root context, the directory's root container becomes the entry point.
Certificate Page	(Conditional) If you selected Use SSL on the previous Wizard page (Connection Information), the Certificate page displays as the next. step in the Wizard. Ensure that the Certificate is correct.

Credentials page	Specify a username and password for accessing the directory:
	
	◆ **Username:** Specify the username for a user that has read-only access to the directory. The user can have more than read-only access, but read-only access is all that is required and recommended.
	
	For Novell eDirectory access, use standard LDAP notation. For example:
	
	`cn=admin_read_only,ou=users,o=mycompany`
	
	For Microsoft Active Directory, use standard domain notation. For example:
	
	`AdminReadOnly@mycompany.com`
	
	◆ **Password:** Specify the password for the user you specified in the *Username* field.

Wizard Page	Details
Authentication Mechanisms page	Select the mechanism used to authenticate users to the ZENworks Management Zone. The available mechanisms depend on whether you are configuring a Novell eDirectory or a Microsoft Active Directory user source.

- ◆ **Kerberos:** Active Directory only. Enables Kerberos authentication in which the Active Directory server generates a Kerberos ticket that Novell Common Authentication Services Adapter (CASA) uses to authenticate the user, instead of using a username and password. Kerberos authentication is often used with smart cards.

- ◆ **Username/Password:** eDirectory or Active Directory. Enables simple authentication using a username and password.

- ◆ **Shared Secret:** eDirectory only. Enables a user to automatically log in to ZENworks when a smart card is used to log in to eDirectory. This option is enabled only if the schema of the eDirectory specified in the Connection Information page is extended using the novell-zenworks-configure tool.If *Shared Secret* is not selected as an authentication mechanism, a ZENworks login dialog box is displayed when the user on the managed device attempts to log in to eDirectory using a smart card. After the user specifies the eDirectory username and password, that password is stored in Novell SecretStore. The next time the user uses a smart card to log in to eDirectory, the password is retrieved from SecretStore and the user is logged in to the ZENworks without having to specify the password.

If you select both available mechanisms (*Kerberos* and *Username/Password* for Active Directory or *Username/Password* and *Shared Secret* for eDirectory), ZENworks Configuration Management attempts to use the first mechanism for authentication. If authentication fails, the next mechanism is used. For example, if you select *Kerberos* and *Username/Password* for Active Directory, ZENworks Configuration Management first attempts to use Kerberos authentication. If Kerberos authentication fails, simple Username/Password authentication is used.

Wizard Page	Details
User Containers page	After you connect to an LDAP directory as a user source, you can define the containers within the directory that you want exposed. The number of user containers you define is determined by how much of the directory you want to expose. Consider the following example:


```
MyCompany
 ├── EMEA
 │    ├── Accounting
 │    │    ├── Users
 │    │    └── Groups
 │    ├── Sales
 │    │    ├── Users
 │    │    └── Groups
 │    ├── Servers
 │    ├── Services
 │    └── Groups
 ├── ASIAPAC
 └── AMERICAS
```
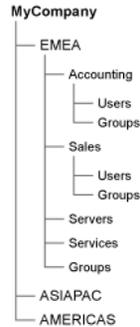
Assume that you want to enable all users in the Accounting and Sales containers to receive ZENworks content. In addition, you want to be able to access the user groups located in the Accounting, Sales, and Groups containers in order to distribute content based on those groups. To gain access to the users and groups, you have two options:

Assume that you want to expose only the user and user groups in the Accounting, Sales, and Groups containers. To gain access to those users and groups, you have two options:

 ◆ You can add MyCompany/EMEA as a user container, so all containers located below EMEA are visible in ZENworks Control Center, including the Servers and Services containers. Only users and user groups located in the EMEA containers are visible (servers and services are not), but the structure is still exposed.

 ◆ You can add MyCompany/EMEA/Accounting as one user container, MyCompany/EMEA/Sales as a second container, and MyCompany/EMEA/Groups as a third container. Only these containers become visible as folders beneath the MyCompany directory reference in ZENworks Control Center.

To add the containers where users reside:

1. Click *Add* to display the Add User Container dialog box.

2. In the *Context* field, click ₌ to browse for and select the desired container.

3. In the *Display Name* field, specify the name you want used for the user container when it is displayed in ZENworks Control Center.

4. Click *OK* to add the container to the list.

25.2.2 Deleting User Sources

When you delete a source, all assignments and messages for the source's users are removed. You cannot undo a source deletion.

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

2 In the User Sources panel, select the check box next to the user source, then click *Delete*.

3 Click *OK* to confirm the deletion.

25.2.3 Editing User Sources

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

2 In the User Sources panel, click the underlined link for a user source.

3 You can edit the following settings:

Username and Password: Click *Edit*, edit the fields, then click *OK*.

The ZENworks system uses the username to access the LDAP directory. The username must provide read-only access to the directory. You can specify a username that provides more than read-only access, but read-only access is all that is required and recommended.

For Novell eDirectory access, use standard LDAP notation when specifying the username. For example:

`cn=admin_read_only,ou=users,o=mycompany`

For Microsoft Active Directory, use standard domain notation. For example:

`AdminReadOnly@mycompany.com`

Authentication Mechanisms: Click *Edit*, select the desired mechanisms, then click *OK*.

For more information, see Section 26.2, "Authentication Mechanisms," on page 220.

Use SSL: By default, this option is enabled. Click *No* to disable the option if the LDAP server is not using the SSL (Secure Socket Layer) protocol.

If you edit this option, you must do the following for every connection that is listed in the connections panel:

- ◆ **Update the certificate:** For more information on updating the certificate see, Section 25.3.4, "Updating a Certificate for a User Source," on page 209
- ◆ **Update the port:** If your LDAP server is listening on a different port, select that port number.

NOTE: If you edit the user source either to enable or disable the *Use SSL* option, you must restart the ZENworks services on the server or the authentication to the user source fails.

Root Context: Click *Edit*, specify the root context, then click *OK*.

The root context establishes the point in the directory where you can begin to browse for user containers. Specifying a root context can enable you to browse less of the directory, but it is completely optional. If you don't specify a root context, the directory's root container becomes the entry point. Click Edit to modify the root context.

Description: Click *Edit*, modify the optional information about the user source, then click *OK*.

User Containers: For more information, see Section 25.2.4, "Adding a Container from a User Source," on page 207. You can also remove or rename a user container.

Connections: For more information, see Section 25.3.2, "Editing User Source Connections," on page 208.

Authentication Servers: For more information, see Section 25.5, "Managing Authentication Server Connections for User Sources," on page 211.

25.2.4 Adding a Container from a User Source

After you've defined a user source in your Management Zone, you can add containers from that source at any time.

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

2 In the User Sources panel, click the user source.

Configuration > **zen-ad-domain.zenworks.lab.novell.com**

General	⊗
Name:	zen-ad-domain.zenworks.lab.novell.com
Directory Type:	Active Directory
Communication Status:	🟢
Username and Password: (Edit)	cn=ReadOnlyUser,cn=users,DC=zen-ad-domain,DC=zenworks,DC=lab,DC=novell,DC=com
Authentication Mechanisms: (Edit)	Kerberos
Use SSL:	Yes (No)
Root Context: (Edit)	DC=zen-ad-domain,DC=zenworks,DC=lab,DC=novell,DC=com
Description: (Edit)	

User Containers	⊗
Add Replace Remove Rename	
☐ **Context**	**Name**
☐ /zen-ad-domain.zenworks.lab.novell.com/Users Users	

3 In the User Containers panel, click *Add* to display the Add User Container dialog box, then fill in the following fields:

Context: Click ◣ to browse for and select the container you want to add.

Display Name: Specify the name you want used for the user container when it is displayed in ZENworks Control Center. The name cannot be the same as the name of any other user containers.

4 Click *OK* to add the user container.

The container, and its users and user groups, is now available on the *Users* page.

25.3 Managing User Source Connections

You can use Primary Servers and Satellite devices that have the Authentication role to authenticate users to the ZENworks Management Zone. To improve performance, you can create multiple connections to local replicas of Novell eDirectory or Active Directory trees so that Satellites do not have to authenticate users over a WAN or slow link. Creating connections to local LDAP user sources also provides fault tolerance by providing failover to other user source connection in the event that one connection does not work.

For example, if you use Novell eDirectory in your ZENworks environment, you can use multiple authentication servers in your system so that Satellites with the Authentication role can contact local authentication servers for authentication purposes rather than contacting remote servers.

If a user source connection cannot connect, there is more than a one-minute delay for each subsequent user source connection that is tried. This results from CASA having an internal delay that is not currently configurable.

The following sections contain more information.

- Section 25.3.1, "Creating User Source Connections," on page 208
- Section 25.3.2, "Editing User Source Connections," on page 208
- Section 25.3.3, "Removing User Source Connections," on page 209
- Section 25.3.4, "Updating a Certificate for a User Source," on page 209

25.3.1 Creating User Source Connections

1 In ZENworks Control Center, click the *Configuration* tab, then click a user source in the User Sources panel.

2 In the Connections panel, click *Add* to launch the Create New Connection Wizard.

3 Fill in the fields:

Connection Name: Specify a descriptive name for the connection to the LDAP directory.

Address: Specify the IP address or DNS hostname of the server where the LDAP directory resides.

Port: This field defaults to the standard SSL port (636) or non-SSL port (389) depending on whether the user source uses SSL. If your LDAP server is listening on a different port, select that port number.

Add Connection to all Primary Servers: Adds the connection you are creating to all ZENworks Primary Servers in the Management Zone.

4 (Conditional) If the user source uses the Secure Socket Layer (SSL) protocol, click *Next* to display the Certificate page, ensure that the certificate is correct, then click *Next* to advance to the Summary page.

or

If the user source does not use SSL, click *Next* to advance to the Summary page.

5 Review the information and, if necessary, use the *Back* button to make changes to the information, then click *Finish*.

For more information about configuring Satellites with the Authentication role, see Chapter 6, "Satellites," on page 75.

25.3.2 Editing User Source Connections

1 In ZENworks Control Center, click the *Configuration* tab, then click a user source in the User Sources panel.

2 In the Connections panel, click the name of a connection to display the Edit Connection Details dialog box.

3 Edit the fields, as necessary:

Connection Name: Displays a descriptive name for the connection to the LDAP directory. You cannot edit this field.

Address: Specify the IP address or DNS hostname of the server where the LDAP directory resides.

Use SSL: Displays *Yes* or *No*, depending on whether the user source uses SSL. You cannot edit this field.

Port: This field defaults to the standard SSL port (636) or non-SSL port (389) depending on whether the user source uses SSL. If your LDAP server is listening on a different port, select that port number.

Certificate: If the user source uses SSL, displays the certificate for the user source. You cannot edit the certificate.

Update: If the user source uses SSL, click the *Update* button to update the certificate, if a new certificate exists.

4 Click *OK*.

25.3.3 Removing User Source Connections

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

2 In the User Sources panel, click the underlined link for a user source.

3 In the Connections panel, select a connection's check box.

4 Click *Remove*.

25.3.4 Updating a Certificate for a User Source

A certificate is used to allow secure communication between devices and user sources. If your certificate expires or you want to change the certificate, you need to update the certificate.

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

Configuration > zen-ad-domain.zenworks.lab.novell.com

General	
Name:	zen-ad-domain.zenworks.lab.novell.com
Directory Type:	Active Directory
Communication Status:	●
Username and Password: (Edit)	cn=ReadOnlyUser,cn=users,DC=zen-ad-domain,DC=zenworks,DC=lab,DC=novell,DC=com
Authentication Mechanisms: (Edit)	Username/Password
Use SSL:	Yes (No)
Root Context: (Edit)	DC=zen-ad-domain,DC=zenworks,DC=lab,DC=novell,DC=com
Description: (Edit)	

User Containers

Add   Replace   Remove   Rename

□ Context	Name
□ /zen-ad-domain.zenworks.lab.novell.com/Users	Users

Connections

Add   Remove

□ Connection	Address	Port	Use SSL
□ AD		636	✔

2 In the User Sources panel, click the user source.

3 In the Connections panel, click a connection to display the Edit Connection Details dialog box.
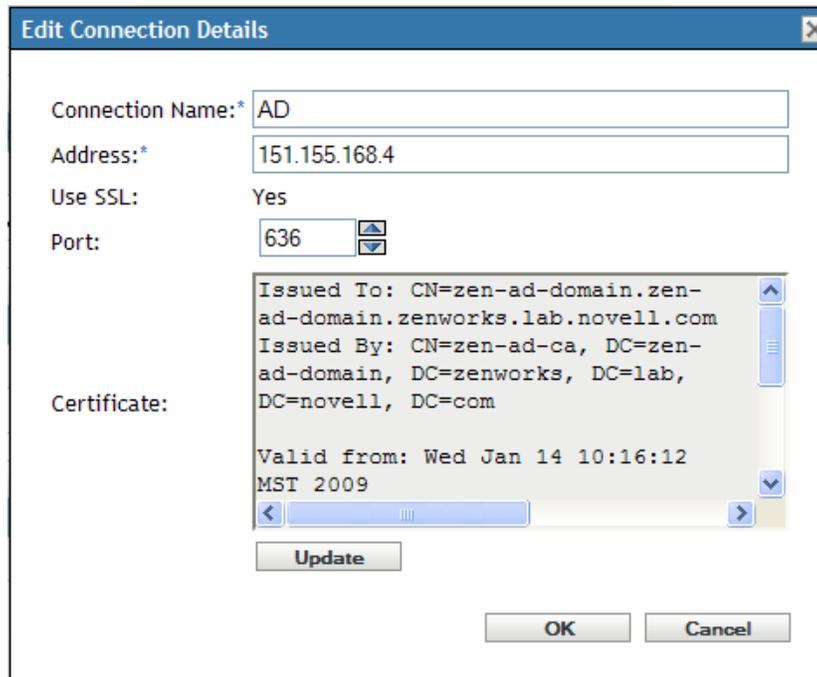
4 Click *Update*.

25.4 Managing Primary Server Connections for User Sources

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

2 In the Server Hierarchy panel, select the check box next to the Primary Server for which you want to configure authentication connections.

3 Click *Action > Configure Primary Authentication Connections*.

4 Select a user source from the drop-down list.

5 (Conditional) To add a user source connection, click Add to display the Add User Source Connections dialog box.

    1. (Optional) In the Connection Name field, specify all or part of the name for the connection to the LDAP directory, then click *Filter* to display the list of connections that match the search criteria.

    2. (Optional) In the Connection Address field, specify part of the IP address or DNS hostname of the connection to the LDAP directory, then click *Filter* to display all connections with that IP address.

    3. Select the check box next to the connection you want to add, then click *OK* to return to the Configure Primary Authentication Connections dialog box.

6 (Conditional) To remove a connection, select a connect, then click *Remove*.

7 (Conditional) To reorder the list of connections, select a connection, then click *Move Up* or *Move Down*.

8 Click *OK*.

25.5 Managing Authentication Server Connections for User Sources

The Authentication Servers panel on a user source's details page lets you edit authentication server connections, including adding, removing or reordering connections.

The Authentication Servers panel displays information about the user source's ZENworks Primary Servers and Satellite devices that have been configured with the Authentication role. You can also edit the user source settings for each device.

When users logged in to previous versions of ZENworks, they were authenticated to the Management Zone by contacting the ZENworks Primary Server, which in turn contacted the user source that contains the users.

Satellite devices with the Authentication role can now speed the authentication process by spreading the workload among various devices and by performing authentication locally to managed devices. You can have multiple Satellite devices with the Authentication role. In addition, each Satellite with the Authentication role can have multiple user sources configured and each Satellite can have multiple connections to each user source to provide failover.

On the managed device, the Authentication module is inactive until you promote the managed device to be a Satellite with the Authentication role or until the Authentication role is added to an existing Satellite.

The following sections contain more information:

25.5.1 Assigning a Connection to an Authentication Server

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

2 In the User Sources panel, click the name of a user source to display its details.

3 In the Authentication Servers panel, select the check box next to the server's name, then click *Edit* to display the Edit Authentication Server Connections dialog box.

4 Click *Add* to display the Add User Source Connections dialog box.

By default, the *Add* link is disabled because all connections to the user source display. If a connection is removed, the *Add* link is enabled.

5 (Optional) Use the *Connection Name* field to filter the list of connections.

Specify all or part of the name for the connection to the LDAP directory, then click *Filter* to display the list of connections that match the criteria.

If you have many connections in your ZENworks Management Zone, you can use the *Connection Name* field to display only those connections that match the criteria. For example, to display all connections that contain the word "London," type `London` in the *Connection Name* field, then click *Filter*.

6 (Optional) Use the *Connection Address* field to filter the list of connections.

Specify part of the IP address or DNS hostname of the connection to the LDAP directory, then click *Filter* to display all connections with that IP address.

If you have many connections in your ZENworks Management Zone, you can use the *Connection Address* field to display only those connections that match the criteria. For example, to search for and display all connections that have an IP address starting with 172, type 172 in the *Connection Address* field, then click *Filter*.

7 In the User Source Connections list, select the check box next to the desired connection.

8 Click *OK*.

25.5.2 Removing a Connection

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

2 In the User Sources panel, click the name of a user source to display its details.

3 In the Authentication Servers panel, select the check box next to the server's name, then click *Edit* to display the Edit Authentication Server Connections dialog box.

4 In the User Source Connections list, select the check box next to the desired connection, then click *Remove*.

5 Click *OK*.

25.5.3 Reordering Connections

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

2 In the User Sources panel, click the name of a user source to display its details.

3 In the Authentication Servers panel, select the check box next to the server's name, then click *Edit* to display the Edit Authentication Server Connections dialog box.

4 In the User Source Connections list, select the check box next to the desired connection, then click *Move Up* or *Move Down*.

The authentication server uses the connections in the order they are listed to authenticate the device to the ZENworks Management Zone.

5 Click *OK*.

25.6 Providing LDAP Load Balancing and Fault Tolerance

If you have multiple LDAP servers for access to your user source (directory), you can configure your ZENworks Servers to recognize each of the LDAP servers. This provides both load balancing and fault tolerance.

For example, if you have multiple ZENworks Servers, you can configure each one to access the user source through a different LDAP server. This distributes the workload more evenly among the LDAP servers.

Likewise, for each ZENworks Server, you can list multiple LDAP servers through which it can connect to the user source. If one of the LDAP servers becomes unavailable, the ZENworks Server uses another LDAP server.

In versions prior to ZENworks Configuration Management SP3, you need to specify the additional LDAP servers for a ZENworks Server in the `alt-servers.properties` configuration file located in the following directory on the ZENworks Server:

- Windows: `c:\program files\novell\zenworks\conf\datamodel\authsource`
- Linux: `/etc/opt/novell/zenworks/datamodel/authsource`

However, in ZENworks 10 Configuration Management SP3 (10.3), you can specify additional LDAP servers by using ZENworks Control Center or the zman command line utility.

If you upgrade from Novell ZENworks 10 Configuration Management 10.2.x to ZENworks 10 Configuration Management SP3 (10.3), you need to manually redefine the existing additional LDAP servers specified in the `alt-servers.properties` file. For more information on how to add or redefine the additional LDAP servers for the ZENworks Server, see the following sections:

25.6.1 Using ZENworks Control Center to Define Additional LDAP Servers for a ZENworks Server

1 In ZENworks Control Center, click the *Configuration* tab, then click a user source in the User Sources panel.

2 In the Connections panel, click *Add* to launch the Create New Connection Wizard.

3 Fill in the fields:

Connection Name: Specify a descriptive name for the connection to the LDAP directory.

Address: Specify the IP address or DNS hostname of the server where the LDAP directory resides.

Port: This field defaults to the standard SSL port (636) or non-SSL port (389), depending on whether the user source uses SSL. If your LDAP server is listening on a different port, select that port number.

Add Connection to all Primary Servers: Adds the connection you are creating to all ZENworks Primary Servers in the Management Zone.

4 (Conditional) If the user source uses the Secure Socket Layer (SSL) protocol, click *Next* to display the Certificate page, ensure that the certificate is correct, then click *Next* to advance to the Summary page.

or

If the user source does not use SSL, click *Next* to advance to the Summary page.

5 Review the information and, if necessary, use the *Back* button to make changes to the information, then click *Finish*.

25.6.2 Using the zman Command Line Utility to Define Additional LDAP Servers for a ZENworks Server

To define additional LDAP servers for a ZENworks Server, run the `user-source-add-connection (usac)` command on the server. For more information on using the zman command, see "User Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

25.7 User Source Settings

You can use the User Source Settings panel to perform the following tasks on the ZENworks Server.

25.7.1 Kerberos Authentication

The User Source Settings panel lets you browse for and select a keytab file used for Kerberos authentication. All Kerberos server machines need a keytab file to authenticate to the Key Distribution Center (KDC). The keytab file is an encrypted, local, on-disk copy of the host's key.

Before you can import the keytab file, you must set up a Kerberos service principal account and generate a keytab file for that account. For more information, see "Kerberos (Active Directory only)" on page 220.

To import the keytab file, click to browse for the file, then click *OK*.

After importing the keytab file, you can enable Kerberos authentication while adding a user source.To do so, click the *Configuration* tab, then click *New* in the User Sources panel to launch the Create New User Source Wizard. You can also enable Kerberos authentication on an existing user source. To do so, click the *Configuration* tab, click the user source, then click *Edit* next to Authentication Mechanisms in the General section.

25.7.2 Active Directory Settings

The Active Directory Settings panel lets you configure the range to search for Active Directory group memberships within a user container.

Consider a user container named BLR that has the A, B, and C top-level groups and the following nested groups:

* Group A has nested group A1, A1 has nested group A2, and A2 has nested group A3.
* Group B has nested group B1, B1 has nested group B2, and B2 has nested group B3.
* Group C has nested group C1, C1 has nested group C2.

Select one of the following options:

- **Top-level groups only:** Limits the search only within the top-level groups of the user container. For example, select this option if you want the search to be performed only in A, B, and C top-level groups; and not in the nested groups (A1, A2, A3, B1, B2, B3,C1, C2).

- **Top-level groups and all the nested groups:** Searches within all the top-level groups and all the nested groups of the user container. For example, select this option if you want the search to be performed in the top-level groups (A, B, and C) and in all the nested groups (A1, A2, A3, B1, B2, B3,C1, C2).

- **Top-level groups and the nested group depth level upto:** Lets you specify the nested grouplevel to perform the search. For example:
  - For nested group depth level specified as1, the search is performed in all the top-level groups (A, B, and C) and in the A1, B1, and C1 nested groups.
  - For nested group depth level specified as 2, the search is performed in all the top-level groups (A, B, and C) and in the A1, A2, B1, B2, C1, and C2 nested groups.
  - For nested group depth level specified as 3, the search is performed in all the top-level groups (A, B, and C) and in the A1, A2, A3, B1, B2, B3, C1, and C2 nested groups.

25.8 Troubleshooting User Sources

This section contains explanation on some of the user source problems.

-

An error occurs after adding an administrator group from Active Directory, when the AD is linked to the AD Root Domain

Explanation: While you configure a User Source, if you use Active Directory as the LDAP server and then add the root domain into the *Context* field, an error occurs. To resolve this problem, make sure you also add the AD Server to your `hosts` file.

Action: On a Windows managed device:

   1 Open `%SystemRoot%\system32\drivers\etc\hosts` in a text editor.

   2 Add the `<IP-Address-of-the-AD-Server> <Domain-Name>` entry to the file.

   For example, you could add the `164.99.165.51 sussex.nhs.uk` entry to `C:\WINDOWS\system32\drivers\etc\hosts`, where `164.99.165.51` is the IP address of the AD server and `sussex.nhs.uk` is the domain name.

Action: On a Linux managed device:

   1 Open `/etc/hosts` in a text editor.

2 Add the `<IP-Address-of-the-AD-Server>` `<Domain-Name>`
`<Short-Hostname>` entry to the above file.

For example, you could add the `164.99.165.51` `sussex.nhs.uk`
`sussex` entry to `/etc/hosts,` where `164.99.165.51` is the IP address
of the AD server, `sussex.nhs.uk` is the domain name, and `sussex` is the
short hostname.

User Authentication

26

The following sections provide information about authentication of users to a ZENworks Management Zone.

26.1 User Source Authentication

By default, a user is automatically authenticated to the Management Zone when he or she logs in to an LDAP directory (Novell eDirectory or Microsoft Active Directory) that has been defined as a user source in the Management Zone. User authentication to ZENworks can occur only if the user's LDAP directory (or the user's LDAP directory context) is defined as a user source in ZENworks.

The ZENworks Adaptive Agent integrates with the Windows Login or Novell Login client to provide a single login experience for users. When users enter their eDirectory or Active Directory credentials in the Windows or Novell client, they are logged in to the Management Zone if the credentials match the ones in a ZENworks user source. Otherwise, a separate ZENworks login screen prompts the user for the correct credentials.

For example, assume that a user has accounts in two eDirectory trees: Tree1 and Tree2. Tree1 is defined as a user source in the Management Zone, but Tree2 is not. If the user logs in to Tree1, he or she is automatically logged in to the Management Zone. However, if the user logs in to Tree2, the Adaptive Agent login screen appears and prompts the user for the Tree1 credentials.

Review the following sections:

26.1.1 Enabling Seamless Authentication on a Device

The first time a user logs in to a device that has more than one user source enabled, the user is prompted to select the user source and specify the user source credentials. During subsequent logins, the user is automatically logged in to the user source selected during the first login. However, if you do not want the user to be prompted to select the user source during the first login, perform the following steps to enable seamless login on the device:

1 Open the Registry Editor.

2 Go to `HKLM/Software/Novell/ZCM/ZenLgn/`.

3 Create a DWORD called EnableSeamlessLogin and set the value to 1.

If seamless login is enabled, a user's first login to a device might be slow. This is because all the existing user sources are searched and the user is logged in to the first user source that matches the user account. If many users use the same device, subsequent logins might also be slow because the user information might not be cached on the device.

26.1.2 Reducing Device Login Time by Specifying the Default User Source

To reduce the device login time, specify the default user source for the user to seamlessly log in to the device:

1 Open the Registry Editor.

2 Go to `HKLM/Software/Novell/ZCM/ZenLgn/`.

3 Create a String called DefaultRealm and set its value to the desired user source.

For example, if all the users should log in to a user source named POLICY-TREE, create a String called DefaultRealm and set its value to POLICY-TREE.

If the login to the specified default user source fails, the other existing user sources are searched, then the user is logged in to the user source that matches the user account.

26.1.3 Displaying the Login Status Messages on the Device Screen

On a Windows XP, Windows 2000, or Windows Server 2003 device, you can choose to view the status of the login during the process of logging in to ZENworks.

1 Open the Registry Editor.

2 Go to `HKEY_LOCAL_MACHINE\Software\Novell\NWGINA`.

3 Create a DWORD called EnableStatusMessages and set its value to 1.

26.1.4 Identifying the LDAP Directory That the User Has Logged In To

If the Novell Client is installed on a device, the `HKLM\Software\Novell\ZCM\ZenLgn` registry key that has DWORDS, `DomainLogin` and `eDIRLogin` is added by default on the device. The value of `DomainLogin` and `eDIRLogin` helps you identify whether a logged-in user has logged into Novell eDirectory or Microsoft Active Directory.

For example:

- If `DomainLogin` is set to 1, the user has logged in to Microsoft Active Directory.
- If `eDIRLogin` is set to 1, the user has logged in to Novell eDirectory.
- If both `DomainLogin` and `eDIRLogin` are set to 1, the user has logged in to both Microsoft Active Directory and Novell eDirectory.

This login information might be useful in the following scenarios:

Scenario 1: If a user has logged in to Microsoft Active Directory, a DLU policy does not need to be enforced on a device. Even if you choose to enforce a DLU policy on the device, the policy is not effective on the device. Consequently, you can add a system requirement that the DLU policy must be effective on the device only when the user has logged into Novell eDirectory.

Scenario 2: If a user has not logged in to Novell eDirectory, any bundle that must access content from a Netware shared location fails. Consequently, you can add a system requirement that the bundle must be effective on the device only when the user has logged in to Novell eDirectory.

26.1.5 Logging Directly in to a Workstation That has Both Novell Client and ZENworks Agent Installed

If you log into a device that has both Novell Client and ZENworks Agent installed, you are automatically logged in to ZENworks eDirectory, even if you have chosen to log in to the workstation only.

In the Novell Client dialog box, if you choose to log in to workstation only, then you must perform the following steps on the managed device to directly log in to the workstation:

On Windows XP device:

1 Open the Registry Editor.

2 Go to `HKLM/Software/Novell/ZCM/ZenLgn/`.

3 Create a DWORD called HonorClient32WorkstationOnlyCheckbox and set its value to 1.

On Windows Vista and Windows 7 device:

1 Open the Registry Editor.

2 Go to `HKLM/Software/Novell/ZCM/ZenLgn/`.

3 Create a DWORD called HonorWorkstationOnlyLogin and set its value to 1.

26.1.6 Authenticating in to a ZENworks Server That Has Novell SecretStore Configured

If you choose to log into a ZENworks Server that has Novell SecretStore configured, perform the following steps on the managed device:

1 Open the Registry Editor.

2 Go to `HKLM/Software/Novell/ZCM/ZenLgn/`.

3 Create a DWORD called EnableSecretStore and set its value to 1. However, if the DWORD already exists, then ensure that its value is set to 1.

Enabling Novell SecretStore on the device might increase the time to authenticate to the ZENworks Server, depending on the number of eDirectory servers that have been added to the Management Zone. For more information on Novell SecretStore operations, see TID 10091039 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

26.2 Authentication Mechanisms

The following mechanisms can be used to authenticate managed devices to the ZENworks Management Zone:

- Section 26.2.1, "Kerberos (Active Directory only)," on page 220
- Section 26.2.2, "Shared Secret," on page 222
- Section 26.2.3, "Username/Password (eDirectory and Active Directory)," on page 223

26.2.1 Kerberos (Active Directory only)

Kerberos, an authentication protocol developed at MIT, requires entities (for example, a user and a network service) that need to communicate over an insecure network to prove their identity to one another so that secure authentication can take place.

Kerberos functionality is included natively in a Windows Active Directory environment.

Kerberos requires the use of a Key Distribution Center (KDC) to act as a trusted third party between these entities. All Kerberos server machines need a keytab file to authenticate to the Key Distribution Center (KDC). The keytab file is an encrypted, local, on-disk copy of the host's key.

When using Kerberos authentication, the Active Directory server generates a Kerberos ticket that Novell Common Authentication Services Adapter (CASA) uses to authenticate the user, rather than using a username and password for authentication.

- "Setting Up Kerberos in your ZENworks Environment" on page 220
- "Enabling Kerberos Authentication While Adding a User Source" on page 221
- "Enabling Kerberos Authentication on an Existing User Source" on page 221
- "Understanding How Kerberos Authentication and the ZENworks Login Dialog Box Interact" on page 221

Setting Up Kerberos in your ZENworks Environment

1 Set up a Kerberos service principal account and generate a keytab file for that account.

For more information, see the Microsoft TechNet Web site (http://technet.microsoft.com/en-us/library/cc753771(WS.10).aspx).

For example, if you created a user called atsserver in your domain, you would run the following command from the command prompt:

```
ktpass /princ host/atsserver.users.myserver.com@MYSERVER.COM -pass
atsserver_password -mapuser domain\atsserver -out atsserver.keytab -mapOp
set -ptype KRB5_NT_PRINCIPAL
```

This command creates a keytab file and modifies the user atsserver to be a Kerberos principal.

2 Import the keytab file into ZENworks Control Center.

    2a In ZENworks Control Center, click the *Configuration* tab, click *Infrastructure Management*, then click *User Source Settings*.

    2b Click 🔍 to browse to and select the keytab file.

    2c Click OK to import the file.

Enabling Kerberos Authentication While Adding a User Source

You can enable Kerberos authentication while adding a user source. For more information see Section 25.2.1, "Adding User Sources," on page 202.

Enabling Kerberos Authentication on an Existing User Source

You can enable Kerberos authentication on an existing user source.

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

2 In the User Sources panel, click the user source, then click *Edit* next to *Authentication Mechanisms* in the General section.

3 Select the *Kerberos* check box, then click *OK*.

Understanding How Kerberos Authentication and the ZENworks Login Dialog Box Interact

The following table illustrates the ZENworks user experience using Kerberos authentication with Active Directory:

Table 26-1   *ZENworks Kerberos Authentication with Active Directory*

Windows login matches user source login?	ZENworks also uses Username/ Password authentication?	Member of same domain?	Member of different domain?	Windows and ZENworks credentials match?	Can log in to Management Zone?	ZENworks login dialog box appears?
✓	✓	✓		✓	Yes	No
✓		✓		✓	Yes	No
	✓		✓		Yes	Yes
			✓		No	No
			✓	✓	No	No
					No	No
				✓	No	No
✓	✓			✓	Yes	No
	✓		✓	✓	Yes	No
	✓				Yes	Yes

For example, in the second row, the user's initial login, user source, and ZENworks login credentials match. As a result, the user can log in to the ZENworks Management Zone and the ZENworks login dialog box does not appear.

As another example, in the third row, the user's initial login credentials are using credentials from a different domain and are different than the ZENworks login credentials. As a result, the user can log in to the ZENworks Management Zone, but the ZENworks login dialog box appears.

26.2.2 Shared Secret

When using Shared Secret authentication, you must install and configure the Novell Identity Assurance Solution Client. For more information, and for a list of supported smart card readers and smart cards, see the Identity Assurance Solution Client documentation on the Novell Documentation Web site (http://www.novell.com/documentation/).

Authentication in to ZENworks by using Smart Card is currently supported only on Windows XP and terminal sessions of Windows Server 2003 device.

When a user uses a smart card to log in to eDirectory, the user is automatically logged in to ZENworks provided the schema of the eDirectory specified when the user source is added has been extended using novell-zenworks-configure tool.

For more information on adding the user source, see Section 25.2.1, "Adding User Sources," on page 202.

For more information on extending the eDirectory schema, see "Extending the eDirectory Schema to enable Shared Secret Authentication" on page 222.

If the eDirectory schema is not extended, then *Shared Secret* is not available as an authentication mechanism. Consequently, a ZENworks login dialog box is displayed when the user on the managed device attempts to log in to eDirectory using a smart card. After the user specifies the eDirectory username and password, that password is stored in Novell SecretStore. The next time the user uses a smart card to log in to eDirectory, the password is retrieved from SecretStore and the user is logged in to the ZENworks without having to specify the password.

Extending the eDirectory Schema to enable Shared Secret Authentication

To authenticate in to ZENworks by using Shared Secret authentication mechanism, the schema of the eDirectory specified when the user source is added must have been extended using novell-zenworks-configure tool.

Perform the following steps to extend the eDirectory schema:

1 Run the `novell-zenworks-configure` utility on a ZENworks Server:

  On Windows: At the command prompt, change to `ZENworks_installation_path\bin` and enter the following command:

  `novell-zenworks-configure.bat -c ExtendSchemaForSmartCard`

  On Linux: At the console prompt, change to `/opt/novell/zenworks/bin` and enter the following command:

  `./novell-zenworks-configure -c ExtendSchemaForSmartCard`

2 You are prompted to continue with the action of extending the Novell eDirectory schema and adding an optional zcmSharedSecret attribute to the user class. By default, 1 is selected. Press Enter.

3 Enter the DNS name or IP address of the Novell eDirectory server to extend the schema.

4 You are prompted to select Secure Socket Layer (SSL) or Clear Text communication for communicating with the eDirectory server. Enter 1 for SSL communication or 2 for Clear Text Communication, then press *Enter* again.

5 Enter the port for communicating with the eDirectory server.

The default port for SSL communication is 636 and for Clear Text communication is 389.

6 Enter the fully distinguished name (FDN) of the Administrative User.

For example, cn=admin,o=organization

7 Enter the password for the Administrative User specified in Step 6.

8 (Optional) Enter the fully distinguished name for the ZENworks user source admin for whom the ACL would be applied.

The ZENworks user source admin is configured as a user in the ZENworks user source configuration for reading users from the user source and need not be the Administrative User specified in Step 6. If you specify the fully distinguished name of this user, the program sets ACLs at the specified containers to provide read access to zcmSharedSecret attribute for this user.

9 Enter the user containers for which you want to extend the schema.

Multiple containers can be given separated by + sign. For example, o=sales or o=sales + o=marketing.

10 Press *Enter* to generate random secret for all the users within the above containers.

11 (Conditional) If you have chosen SSL communication for communicating with the eDirectory server, the server presents a certificate. Enter *y* to accept the certificate.

26.2.3 Username/Password (eDirectory and Active Directory)

When using Username/Password authentication with a Novell eDirectory or Microsoft Active Directory user source, if the credentials the user specifies to log in to the workstation or to the domain match the ZENworks login credentials, the ZENworks login dialog box does not display and the user is authenticated to the ZENworks Management Zone.

The username and password are also stored in Secret Store. If a user later logs in to ZENworks where no username or password is available (for example, the user logged in using a smart card), the stored credentials are used and the ZENworks login dialog box is bypassed.

Enabling Username/Password Authentication While Adding a User Source

You can enable Username/Password authentication while adding a user source. For more information see Section 25.2.1, "Adding User Sources," on page 202.

Enabling Username/Password Authentication on an Existing User Source

You can enable Username/Password authentication on an existing user source.

1 In ZENworks Control Center, click the *Configuration* tab, click the user source, then click *Edit* next to *Authentication Mechanisms* in the General section.

2 In the User Sources panel, click the user source, then click *Edit* next to *Authentication Mechanisms* in the General section.

3 Select the *Username/Password* check box, then click *OK*.

Understanding How Username/Password Authentication and the ZENworks Login Dialog Box Interact

The following table illustrates the ZENworks user experience using Username/Password authentication with Active Directory:

Table 26-2 *ZENworks Username/Password Authentication with Active Directory*

Windows login matches user source login?	ZENworks also uses Kerberos authentication?	Member of same domain?	Member of different domain?	Windows and ZENworks credentials match?	Can log in to Management Zone?	ZENworks login dialog box appears?
✓	✓			✓	Yes	No
	✓		✓	✓	Yes	No
	✓				Yes	Yes
✓		✓		✓	Yes	No
			✓	✓	Yes	No
				✓	Yes	No
					Yes	Yes
✓		✓			Yes	Yes
✓			✓		Yes	Yes

For example, in the first row, the user's initial login, user source, and ZENworks login credentials match. As a result, the user can log in to the ZENworks Management Zone and the ZENworks login dialog box does not appear.

As another example, in the second row, the user's initial login credentials are using credentials from a different domain but match the ZENworks login credentials. As a result, the user can log in to the ZENworks Management Zone, and the ZENworks login dialog box does not appear.

26.3 Credential Storage

ZENworks uses Novell CASA (Common Authentication Services Adapter) to enable single sign-on. When the ZENworks Adaptive Agent authenticates a user to the Management Zone via the credentials entered in the Microsoft client, Novell client, or ZENworks login screen, the username and password is stored in the secure CASA vault on the user's device.

CASA is installed with the ZENworks Adaptive Agent. It includes the CASA Manager, which is an interface used to manage the credentials in the storage vault. The CASA Manager is available from the *Start > Program Files > Novell CASA* menu. Generally, you or the device's user should not need to use the CASA Manager. When a user's credentials change in the LDAP directory, they are updated in the CASA storage vault the next time the user logs in. If you do run the CASA Manager, you are prompted to install the GTK# Library. If you choose to install the library (which is necessary to run the CASA Manager), you are directed to a Novell Web site. However, the GTK# Library is currently unavailable at this site. You can choose to install the GTK# Library by downloading and installing the `gtksharp-runtime-2.8.3-win32-0.0.exe` file from the Google Code (http://casa-auth.googlecode.com/files/gtksharp-runtime-2.8.3-win32-0.0.exe) site.

Do not remove CASA from the managed device. If you do not want the CASA Manager displayed to users, you can remove the Novell CASA folder from the *Start > Program Files* menu.

26.4 Disabling ZENworks User Authentication

By default, if a user source is defined in the ZENworks Management Zone, the ZENworks Adaptive Agent attempts to authenticate a user to the zone whenever he or she logs in through the Microsoft or Novell client.

If necessary, you can disable user authentication to the zone. For example, you might have some users that only receive device-assigned content, so you don't want the overhead of having them logged in to the zone.

To disable user authentication to the zone:

1 Locate the following key in the registry on the user's device:

`HKEY_LOCAL_MACHINE\SOFTWARE\Novell\ZCM\ZenLgn`

2 (Conditional) If you want to disable login, add the following DWORD value:

Value name: DisablePassiveModeLogin

Value data: Any non-zero value (for example, 1, 2, 3, 100)

With login disabled, no attempt is made to authenticate to the Management Zone when the user logs in through the Microsoft or Novell client.

3 (Conditional) If you want to disable the ZENworks login prompt that appears if login through the Microsoft client or Novell client fails, add the following DWORD value:

Value name: DisablePassiveModeLoginPrompt

Value data: Any non-zero value (for example, 1, 2, 3, 100)

Normally, the Adaptive Agent attempts to authenticate the user to the zone by using the credentials entered in the Microsoft or Novell client. If login fails, the ZENworks login prompt is displayed in order to give the user an opportunity to authenticate with different credentials. This value setting disables the ZENworks login prompt.

26.5 Manually Disabling a DLU on a Workstation

You might need to disable a Dynamic Local User that is in a domain environment. Use the following procedure to disable or suppress a DLU:

1 Create a DWORD named `DLUAllowed` under `HKLM\Software\Novell\Workstation Manager`.

2 Set the value of `DLUAllowed` to `0x0`.

Logging in to an Account When a User Is Excluded in the DLU Policy

The Dynamic Local User policy creates and manages local accounts on their computers. Excluding a user or device from the DLU policy prevents the creation or management of local accounts on their computers.

However, you can use other existing credentials such as a domain account to log in to the computer, even when the device or user is listed in the exclusion list for that DLU policy.

26.6 Using a DLU in a Domain Environment

Domain authentication is not possible when you do a local login based on the eDirectory credentials and not the domain credentials. Enabling a DLU policy forces the creation and use of a local account that does not have access to domain resources, even if you are logged in to the domain.

When a DLU policy is enforced on devices joined to a domain, it forces a local log in instead of a domain log in. Using a DLU is not supported on a domain controller, because the domain controller has no local Security Accounts Manager (SAM) to provide a local login.

You might want to use a DLU for certain reasons, even when the device is in a domain:

 * When only devices are in domain and not the users, users need a DLU to ease access to their computers or if the domain trust is broken
 * When the users are in the middle of a migration and do not want to flip a switch
 * When users require access to local personal computers while accessing certain devices versus their normal domain rights

To manage Windows user accounts in an eDirectory environment:

 * Use an NT or AD domain and then use Account Management or Identity Manager to synchronize AD and eDirectory accounts and passwords
 * Use a DLU policy to automatically create and manage the Windows account upon eDirectory login

Using a DLU in a domain environment might cause problems in some of the following circumstances:

 * When the user assigned to a DLU policy attempts to log in to eDirectory, the Windows authentication is done with a local user and not a domain user. This is because the Windows authentication settings to log in to the domain are ignored, when the DLU policy is in effect.

- When the user is authenticated to Windows with a local account, domain access appears to be working if the local Windows account and the domain Windows account have the same username and password. The DLU user, although it is based on eDirectory credentials has the same username and password as the user in the Active Directory domain. However, account access depends on where the authentication request originates:

  - When you use a local Windows account to access a resource from a domain controller, the authentication attempts work and access is granted because the domain user account exists in the local Security Accounts Manager (SAM) of the domain controller.

  - When you use a local Windows account to access a resource from a member server using a local Windows account, the authentication attempt fails and access is not granted because it is a member server and the domain user account does not exist in its local SAM. The member server cannot access a domain controller to obtain authentication.

26.7 Troubleshooting User Authentication

This section contains explanation on some of the user authentication related problems. To troubleshoot other problems you might encounter during authentication, see TID 3273870 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

- "Incorrect username displayed in the ZENworks Login screen" on page 227
- "Unable to log in to the ZENworks Server" on page 228
- "Large number of concurrent client logins might result in login failures" on page 228
- "How do I enable debug logs on Windows 2003, Windows XP, and Windows Vista devices?" on page 229
- "How do I enable the CASA debug logs?" on page 229
- "Logging in to the user source on a ZENworks Server is slow" on page 229
- "Unable to log into the ZENworks Server when logging in to a Windows Vista device" on page 229
- "The settings assigned to an eDirectory user are not applied on the device where the user has logged in" on page 230
- "The ZENworks login screen is not displayed on a device if Novell Client has been uninstalled from the device" on page 230
- "Using a Smart Card to authenticate in to a device prompts the user to specify the eDirectory password" on page 230
- "Logging in to the user source on a ZENworks Server from a managed device might be slow if Trend Micro AntiVirus Plus AntiSpyware is installed on the device" on page 230
- "Unable to seamlessly log in to Novell SecureLogin on a device that has Novell ZENworks installed" on page 231

Incorrect username displayed in the ZENworks Login screen

Explanation: The *Username* option in the ZENworks Login screen displays the Windows local username by default.

Possible Cause: If you changed only the full name of the user (*My Computer > Manage > System Tools > Local Users and Groups > Full Name*), the ZENworks login screen displays the old username and not the new full name.

Action: To change the local user account details, you must change both the username and the full name of the user:

1 Click the desktop *Start* menu > *Run*.

2 In the Run window, specify *control userpasswords2*, then click *OK*.

3 Double-click the username and edit both the *User Name* and *Full Name* of the user.

4 Click *OK*.

Unable to log in to the ZENworks Server

Possible Cause: A user with an account in the eDirectory that is installed on an OES 2.0 server tries to log into a non-OES 2.0 ZENworks Server.

Action: To log in to a non-OES 2.0 ZENworks Server, the user must be a Linux User Management (LUM) user. For more information on LUM users, see the *Novell Linux User Management Technology Guide (http://www.novell.com/documentation/oes2/acc_linux_svcs_lx/index.html?page=/documentation/oes2/acc_linux_svcs_lx/data/fbdecbed.html)*

Large number of concurrent client logins might result in login failures

Explanation: The maximum number of concurrent client connections that a server can support depends on the configured `Connector acceptCount`. If the number of concurrent client requests exceeds the value of `Connector acceptCount`, the client connect requests might fail because the server is not able to accept these connections.

Action: Increase the number of client connect requests that the server can support.

On a Windows server:

1 Log in as an administrator.

2 Open the `ZENworks_Install_path\share\ats\catalinabase\conf\server.xml` file.

3 In the `Define a SSL Coyote HTTP/1.1 Connector on port 2645` section, change the value of the `Connector acceptCount` to the desired value. A value of 300 is optimal.

4 Restart the Authentication Token Service:

   4a On the desktop, click *Start* > *Run*.

   4b In the Run window, specify *service.msc*, then click *OK*.

   4c Restart *CasaAuthTokenSvc*.

On a Linux server:

1 Log in as `root`.

2 Open the `/srv/www/casaats/conf/server.xml` file.

3 In the `Define a SSL Coyote HTTP/1.1 Connector on port 2645` section, change the value of the `Connector acceptCount` to the desired value. A value of 300 is optimal.

4 Restart the Authentication Token Service:

    4a At the server prompt, go to `/etc/init.d/`.

    4b Run the `casa_atsd restart` command.

How do I enable debug logs on Windows 2003, Windows XP, and Windows Vista devices?

Action: To enable the logs, see TID 3418069 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

How do I enable the CASA debug logs?

Action: To enable the logs, see TID 3418069 in the Novell Support Knowledgebase (http://support.novell.com/search/kb_index.jsp).

Logging in to the user source on a ZENworks Server is slow

Explanation: Logging in to the user source on a ZENworks Server from the managed device might take some time because the login process executes the device refresh synchronously.

Action: To speed up the login process, perform the following steps to change the login process to execute the device refresh asynchronously:

1 Open the Registry Editor.

2 Go to `HKEY_LOCAL_MACHINE\Software\Novell\ZCM`.

3 Create a String called ZENLoginUserRefreshAsync and set the value to TRUE.

4 Log in to the device again.

IMPORTANT: If you change the login process to execute the device refresh asynchronously, the latest policies might not be immediately available. With this change, you make the login performance more important than the accuracy of the policies.

Unable to log into the ZENworks Server when logging in to a Windows Vista device

Explanation: If you log into a Windows Vista device that has Novell SecureLogin installed and Active Directory configured as the user source, you are not automatically logged in to the ZENworks server.

Action: Do the following:

1 Open the Registry Editor.

2 Go to `HKLM\Software\Protocom\SecureLogin\`.

3 Create a DWORD called ForceHKLMandNoDPAPI, and set the value to 1.

4 Restart the device.

The settings assigned to an eDirectory user are not applied on the device where the user has logged in

Possible Cause: Two or more eDirectory users with the same username and password might exist in different contexts of the eDirectory tree.

Explanation: When an eDirectory user specifies the username and password to log in to a device, a user with the same username and password but located in a different context of the eDirectory tree might be logged in to the device and the settings of this user are applied on the device. This is because the login GINA is contextless.

For example: Assume that user1 and user2 have the same username and password:

User1: CN = bob, OU = org1, O = Company1 (bob.org1.company1)

User2: CN = bob, OU = org2, O = Company1 (bob.org2.company1)

When user2 specifies the username and password to log in to a device, user1 is logged in to the device instead of user2 because user1 appears first in the search performed by Novell CASA. The settings assigned to user1 are applied on the device.

Action: No two eDirectory users should have the same username and password. Even if the usernames are same, ensure that the passwords are different.

The ZENworks login screen is not displayed on a device if Novell Client has been uninstalled from the device

Explanation: If you uninstall the Novell Client 2 for Windows Vista/2008 (IR1a) from a device, the ZENworks login screen is not displayed on the device when you log in to the device.

Action: To log in to ZENworks Configuration Management, right-click the ZENworks icon on the device, then click *Login*.

Using a Smart Card to authenticate in to a device prompts the user to specify the eDirectory password

Explanation: If you use a smart card to authenticate in to a device for the first time, you are prompted to specify the eDirectory password after you have specified the smart card pin.

Action: After you add a user source, you must restart the ZENworks services.

Logging in to the user source on a ZENworks Server from a managed device might be slow if Trend Micro AntiVirus Plus AntiSpyware is installed on the device

Explanation: During installation of the ZENworks agent on a device, an executable file named NalView.exe, which is configured to run at user login, is added to the Run registry key. This addition enables the bundle icon to be placed on the Start menu, desktop, notification area, and the Quick Launch area of the Windows taskbar.

NalView.exe runs on the device during user login, resulting in a delay in the overall login time.

Action: To speed up the login process, do one of the following:

- Disable `NalView.exe` at login time:

  > **NOTE:** If you choose to disable `Nalview.exe` at login time, then the bundle icons is not placed on the device Start menu, desktop, notification area, and the Quick Launch area of the Windows taskbar. However, the bundle icon is placed in the application window of the device.

  1. Open the Registry Editor.
  2. Go to `HKLM\SOFTWARE\Netware\Nal\1.0\NalView\`.
  3. Create a DWORD called `Disabled` and set its value to 1.
  4. Log in to the device again.

- Launch `NalView.exe` after a delay of *x* seconds from the login time:

  1. Open the Registry Editor.
  2. Go to `HKLM\SOFTWARE\Netware\Nal\1.0\NalView\`.
  3. Create a DWORD called `Delay` and set its value to the time (in seconds) by which you want to delay the launch of `NalView.exe`.
  4. Log in to the device again.

Unable to seamlessly log in to Novell SecureLogin on a device that has Novell ZENworks installed

Explanation: Novell SecureLogin starts seamlessly after a device desktop opens only if you have used the LDAP Credential Manager mode during the installation of Novell SecureLogin on the device. For more information about the LDAP Server options available during the installation of Novell Secure Login, see the *Novell SecureLogin Installation Guide* at the Novell Documentation site (http://www.novell.com/documentation/securelogin70/installation_guide/data/).

On a device that has ZENworks installed, if Novell SecureLogin does not start seamlessly after the device desktop opens, the authentication registry keys might not be properly set on the device.

Action: Do the following to set the authentication registry keys on the device:

1. Open the Registry Editor.
2. Go to `HKLM\SOFTWARE\Novell\NWGINA\`.
3. Create a DWORD called `PassiveMode` and set its value to 1.
4. Ensure that `HKLM\Software\Novell\Login\LDAP\GinaLoginDone` is set to 0.
5. Log in to the device again.

ZENworks 10 Product Licensing

VI

This section contains information about evaluating, activating, and deactivating ZENworks products.

- Chapter 27, "ZENworks 10 Product Licensing," on page 235

ZENworks 10 Product Licensing

<div style="text-align: right">27</div>

The ZENworks 10 family of products include the following:

- ◆ ZENworks 10 Configuration Management
- ◆ ZENworks 10 Asset Management
- ◆ ZENworks 10 Patch Management
- ◆ Asset Inventory for UNIX/Linux
- ◆ ZENworks 10 Asset Inventory for Windows/Mac

All of the products are installed by default. This enables you to activate products by providing a license key or evaluate products for which you have not purchased a license. You can also deactivate licensed or evaluation products if you no longer intend to use them.

The following sections provide information on managing the product licenses:

For other actions that you can perform to view license information, see "License Commands" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

27.1 Evaluating a Product

1 Log in to the ZENworks Control Center.

2 Click the *Configuration* tab.

3 In the Product Licensing panel, click the product you want to evaluate.

4 In the Product Activation panel, select the *Evaluate/Activate product* option.
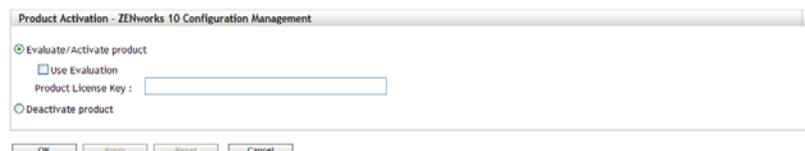
5 Select *Use Evaluation* option, then click *Apply*.

6 Click *OK*.

For more information on license state changes, see Section 27.5, "Possible License State Changes," on page 237.

27.2 Extending the Evaluation Period of a Product

1 Log in to the ZENworks Control Center.

2 Click the *Configuration* tab.

3 In the Product Licensing panel, click the product you want to evaluate.

4 In the Product Activation panel, select the *Evaluate/Activate product* option.
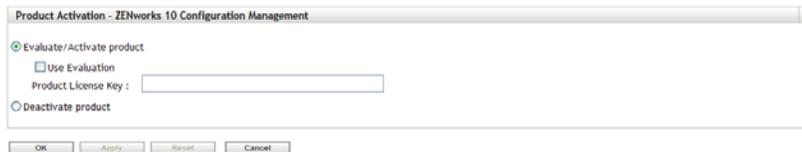
5 Specify the extended evaluation license key in *Product License Key*, then click *Apply*.

6 Click *OK*.

For more information on license state changes, see Section 27.5, "Possible License State Changes," on page 237.

27.3 Activating a Product

1 Log in to the ZENworks Control Center.

2 Click the *Configuration* tab.

3 In the Product Licensing panel, click the product you want to activate.

4 In the Product Activation panel, select the *Evaluate/Activate product* option.

5 Specify the license key in *Product License Key*, click *Apply*.

6 Click *OK*.

For more information on license state changes, see Section 27.5, "Possible License State Changes," on page 237.

27.4 Deactivating a Product

1 Log in to the ZENworks Control Center.

2 Click the *Configuration* tab.

3 In the Product Licensing panel, click the product you want to deactivate.
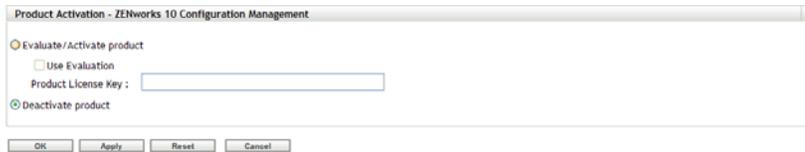
4 In the Product Activation panel, select the *Deactivate product* option.

5 Click *Apply*.

6 Click *OK*.

For more information on possible license state changes, see .

27.5 Possible License State Changes

The transition of a product to a new licence state depends on the current license state of the product and the license state of the product prior to the current license state. Accordingly, you can choose to evaluate, activate, or deactivate a product.

For example:

- A product that is currently deactivated can be moved to an evaluation, extended evaluation, or active state.
- A product that has been transitioned from an evaluation state to deactivated state can be now moved to an active, evaluation, or extended evaluation state.

NOTE: If you change the license state on a ZENworks Server, it might take up to 30 minutes for the license state change to be reflected on the managed device. To enable the license state change to be immediately reflected on the managed device, restart the zenserver services on the ZENworks Server.

Table 27-1 *Possible License State Changes for ZENworks Products*

Previous License State	Current License State	New License State	Additional Information
	Deactivated	Evaluation	You get 60 days to evaluate the product.
	Deactivated	Extended Evaluation	You get 120 days to evaluate the product.
	Deactivated	Active	
	Evaluation	Extended Evaluation	You get 60 days in addition to the remaining evaluation days.
	Evaluation	Active	
	Evaluation	Deactivated	
	Active	Deactivated	
Evaluation	Deactivated	Active	

Previous License State	Current License State	New License State	Additional Information
Evaluation	Deactivated	Evaluation	You get the remaining evaluation days. For example, if you use the product for 10 days of the evaluation period and deactivate it, then if you choose to evaluate the product again, you get 50 days of evaluation.
Evaluation	Deactivated	Extended Evaluation	You get 60 days in addition to the remaining evaluation days.
Extended Evaluation	Deactivated	Extended Evaluation	You get the remaining evaluation days.
Extended Evaluation	Deactivated	Active	
Active	Deactivated	Active	

27.6 Using ZENworks 10 Asset Management with ZENworks 7 Desktop Management

You can use ZENworks 10 Asset Management with ZENworks 7 Desktop Management installed in your environment.

If you enable ZENworks 10 Configuration Management or ZENworks Patch Management Agent features (in ZENworks Control Center, *Configuration* tab > *Device Management* > *ZENworks Agent*), you are prompted that the ZENworks 7 Desktop Management Agent will be uninstalled.

The ZENworks 10 Configuration Management Agent features include the following:

- Bundle Management
- Policy Management
- Image Management
- Patch Management
- Remote Management
- User Management

Do not enable these features if you want to continue using ZENworks 7 Desktop Management in your environment.

27.7 Viewing the Predefined Reports

You must have installed ZENworks Reporting Server to view the predefined reports. For more information on how to install ZENworks Reporting Server, see the *ZENworks 10 Asset Management Reporting Server Installation Guide*.

To view the predefined reports for Licensing:

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

2 In the ZENworks Reporting Server Reporting panel, click *ZENworks Reporting Server InfoView* to launch the ZENworks Reporting Server InfoView.

3 Navigate to *Novell ZENworks Reports > Predefined Reports > ZENworks System*.

4 The following predefined report is included for Licensing:

ZENworks License Information: Displays the licensing details for the Asset Inventory for UNIX/Linux, ZENworks Configuration Management, and ZENworks Asset Management products installed on all the devices in your Management Zone. You can view information such as the license status for the products, the expiration date of the licenses, number of managed devices and inventory devices that are connected to the server holding the license, and the number of managed users.

For more information on creating and managing reports, see the *ZENworks 10 Asset Management System Reporting Reference* documentation.

Database Management

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

VII

</div>

Novell ZENworks 10 Asset Management allows you to back up and restore the embedded Sybase SQL Anywhere database by using the zman command line utility. To back up and restore Oracle or Microsoft SQL Server databases, refer to their documentation.

IMPORTANT: If you plan to back up the ZENworks Server that hosts the ZENworks database, you must ensure that the ZENworks database is backed up at least once before backing up the ZENworks Server (which only needs to be done one time). You can also back up the ZENworks database on a regular basis. However, you can back up the server and the database in any order.

When restoring the ZENworks Server and the database, you must first restore the ZENworks Server, then restore the latest backed-up ZENworks database. For more information about backing up and restoring the ZENworks Server, see Chapter 9, "Backing Up and Restoring the ZENworks Server and Certificate Authority," on page 105.

ZENworks 10 Asset Management also allows you to migrate the data from the Sybase SQL Anywhere database to an Oracle database.

Review the following sections for detailed information:

Embedded Database Maintenance

28

- Section 28.1, "Retrieving and Storing the Credentials of the Embedded Sybase SQL Anywhere Database," on page 243
- Section 28.2, "Changing the Ports Used by the Embedded Sybase SQL Anywhere Database," on page 243
- Section 28.3, "Backing Up the Embedded Sybase SQL Anywhere Database," on page 245
- Section 28.4, "Restoring the Embedded Sybase SQL Anywhere Database," on page 252
- Section 28.5, "Moving the Internal Sybase Database from One Primary Server to Another Primary Server," on page 255
- Section 28.6, "Moving the Data from an Embedded Sybase Database to an External Sybase Database," on page 259
- Section 28.7, "Migrating the Data from an Embedded Sybase SQL Anywhere to an External Oracle Database," on page 263

28.1 Retrieving and Storing the Credentials of the Embedded Sybase SQL Anywhere Database

If you have installed ZENworks 10 Asset Management with the embedded Sybase SQL Anywhere database that is bundled with ZENworks, we recommend that you store the credentials of the database for future use.

1 Retrieve the credentials of the embedded Sybase SQL Anywhere database by entering one of the following commands at the server prompt:

```
zman database-get-credentials
```

or

```
zman dgc
```

The credentials are displayed on the console.

For more information about zman, view the zman man page (`man zman`) on the server or see "zman(1)" in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

2 Copy the credentials and save them in a file.

To retrieve and store the credentials of Remote Sybase SQL Anywhere, Oracle, or Microsoft SQL Server databases, refer to their documentation.

28.2 Changing the Ports Used by the Embedded Sybase SQL Anywhere Database

Sybase SQL Anywhere uses port 2638 by default. You can change the port on which the database runs.

1 In the `zenworks_database.conf` file, specify the new port number on which the server listens to.

The `zenworks_database.conf` file is located in `%ZENWORKS_HOME%\conf` on Windows and in `/etc/opt/novell/zenworks` on Linux.

2 In the `zdm.xml` file on all the Primary Servers, specify the new port number in the following entry:

```
<entry key="Port">2638</entry>
```

By default, the entry lists the default port number, 2638.

The `zdm.xml` file is located in `%ZENWORKS_HOME%\conf\datamodel` on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux.

3 (Conditional) If the ZENworks Reporting Server is installed on the Primary Server, add the new port number to the ODBC data information:

- **On a Windows server:** Do the following:

  1. From the desktop *Start* menu, click *Settings, click Control Panel*, then double-click *ODBC Data Source*.

     The ODBC Data Source Administrator window is displayed.

  2. Click the *System DSN* tab.

  3. Double-click *ZENworks Datastore*.

     The ODBC Configuration window is displayed.

  4. Click the *Networks* tab.

  5. In the *Select the Network Protocols and Options* panel, change the value of the TCP/IP port number (by default, it is 2638) to the port number specified in `zenworks_database.conf` (the new number you specified in Step 1).

- **On a Linux server:** In the `/opt/novell/zenworks/share/boe/bobje/odbc.ini` file, change the value of TCP/IP to the port number specified in `zenworks_database.conf` (the new number you specified in Step 1).

4 Restart the database service, ZENServer, and ZENLoader services on all Primary servers:

- **On Windows:** Do the following:

  1. From the Windows desktop Start menu, click *Settings > Control Panel*.

  2. Double-click *Administrative Tools > Services*.

  3. Restart the following services: *Novell ZENworks Embedded Datastore*, *Novell ZENworks Loader Service*, and *Novell ZENworks Server*.

- **On Linux:** At the console prompt, enter the following commands in the order given:

  - `/etc/init.d/novell-zenmntr stop`

  - `/etc/init.d/novell-zenserver stop`

  - `/etc/init.d/novell-zenloader stop`

  - `/etc/init.d/sybase-asa restart`

  - `/etc/init.d/novell-zenserver start`

  - `/etc/init.d/novell-zenloader start`

  - `/etc/init.d/novell-zenmntr start`

Even though the TCP and UDP ports are changed from 2638, the database server also listens on UDP port 2638. For more information, see the Sybase database documentation (http://www.ianywhere.com/developer/product_manuals/sqlanywhere/1001/en/html/dbdaen10/da-serverport-network-conparm.html).

28.3 Backing Up the Embedded Sybase SQL Anywhere Database

The embedded Sybase SQL Anywhere database can be backed up to a directory on the local machine or to a network location.

28.3.1 Backing Up the Embedded Sybase SQL Anywhere Database on a Windows or Linux Server

1 Store the ZENworks administrator name and password by entering the following command at the command prompt:

```
zman admin-store-credential administrator
```

If you do not store the credentials, you must enter the ZENworks administrator name and password for each zman command.

2 You can immediately back up the embedded Sybase SQL Anywhere database or schedule the backup to run at a specific time. To back up the embedded Sybase SQL Anywhere database immediately, continue with this step. To schedule the backup to run at a specific time, skip to Step 3.

To immediately back up the embedded Sybase SQL Anywhere database to a directory on the database server by using the zman command line utility, enter the following command at the database server console prompt:

```
zman database-backup
complete_path_of_the_backup_directory_on_database_server
```

For example, to back up the database to the `c:\dbbackup` directory on a Windows database server, execute `zman database-backup c:\dbbackup`. To back up the database to the `/root/dbBackup` directory on a Linux database server, execute `zman database-backup /root/dbBackup`.

To manually back up the embedded Sybase SQL Anywhere database to a directory on the database server:

  2a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

      ◆ **On Windows:** Do the following

          1. Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

2. Specify the number next to the `Stop` action, then press Enter.

♦ **On Linux:** Do the following:

1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

2. Specify the number next to the `Stop` action, then press Enter.

2b Manually copy `zenworks_zone_name.db` and `zenworks_zone_name.log` from the database server to the new location where you want to back up the database.

By default, the files are located in `ZENworks_Installation_directory`\Novell\Zenworks\Database on a Windows Sybase database server, and in `/var/opt/novell/zenworks/database/` on a Linux Sybase database server.

2c Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

♦ **On Windows:** Do the following

1. Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

2. Specify the number next to the `Start` action, then press Enter.

♦ **On Linux:** Do the following:

1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

2. Specify the number next to the `Start` action, then press Enter.

3 (Conditional) To schedule the backup to run at a specific time every day or on specific days of a month, you need to create a schedule file and run it.

3a Create a schedule file with the Create event, `backupschedule.sql`, with the following contents:

```
CREATE EVENT backup_schedule_name
SCHEDULE
specify_the_schedule
```

A sample schedule file to back up the database at a 11 p.m. every day is as follows:

```
CREATE EVENT ZENDBBackup
SCHEDULE
START TIME '11:00 PM' EVERY 24 HOURS
```

A sample schedule file to back up the database at 1:00 a.m. on the first, second, third, and fourth day of the month is as follows:

```
CREATE EVENT ZENDBBackup1
SCHEDULE
START TIME '1:00 AM'
ON (1,2,3,4)
```

Sample schedule files are available in the
`ZENworks_Installation_directory:\Novell\Zenworks\share\zman\samples\d`
`atabase` directory on a Windows server, and in the `/opt/novell/zenworks/share/`
`zman/samples/database` directory on a Linux server.

3b Enter the following command at the command prompt:

`zman database-backup` *`complete_path_of_the_backup_directory`*
`complete_path_of_backUpSchedule.sql` `-d` *`SQL_function_call`*

For example, to back up the database to the `c:\dbbackup\`*`day_of_the_week`* directory
on a Windows server as per the schedule in the `c:\backupschedule.sql` file, enter the
following command:

`zman database-backup c:\dbbackup c:\backUpSchedule.sql -d`
`"DAYNAME(now())"`

For more information about this command, view the zman man page (man zman) on the
device, or see zman(1) in the *ZENworks 10 Asset Management Command Line Utilities
Reference*.

4 Clear the credentials stored in Step 1 by entering the following command at the command
prompt:

`zman admin-clear-credential`

According to the backup schedule, the `zenworks_`*`zone_name`*`.db` database file and the
`zenworks_`*`zone_name`*`.log` transaction log file are created in the database backup directory.

If you want to change the database backup location or the backup schedule at a later time, review the
following sections:

- "Changing the Backup Location of the Embedded Sybase SQL Anywhere Database
  Subsequent to the Initial Backup" on page 303
- "Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database
  Subsequent to the Initial Backup" on page 304

28.3.2 Backing Up the Embedded Sybase SQL Anywhere Database Running on a Windows Server to a Network Location on a Remote Windows Machine

To back up an embedded Sybase SQL Anywhere database that is installed and running on a
Windows server to a network location on another Windows machine, you need a local machine and
a remote machine. The local machine is a Windows server with the ZENworks server components
and the embedded Sybase SQL Anywhere database installed. The remote machine is a Windows
machine that has the network location to which you want to back up the database.

1 Perform the following steps on the local machine:

1a Create an administrative user and specify a password.

For example, you could specify the administrative username as `Administrator` and the
password as `novell`.

1b From the desktop *Start* menu, click *Settings*, click *Control Panel*, double-click
Administrative Tools, then double-click *Services*.

1c Right-click the *Novell ZENworks Datastore* service, then click *Properties*.

1d Click the *Log On* tab.

1e Select *This account*, then specify the name and the password of the administrative user created in Step 1a.

For example, specify the user as `Administrator` and the password as `novell`.

1f Click *OK*.

2 Perform the following steps on the remote machine that has the network location where you want to save the backup:

2a Create an account with the same credentials as the user you created in Step 1a.

For example, specify user as `Administrator` and password as `novell`.

2b Provide Read/Write permission on the network location to the user.

3 You can immediately back up the database or schedule the backup to run at a specific time. To immediately back up the database, continue with this step. To schedule the backup to run at a specific time every day or on specific days of a month, skip to Step 4.

To immediately back up the database to the network location on the remote machine by using the zman command line utility, enter the following command at the database server console prompt:

```
zman database-backup
\\IP_address_of_the_remote_machine\backup_directory\custom_directory
```

Where `\\IP_address_of_the_remote_machine\backup_directory` is the network location on the remote machine and `custom_directory_name` is a name that you specify for a directory to be newly created by zman and into which the database files are to be backed up.

To manually back up the database to the network location on the remote machine:

3a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

3a1 Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

3a2 Specify the number next to the `Stop` action, then press Enter.

3b Manually copy `zenworks_zone_name.db` and `zenworks_zone_name.log` from the database server to a desired location on the remote machine.

By default, the files are located in `ZENworks_Installation_directory\Novell\Zenworks\Database` on a Windows Sybase database server.

3c Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

3c1 Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

3c2 Specify the number next to the `Start` action, then press Enter.

4 (Conditional) To schedule the backup:

4a Create a schedule file, `backupschedule.sql`, with the following contents:

```
CREATE EVENT backup_schedule_name
SCHEDULE
specify_the_schedule
```

A sample schedule file to back up the database at a 11 p.m. every day is as follows:

```
CREATE EVENT ZENDBBackup
SCHEDULE
START TIME '11:00 PM' EVERY 24 HOURS
```

A sample schedule file to back up the database at 1:00 a.m on the first, second, third, and fourth day of the month is as follows:

```
CREATE EVENT ZENDBBackup1
SCHEDULE
START TIME '1:00 AM'
ON (1,2,3,4)
```

Sample schedule files are available in the *ZENworks_Installation_directory*\Novell\Zenworks\ share\zman\samples\database directory.

4b Execute the following command at the command prompt:

```
zman database-backup
\\IP_address_of_the_remote_machine\backup_directory\custom_directory
c:\backUpSchedule.sql -d SQL_function_call
```

Where *IP_address_of_the_remote_machine**backup_directory* is the network location on the remote machine and *custom_directory_name* is a name that you specify for a directory to be newly created by zman and into which the database files are to be backed up.

For more information about the command, view the zman man page (man zman) on the device, or see zman(1) in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

According to the backup schedule, zenworks_*zone_name*.db and zenworks_*zone_name*.log are created in the network location on the remote machine. The backed-up database is stored in zenworks_*zone_name*.db. The result of the database backup is logged in zenworks_*zone_name*.log.

If you want to change the database backup location or the backup schedule at a later time, review the following sections:

- "Changing the Backup Location of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup" on page 303
- "Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup" on page 304

28.3.3 Backing Up the Embedded Sybase SQL Anywhere Database Running on a Linux Server to a Network Location on a Remote Linux Machine

To back up the embedded Sybase SQL Anywhere database that is installed and running on a Linux server to a network location on a Linux machine, you need a local machine and a remote machine. The local machine is a Linux server with the ZENworks server components and the embedded Sybase SQL Anywhere database installed. The remote machine is a Linux machine that has the network location to which you want to back up the database.

You can back up the database on a Linux machine by using any Linux share such as Samba share or NFS share.

To back up the embedded Sybase SQL Anywhere database that is installed and running on a Linux server to a network location on a Linux machine by using Samba share:

1 Create a Samba share on the remote machine:

    1a Create a user by entering the `useradd` `user_name` command at the command prompt.

    1b Log in to the remote machine with the username created in Step 1a, and set the password by using the `passwd` `specify_the_password` command.

    1c Create a directory to save the database backup.

        For example, create a directory with the name `backup`.

    1d Open the Samba server settings by running the `yast2 samba-server` command.

    1e Click the *Shares* tab, then click *Add* to specify the share name and the path to the backup directory created in Step 1c.

        For example, specify the sharename as `dbbackup`.

    1f Select the `dbbackup` share, click *Edit*, then add the following attributes:

            ◆ create mask = 0640

            ◆ force user = *user_name_created_in_*Step 1a

            ◆ guest ok = yes

            ◆ public = yes

            ◆ wide links = no

            ◆ writeable = yes

2 Create a directory on the local machine.

    For example, create a directory with the name `zenworks_dbbackup` in `/root`.

3 Mount the Samba share on the `zenworks_dbbackup` directory on the local machine by entering the following command at the command prompt:

```
mount -t smbfs //IP_address of the remote_machine/share_name -o
username=user_name_specified_in_Step1a,password=password_
specified_in_Step_1b
local_directory_name_with_complete_path_created_in_Step2
```

For example:

```
mount -t smbfs //IP_address of the remote_machine/dbbackup -o
username=user_name_specified_in_Step1a,password=password_
specified_in_Step_1b /root/zenworks_dbbackup
```

4 You can immediately back up the embedded Sybase SQL Anywhere database or schedule the backup to run at a specific time. To immediately back up the database, continue with this step. To schedule the backup to run at a specific time every day or on specific days of a month, skip to Step 5.

To immediately back up the database to the network location on the remote machine by using the zman command line utility, enter the following command at the database server console prompt:

```
zman database-backup database_backup_directory
```

For example:

```
zman database-backup /root/zenworks_dbbackup
```

To manually back up the database to the network location on the remote machine:

4a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

4a1 Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

4a2 Specify the number next to the Stop action, then press Enter.

4b Manually copy zenworks_zone_name.db and zenworks_zone_name.log from the database server to a desired location on the remote machine.

By default, the files are located in /var/opt/novell/zenworks/database/ on a Linux Sybase database server.

4c Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

4c1 Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

4c2 Specify the number next to the Start action, then press Enter.

5 (Conditional) To schedule the backup:

5a Create a schedule file, backupschedule.sql, with the following contents:

```
CREATE EVENT backup_schedule_name
SCHEDULE
specify_the_schedule
```

A sample schedule file to back up the database at a 11 p.m. every day is as follows:

```
CREATE EVENT ZENDBBackup
SCHEDULE
START TIME '11:00 PM' EVERY 24 HOURS
```

A sample schedule file to back up the database at 1:00 a.m. on the first, second, third, and fourth days of the month is as follows:

```
CREATE EVENT ZENDBBackup1
SCHEDULE
START TIME '1:00 AM'
ON (1,2,3,4)
```

Sample schedule files are available in the `ZENworks_Installation_directory:\Novell\Zenworks\` `share\zman\samples\database` directory.

5b Enter the following command at the command prompt:

```
zman database-backup database_backup_directory c:\backUpSchedule.sql -
d SQL_function_call
```

For example:

```
zman database-backup /root/zenworks_dbbackup c:\backUpSchedule.sql -d
SQL_function_call
```

For more information about this command, view the zman man page (man zman) on the device, or see zman(1) in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

According to the backup schedule, `zenworks_zone_name.db` and `zenworks_zone_name.log` are created in the network location on the remote machine (`/root/zenworks_dbbackup`). The backed-up database is stored in `zenworks_zone_name.db`. The result of the database backup is logged in `zenworks_zone_name.log`.

If you want to change the database backup location or the backup schedule at a later time, review the following sections:

- "Changing the Backup Location of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup" on page 303
- "Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup" on page 304

28.4 Restoring the Embedded Sybase SQL Anywhere Database

The following sections provide information on restoring the backed-up embedded Sybase SQL Anywhere database:

- Section 28.4.1, "Restoring the Embedded Sybase SQL Anywhere Database on a Windows Server," on page 253
- Section 28.4.2, "Restoring the Embedded Sybase SQL Anywhere Database on a Linux Server," on page 254

IMPORTANT: If the database is located on a ZENworks Server, you must first restore the ZENworks Server, then restore the ZENworks database. Ensure that you have backed up the ZENworks Server and the database (at least once). You can also back up the ZENworks database on a regular basis. However, you can back up the server and the database in any order. For more information about backing up and restoring the ZENworks Server, see Chapter 9, "Backing Up and Restoring the ZENworks Server and Certificate Authority," on page 105.

28.4.1 Restoring the Embedded Sybase SQL Anywhere Database on a Windows Server

1 Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

- **On Windows:** Do the following:

   1. Execute the following command at the server prompt:

      `novell-zenworks-configure -c Start`

   2. Specify the number next to the `Stop` action, then press Enter.

- **On Linux:** Do the following:

   1. Execute the following command at the server prompt:

      `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

   2. Specify the number next to the `Stop` action, then press Enter.

2 At the Windows server prompt, go to *ZENworks_Installation_directory:*\novell\zenworks\bin, and enter the following command:

`ZenworksWindowsDBRestore.bat`
ZENworks_Installation_directory:\Novell\Zenworks\Database
`c:\dbBackup\zenworks_zone_name.db c:\dbBackup\zenworks_zone_name.log`

3 Press any key when the following message is displayed:

`Before proceeding, make sure you have backed up any files in:<Installation directory>:\Novell\ZENworks\database Press any key to continue.`

4 Enter `Y` when the following message is displayed:

`The following services are dependent on the Novell ZENworks Datastore service. Stopping the Novell ZENworks Datastore service will also stop these services: Novell ZENworks Loader, Novell ZENworks Agent Service, Novell ZENworks Server. Do you want to continue this operation? (Y/N) [N]:`

5 Press any key when the following message is displayed:

`The Novell ZENworks Datastore service was stopped successfully. Press any key to continue...`

6 Enter `Yes` when the following message is displayed:

`Overwrite <installation directory>:\Novell\ZENworks\database\zenworks_<zone_name>.db? (Yes/No/ All)`

7 Enter `Yes` when the following message is displayed:

`Overwrite <installation directory>:\Novell\ZENworks\database\zenworks_<zone_name>.log? (Yes/No/ All):`

The `backupFile` and the `backupLogFile` are copied to *ZENworks_Installation_directory*:\Novell\ZENworks\database, and the database is restored.

8 (Conditional) If you restore the database to a location other than the one mentioned in the *zenworks_installation_directory*\novell\zenworks\database\conf\zenworks_database.conf file, manually edit `zenworks_database.conf` to specify the new location of the database.

9 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         `novell-zenworks-configure -c Start`

      2. Specify the number next to the `Start` action, then press Enter.

   ◆ **On Linux:** Do the following:

      1. Execute the following command at the server prompt:

         `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

      2. Specify the number next to the `Start` action, then press Enter.

28.4.2 Restoring the Embedded Sybase SQL Anywhere Database on a Linux Server

1 Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         `novell-zenworks-configure -c Start`

      2. Specify the number next to the `Stop` action, then press Enter.

   ◆ **On Linux:** Do the following:

      1. Execute the following command at the server prompt:

         `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

      2. Specify the number next to the `Stop` action, then press Enter.

2 Log in to the ZENworks server as `root`.

3 Change to `/opt/novell/zenworks/bin`, and enter the following command:

   `./ZenworksLinuxDBRestore.sh -F "/root/dbBackup/zenworks_zone_name.db"`

4 Enter `Y` when the following message is displayed:

   `The backup database file will OVERWRITE the existing database. Is that OK? [y/n]`

5 Enter `Y` when the following message is displayed:

   `The novell-zenloader needs to be stopped for the database restore to be performed. Would you like to proceed [y/n]?`

   The backup file is copied to `/var/opt/novell/zenworks/database`, and the restore log file to `/var/opt/novell/log/zenworks/dbrestore.log`. The database is restored.

6 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         `novell-zenworks-configure -c Start`

      2. Specify the number next to the `Start` action, then press Enter.

   ◆ **On Linux:** Do the following:

      1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

2. Specify the number next to the `Start` action, then press Enter.

28.5 Moving the Internal Sybase Database from One Primary Server to Another Primary Server

Assume that the Primary Server that currently hosts the internal Sybase database is called PSDB1. Assume that the Primary Server or the new device to which you want to move the internal Sybase database is called PSDB2.

1 Make sure that you have archived your database credentials.

To archive the credentials of an internal Sybase database, perform the following tasks on PSDB1:

1a Make sure that the database service is running.

On Windows: In the Windows Services, make sure that the status of *Novell ZENworks Embedded Datastore* is *Started*.

On Linux: At the console prompt, enter `/etc/init.d/sybase-asa status` to verify the status of the database. If the database is not running, start the database service by running the `/etc/init.d/./sybase-asa start` command.

1b Obtain the Sybase database credentials by running the `zman dgc` command.

1c Provide the credentials of the ZENworks administrator when prompted.

1d Copy and save the database username and password in to a text file.

2 Stop all the Novell ZENworks services, including the ZENworks Embedded Datastore service on PSDB1:

♦ **On Windows:** Perform the following steps

1. Execute the following command at the server prompt:

   ```
   novell-zenworks-configure -c Start
   ```

2. Specify the number next to the `Stop` action, then press Enter.

♦ **On Linux:** Perform the following steps:

1. Execute the following command at the server prompt:

   ```
   /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
   ```

2. Specify the number next to the `Stop` action, then press Enter.

3 Stop all the Novell ZENworks services on PSDB2:

♦ **On Windows:** Perform the following steps:

1. Execute the following command at the server prompt:

   ```
   novell-zenworks-configure -c Start
   ```

2. Specify the number next to the `Stop` action, then press Enter.

♦ **On Linux:** Perform the following steps:

1. Execute the following command at the server prompt:

   ```
   /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
   ```

2. Specify the number next to the `Stop` action, then press Enter.

4 Procure `sybase-asa-10.0.1.3960.msi/rpm` and `novell-zenworks-sybase-libs-10.0.1.3960.msi/rpm` on PSDB2:

    4a Create a temporary directory named `sybase` in `c:` if PSDB2 is a Windows device, and in `/tmp/` if PSDB2 is a Linux device.

    4b Perform one of the following steps:

       ◆ Copy `sybase-asa-10.0.1.3960.msi/rpm` and `novell-zenworks-sybase-libs-10.0.1.3960.msi/rpm` from PSDB1 to the temporary location that you created on PSDB2 (in Step 4a). If PSDB1 is a Windows server, the MSIs are located in the `ZENworks_installation_directory\novell\zenworks\install\downloads\msi` directory and the RPMS are located in the `ZENworks_installation_directory\novell\zenworks\install\downloads\rpm` directory. If PSDB1 is a Linux server, the MSIs are located in the `\opt\novell\zenworks\install\downloads\msi\` directory and the RPMS are located in the `\opt\novell\zenworks\install\downloads\rpms` directory.

       ◆ Download the Sybase SQL Anywhere Embedded EBF 3960 package from the Novell Downloads Web site (http://download.novell.com/Download?buildid=JhOYPc1Q5Tc~) to the temporary location that you created on PSDB2 (in Step 4a).

5 Install `sybase-asa-10.0.1.3960.msi/rpm` on PSDB2:

    ◆ **On a Windows server:** At the server prompt, execute the following command:

```
msiexec /i
<complete_path_of_directory_that_contains_Sybase_ASA_MSI>\sybase-asa-
10.0.1.3960.msi TARGETDIR="%ZENWORKS_HOME%\share" ALLUSERS=2
```

    For example:

```
msiexec /i c:\sybase\sybase-asa-10.0.1.3960.msi
TARGETDIR="%ZENWORKS_HOME%\share" ALLUSERS=2
```

    ◆ **On a Linux server:** At the server prompt, execute the following command:

```
rpm -Uvh <complete_path_of_directory_that_contains_Sybase_ASA_MSI>/
sybase-asa-10.0.1-3960.noarch.rpm
```

    For example:

```
rpm -Uvh /tmp/sybase/sybase-asa-10.0.1-3960.noarch.rpm
```

    The Sybase database is now installed on PSDB2.

6 On PSDB2, ensure that the installed EBF version is 10.0.1.3960 by running the `dblocate` utility.

The `dblocate` utility is located in the `%ZENWORKS_HOME%\share\ASA\win32` directory on a Windows database server and in the `/opt/novell/zenworks/share/sybase/bin32s` directory on a Linux database server.

7 Install `novell-zenworks-sybase-libs-10.0.1.3960.msi/rpm` on PSDB2:

    ◆ **On a Windows server:** At the server prompt, execute the following command:

```
msiexec /i <complete_path_of_directory_that_contains_Sybase-
libs_MSI>\novell-zenworks-sybase-libs-10.0.1.3960.msi
TARGETDIR="{Parent of the Novell\ZENworks directory structure}"
ALLUSERS=2 REBOOT=ReallySuppress
```

    For example:

```
msiexec /i c:\sybase\novell-zenworks-sybase-libs-10.0.1.3960.msi
TARGETDIR="{Parent of the Novell\ZENworks directory structure}"
ALLUSERS=2 REBOOT=ReallySuppress
```

 ◆ **On a Linux server:** At the server prompt, execute the following command:

```
rpm -Uvh <complete_path_of_directory_that_contains_Sybase-libs_MSI>/
novell-zenworks-sybase-libs-10.0.1-3960.noarch.rpm
```

For example:

```
rpm -Uvh /tmp/sybase/novell-zenworks-sybase-libs-10.0.1-
3960.noarch.rpm
```

8 (Conditional) If PSDB2 is a Windows Primary Server, import the registry keys that add the ZENworks Embedded Datastore service to PSDB2:

8a Download `embedded_datastore-edit_me_first_01MAR2011.zip` from the Novell Downloads Web site (http://download.novell.com/Download?buildid=OBov7jxTrng~) to a temporary location on PSDB2, then extract the contents of the ZIP file.

The ZIP file contains the `embedded_database.reg` file.

8b Open `embedded_database.reg` in a text editor, then make the following changes:

 ◆ Change the value of `ObjectName` to the local `_z_` username that is created after you install ZENworks 10 Configuration Management SP3. By default, the value of `ObjectName` is `.\\__z_10_2__`.

To find the local *_z_* username, do one of the following:

 ◆ At the command prompt, enter `net user|find /i "__z"`.

 ◆ Open the Windows Computer Management, then browse to *System Tools > Local User and Groups > Users*.

For example, if the resultant value is `__z_0_244__ Administrator ASPNET`, the local `_z_` username is `__z_0_224__`. The value of `ObjectName` in `embedded_database.reg` must be changed from `__z_10_2__` to `__z_0_224__`. Ensure that the value is prepended with a period (.) and two backslashes (\\), such as `.\\__z_0_224__`

 ◆ Ensure that the value of `Parameters` contains the correct path of `zenworks_database.conf` on PSDB2.

> **IMPORTANT:** In the value for `Parameters`, the double quote (") and the backslash \ characters must be escaped by placing a backslash in front. For example, if `zenworks_database.conf` is located in `d:\novell\zenworks\conf\`, the value of `Parameters` is
> `"\"@d:\\Novell\\ZENworks\\conf\\zenworks_database.conf\""`

8c Double-click `embedded_database.reg`.

8d When you are prompted to add the content of the `embedded_database.reg` to the registry, click *Yes*.

9 (Conditional) If PSDB2 is a Windows Primary Server, change the password of the local *_z_* user account.

For more information about how to change the password of a user account, see the Microsoft Windows documentation.

10 (Conditional) If PSDB 2 is a Linux Primary Server, change the password of the *zenworks* user account by using the following command:

```
passwd zenworks
```

11 Copy the database files from PSDB1 to PSDB2:

   11a Create a directory with the name `database` in *%ZENWORKS_HOME%* on Windows PSDB2, and in `/var/opt/novell/zenworks/` on Linux PSDB2.

   11b Copy all the files from `%ZENWORKS_HOME%\database\` on Windows PSDB1 to `%ZENWORKS_HOME%\database\` on Windows PSDB2, and from `/var/opt/novell/zenworks/database/` on Linux PSDB1 to `/var/opt/novell/zenworks/database/` on Linux PSDB2.

12 Copy `zenworks_database.conf` from PSDB1 to PSDB2. The `zenworks_database.conf` file is located in the `%ZENWORKS_HOME%\conf\` directory on a Windows Primary Server, and in the `/etc/opt/novell/zenworks/` directory on a Linux Primary Server.

13 On PSDB2, ensure that `zenworks_database.conf` contains the correct database path.

   For example, `/var/opt/novell/zenworks/database/zenworks_zone_name.db` is the database path on a Linux device.

14 On all the other Primary Servers in the Management Zone, update `zdm.xml` with the correct address of PSDB2 (the new database server). The `zdm.xml` file is located in `ZENworks_installation_path\conf\datamodel` on a Windows Primary Server, and in `/etc/opt/novell/zenworks/datamodel` on a Linux Primary Server.

15 Start all the ZENworks Services on PSDB2 and PSDB1:

   ◆ **On Windows:** Perform the following steps:

      1. Execute the following command at the server prompt:

         ```
         novell-zenworks-configure -c Start
         ```

      2. Specify the number next to the `Start` action, then press Enter.

   ◆ **On Linux:** Perform the following steps:

      1. Execute the following command at the server prompt:

         ```
         /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
         ```

      2. Specify the number next to the `Start` action, then press Enter.

16 Assign the database role to PSDB2 by running the following command in the DBISQL utility:

```
update zZenServerRoles set id=<0xNew DB servers GUID>, position=(select
max(position) from zZENServerRoles where id=<0xNew DB servers GUID>)+1
where Roles='Database'
```

28.6 Moving the Data from an Embedded Sybase Database to an External Sybase Database

ZENworks 10 Asset Management allows you move the data from a Sybase SQL Anywhere database (embedded Sybase database) to an OEM Sybase database (external Sybase database).

- Section 28.6.1, "Preparing to Move the Data," on page 259
- Section 28.6.2, "Moving the Data from the Internal Sybase to the External Sybase," on page 259
- Section 28.6.3, "Configuring ZENworks Reporting Server to Point from Internal Sybase to External Sybase," on page 261

28.6.1 Preparing to Move the Data

Before moving the data from an internal Sybase database to an external Sybase database, do the following:

- Make sure that ZENworks 10 Asset Management is installed with an internal Sybase database on a Windows or Linux device.
- Install the external Sybase database. For more information on how to install an external Sybase database, see "Installing an External ZENworks Database" in the *ZENworks 10 Asset Management Installation Guide*.

28.6.2 Moving the Data from the Internal Sybase to the External Sybase

1 On the device that has the external Sybase database installed, stop the Novell ZENworks Embedded Datastore service.

- **On Windows:** Do the following:

    1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

    2. Double-click *Administrative Tools > Services*.

    3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Stop*, or select the *Novell ZENworks Embedded Datastore* service, then click ■ on the toolbar.

- **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa stop`.

2 Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

- **On Windows:** Do the following

    1. Execute the following command at the server prompt:

       `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Stop` action, then press Enter.

- **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

    2. Specify the number next to the `Stop` action, then press Enter.

3 From the device that has the internal Sybase database installed, copy `zenworks_database.conf` and all files within the `database` directory to the appropriate directories on the device that has the external Sybase database.

The `zenworks_database.conf` is located in the *ZENworks_installation_path*\conf\ directory on Windows and in the `/etc/opt/novell/zenworks/` directory on Linux.

The `database` directory is located in *ZENworks_installation_path* on Windows and in the `/var/opt/novell/zenworks/` directory on Linux.

4 On the device that has the external Sybase database installed, open `zenworks_database.conf` and make sure that it contains the correct path of the database file.

5 On the device that has the internal Sybase database installed, edit `zdm.xml` (located in *ZENworks_installation_path*\conf\datamodel on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux):

   ◆ Change the value of the `Embedded` entry key to `false`. By default, it is `true`.

   ◆ Set the value of the `Server` entry key to the IP address of the device that has the external Sybase database installed.

   ◆ Make sure that the value of the `Port` entry key is the port number on which the external Sybase database is running.

6 On the device that has the external Sybase database installed, start the Novell ZENworks Embedded Datastore service.

   ◆ **On Windows:** Do the following:

      1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

      2. Double-click *Administrative Tools > Services*.

      3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Start*, or select the *Novell ZENworks Embedded Datastore* service, then click ▶ on the toolbar.

   ◆ **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa start`.

7 Assign the database role to the device that has the external Sybase database installed by running the following command in the DBISQL utility:

```
delete from zZenServerRoles where Roles = 'Database';commit;
```

8 Remove the Novell ZENworks Embedded Datastore service from the device that has the internal Sybase database installed:

On the Windows device: Perform the following tasks:

   1. At the server prompt, execute the following command:

```
sc delete SQLANYs_ZENDatastore
```

   2. Edit the`%ZENWORKS_HOME%\conf\monitor.conf` to remove `dbsrv10` from the line `highpriority=zenserver,casaserver,dbsrv10`.

On the Linux device: Perform the following tasks:

   1. Stop the Novell ZENworks Embedded Datastore service by executing the following command at the console prompt:

```
/etc/init.d/sybase-asa stop
```

   2. Rename sybase-asa to sybase-asa1 by executing the following command:

```
mv sybase-asa sybase-asa1
```

3. Edit the `/etc/opt/novell/zenworks/conf/monitor.conf` to remove `sybase-asa` from the line `services=novell-zenserver novell-zenload sybase-asa`.

9 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

* **On Windows:** Do the following

   1. Execute the following command at the server prompt:

      ```
      novell-zenworks-configure -c Start
      ```

   2. Specify the number next to the `Start` action, then press Enter.

* **On Linux:** Do the following:

   1. Execute the following command at the server prompt:

      ```
      /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
      ```

   2. Specify the number next to the `Start` action, then press Enter.

10 (Conditional) If you have installed ZENworks Reporting Server, continue with Section 28.6.3, "Configuring ZENworks Reporting Server to Point from Internal Sybase to External Sybase," on page 261.

28.6.3 Configuring ZENworks Reporting Server to Point from Internal Sybase to External Sybase

Do the following to point ZENworks Reporting Server to the new database:

* "Configuring ZENworks Reporting Server to Point to the New External Sybase on Windows" on page 261
* "Configuring ZENworks Reporting Server to Point to the New External Sybase on Linux" on page 263

Configuring ZENworks Reporting Server to Point to the New External Sybase on Windows

1 Ensure that the data has been moved from the Internal Sybase to the External Sybase as explained in Section 28.6.2, "Moving the Data from the Internal Sybase to the External Sybase," on page 259.

2 Procure the following information of the new database to which you want ZENworks Reporting to point:

* UserID
* Password
* Server Name
* Database Name
* IP Address

2a Enter the following URL in a Web browser:

```
https://Reporting_Server_IP_Address/zenworks-coreadmin
```

2b Click *Test Service*.

2c Click the following link:

com.novell.zenworks.datamodel.objects.Any getConfiguration() throws
com.novell.zenworks.datamodel.exceptions.RemoteDataModelException,
java.rmi.RemoteException;

2d Click *Invoke*.

2e Search for the following parameters and archive their values for later use:

- ◆ `username`

- ◆ `Engine`

- ◆ `Server`

- ◆ `Port`

The values are presented within tags. For example, the value for the username parameter
is presented within the `<entry key="username"></entry>` tag. The default username is
`zenadmin`.

3 From the desktop *Start* menu, click *Settings > Control Panel*.

4 Double-click *Administrative Tools > Data Sources(ODBC)*.

The ODBC Data Source Administrator dialog box is displayed.

5 Click *System DSN*.

6 Click *ZENworks Database > Configure*.

7 In the ODBC Configuration for SQL Anywhere dialog box that is displayed, do the following:

1. Click the *Login* tab, then fill in the following fields:

   - ◆ **UserID:** Specify the username of the new database. By default, this field displays
     zenadmin.

   - ◆ **Password:** Specify the value of the username parameter that you had archived in

2. Click the *Database* tab, then fill in the following field:

   - ◆ **Server Name:** Specify the value of the Engine parameter that you had archived in
     Step 2e.

3. Click the *Network* tab, then set the value of the *TCP/IP* field as follows:

   `host=<IPaddress_of_the_new_database_server:port>`

   The values of the *IPaddress_of _the_new_database_server* and *port* are the values of the
   `<entry key="Server"></entry>` and `<entry key="Port"></entry>` tags
   respectively that you had archived in Step 2e.

4. Click the *ODBC* tab, then click *Test Connection*.

   The SQL Anywhere message is displayed.

5. Click *Yes*.

   A message is displayed indicating that the connection to the new database is successful.

6. Click *OK*.

8 Click *OK*.

9 At the console prompt, run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

Configuring ZENworks Reporting Server to Point to the New External Sybase on Linux

1 Ensure that the data has been moved from the Internal Sybase to the External Sybase as explained in Section 28.6.2, "Moving the Data from the Internal Sybase to the External Sybase," on page 259.

2 Edit the `/opt/novell/zenworks/share/boe/bobje/odbc.ini` file as follows:

  ◆ Set the value of the `ServerName` variable to the server name of the new database.

  ◆ Set the value of the `DatabaseName` variable to the name of the new database.

  ◆ Set the value of the `CommLinks` variable to the IP address and port of the new database server.

3 Run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

28.7 Migrating the Data from an Embedded Sybase SQL Anywhere to an External Oracle Database

ZENworks 10 Asset Management allows you migrate the data from an internal Embedded Sybase SQL Anywhere database running on a ZENworks Primary Server to an Oracle database installed on a device that does not have the ZENworks 10 Asset Management installed.

IMPORTANT: If the ZENworks Reporting Server is installed on the device, the Reporting Server does not work after migrating the database. For the Reporting Server to work, you must again install the ZENworks Reporting Server on a Primary Server on which you have installed the Oracle client after migrating the database. For more information, see Section 28.7.3, "Post-Migration Tasks," on page 267.

Review the following to migrate the database:

  ◆ Section 28.7.1, "Preparing to Move the Data," on page 263
  ◆ Section 28.7.2, "Migrating the Data from the Internal Sybase to an Oracle Database," on page 265
  ◆ Section 28.7.3, "Post-Migration Tasks," on page 267

28.7.1 Preparing to Move the Data

Before migrating the data from the Sybase database to Oracle database, do the following:

  ◆ Make sure that the license state of ZENworks 10 Asset Management is Active. The product must be installed and running either in the licensed version or the evaluation version.

  ◆ Save all the reports, `rights.xml`, and `ownership.xml` by using the `report-save (rpsv) (destination folder)` command. The XML files contain rights and ownership details of all the reports.

  ◆ Make sure that the Primary Server to which the Sybase database is configured has been upgraded to ZENworks 10 Asset Management SP3.

- Make sure that the ZENworks Primary Server has an internal Sybase database installed.
- Make sure that the Oracle database is installed on a device that does not have ZENworks 10 Asset Management installed.
- Make sure that the USERS tablespace has sufficient space to create and store the ZENworks database schema. The tablespace requires a minimum of 100 MB to create ZENworks database schema without any data in it and an appropriate additional space depending upon the size of the database to be migrated. The database migration utility uses only the USERS tablespace by default. You cannot manually specify any other tablespace during the migration.
- Make sure that the NLS_CHARACTERSET parameter is set to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter to AL16UTF16 by running the following query at the database prompt:

  ```
  select parameter, value from nls_database_parameters where parameter like
  '%CHARACTERSET%';
  ```
- (Conditional) If you want to migrate the database by creating a new user schema, ensure that the following additional requirements are met:
  - You must be aware of the database administrator credentials.
  - A tablespace must already exist for associating to the Oracle access user
- You can choose to migrate the database by using an existing user schema that resides on a server in your network in the following scenarios:
  - The database administrator creates a user schema with the necessary rights and you get the credentials for that user schema from the database administrator. In this case, the database administrator credentials are not required to migrate the database.
  - You create a user schema in the Oracle database and choose to use it during the database migration.

  If you want to migrate the database by using an existing user schema, ensure that the following additional requirements are met:
  - Make sure that the user schema has the following rights to create the database.

    ```
    CREATE SESSION
    CREATE_TABLE
    CREATE_VIEW
    CREATE_PROCEDURE
    CREATE_SEQUENCE
    CREATE_TRIGGER
    ```
  - Make sure that the quota for the user schema is set to Unlimited on the USERS tablespace.
- Manually stop the ZENworks services running on all the ZENworks Servers in the Management Zone.
  - **On Windows:** Do the following:
    1. Execute the following command at the server prompt:

       ```
       novell-zenworks-configure -c Start
       ```
    2. Specify the number next to the Stop action, then press Enter.
  - **On Linux:** Do the following:
    1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

2. Specify the number next to the `Stop` action, then press Enter.

◆ Make sure that the Novell ZENworks Embedded Datastore service on the Primary Server is running.

   ◆ **On Windows:** Do the following:

      1. From the Windows desktop *Start* menu, click *Settings* > *Control Panel*.

      2. Double-click *Administrative Tools* > *Services*.

      3. Ensure that the status of the *Novell ZENworks Embedded Datastore* service is *Started*.

   ◆ **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa status`.

◆ (Optional) The status of database migration is logged into the `novell-zenworks-configure.log` file. By default, only the messages of the type Info and Severe are logged. If you want other message types (such as Finer, Finest, and Warning) to also be logged into the file, do the following in the `novell-zenworks-configure.properties` file:

   1. Set the value of `Logger.logLevel` to the appropriate message type.

      For example, if you want messages of the type Finest to be logged:

      ```
       #Logger.logLevel   = FINEST
      ```

   2. Uncomment the line by removing the "#" as follows:

      ```
      Logger.logLevel   = FINEST
      ```

The `novell-zenworks-configure.properties` file is located in `%ZENWORKS_HOME%\conf\` on Windows and in `/etc/opt/novell/zenworks/` on Linux.

28.7.2 Migrating the Data from the Internal Sybase to an Oracle Database

Migrating the Data from the Internal Sybase Database to an Oracle Database

1 Make sure that all the tasks listed in Section 28.7.1, "Preparing to Move the Data," on page 263 are completed.

2 Run the database migration utility.

   ◆ **On Windows:** At the command prompt, go to *ZENworks_installation_path*\bin\, then enter the following command:

      ```
      novell-zenworks-configure.bat -c DBMigrateConfigureAction
      ```

   ◆ **On Linux:** At the console prompt, go to `/opt/novell/zenworks/bin` and enter the following command:

      ```
      novell-zenworks-configure -c DBMigrateConfigureAction
      ```

3 Enter the target database type as Oracle.

4 Enter the IP address or host name of the Oracle database server.

5 Enter the port used by the Oracle database server.

6 Enter the fully qualified net service name for the Oracle database.

7 You can choose to create a new user schema or use an existing user schema.

If you choose to create a new schema, continue with Step 8.

If you choose to use an existing user schema, skip to Step 9.

8 Enter the database server administrator's username and password.

9 Enter the schema name when prompted for the database username.

10 Enter the database schema password when prompted for the database user's password.

The database migration starts.

11 When the database migration is complete, you can check the `novell-zenworks-configure.log` file to see if the migration was successful. The log file is located in `%ZENWORKS_HOME%\log\` on Windows and in `/var/opt/novell/log/zenworks/` on Linux.

12 After the database is successfully migrated, continue with Section 28.7.3, "Post-Migration Tasks," on page 267.

Resuming the Database Migration

If the migration of the database is stopped for any reason, the ZENworks migration utility allows you to resume the migration if the `dbmigration.xml` file has been created. The file is located in the *ZENworks_installtion_path*`\bin` directory on Windows, and in the `/opt/ novell/ zenworks/bin` directory on Linux.

1 Run the database migration utility.

 ◆ **On Windows:** At the command prompt, go to *ZENworks_installation_path*`\bin\`, then enter the following command:

 `novell-zenworks-configure.bat -c DBMigrateConfigureAction`

 ◆ **On Linux:** At the console prompt, go to `/opt/novell/zenworks/bin` and enter the following command:

 `novell-zenworks-configure -c DBMigrateConfigureAction`

2 Enter the target database type as Oracle.

3 Enter the IP address or host name of the Oracle database server.

You must specify the IP address or host name of the Oracle database server used while migrating the database. For example, if you had specified the IP address of the database server while migrating the database, then you must specify the same IP address while resuming the database migration. You cannot specify the host name of the database server.

4 Enter the port used by the Oracle database server.

5 Enter the fully qualified net service name for the Oracle database.

6 Choose to use an existing schema.

7 Enter the schema name when prompted for the database username specified before stopping the database migration.

8 Enter the database schema password when prompted for the database user's password specified before stopping the database migration.

9 Choose to resume the database migration.

The database migration starts.

10 After the database is successfully migrated, continue with Section 28.7.3, "Post-Migration Tasks," on page 267.

28.7.3 Post-Migration Tasks

If there is only one server in the Management Zone, all ZENworks services are automatically started after the data is successfully migrated to an Oracle database.

If there are multiple servers in the Management Zone:

1 On the device where you ran the migration utility, copy the following files to the appropriate directory on all the servers:

```
zdm.xml
dmaccounts.properties
dmmappings.properties
```

The files are located in the *ZENworks_installation_path*\conf\datamodel directory on Windows and in the /etc/opt/novell/zenworks/datamodel directory on Linux.

2 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         ```
         novell-zenworks-configure -c Start
         ```

      2. Specify the number next to the Start action, then press Enter.

   ◆ **On Linux:** Do the following:

      1. Execute the following command at the server prompt:

         ```
         /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
         ```

      2. Specify the number next to the Start action, then press Enter.

3 Migrate the ZENworks Reports from the Sybase SQL Anywhere database to an Oracle database:

   3a Install the Oracle client on a Primary Server that does not have an instance of the ZENworks Reporting Server.

   3b Install a new instance of the ZENworks Reporting Server on the device on which you have installed the Oracle client.

   3c Copy the reports to the device where the new instance of the Reporting Server is running. These are the ZENworks Reports that you saved before migrating them. For more information, see Section 28.7.1, "Preparing to Move the Data," on page 263.

   3d Publish the reports and restore the reporting rights and the ownership details of the reports by using the following command:

      ```
      zman rpld path_of_directory_containing_rights.xml_and_ownership.xml
      ```

   3e Uninstall the ZENworks Reporting Server instance that was installed prior to migrating the database.

The ZENworks Server now points to the new database.

For the Oracle 10g database, any administrator name is case sensitive, including login names from user sources. The default ZENworks administrator account automatically created during installation uses an initial capital, so in order to log in to ZENworks Control Center, you must enter Administrator.

NOTE: Ensure not to delete the ZENworks Sybase database files if you want to revert to using ZENworks Sybase database at a later time.

External Database Maintenance 29

- Section 29.1, "Backing Up the External Sybase Database," on page 269
- Section 29.2, "Restoring the External Sybase Database," on page 279
- Section 29.3, "Moving the Data from One External Sybase Database to another External Sybase Database," on page 281
- Section 29.4, "Moving the Data from an External OEM Sybase Database to an Embedded Sybase Database," on page 284
- Section 29.5, "Migrating the Data from the External Sybase Database to an External Oracle Database," on page 287
- Section 29.6, "Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database," on page 292
- Section 29.7, "Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database," on page 295

29.1 Backing Up the External Sybase Database

When an external Sybase database (Remote OEM Sybase or Remote Sybase SQL Anywhere) has been installed by using the ZENworks 10 Configuration Management installation media, you can back it up to a directory on the local machine or to a network location.

- Section 29.1.1, "Backing Up the External Sybase Database on a Windows or Linux Server," on page 269
- Section 29.1.2, "Backing up the External Sybase Database Running on a Windows Server to a Network Location on a Remote Windows Machine," on page 272
- Section 29.1.3, "Backing up the External Sybase Database Running on a Linux Server to a Network Location on a Remote Linux Machine," on page 276

NOTE: This documentation provides instructions to back up the external Sybase database by using the DBISQL utility. You can choose to back up the database by using any other utility that is recommended in the Sybase SQL Anywhere documentation.

29.1.1 Backing Up the External Sybase Database on a Windows or Linux Server

1 On the Windows or Linux server that has the external Sybase database installed and running, launch the DBISQL utility:

   1a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.

   1b Enter the `dbisql` command.

   1c In the *Identification* tab, specify the database credentials.

1d Click the *Database* tab, then specify the name of database service that is currently running.

1e Click *OK*.

2 Decide whether you want to immediately back up the external Sybase database or to schedule the backup to run at a specific time. To immediately back up the database, continue with Step 2a. To schedule the backup to run at a specific time, skip to Step 3.

2a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

- **On Windows:** Do the following

  1. Execute the following command at the server prompt:

     ```
     novell-zenworks-configure -c Start
     ```

  2. Specify the number next to the Stop action, then press Enter.

- **On Linux:** Do the following:

  1. Execute the following command at the server prompt:

     ```
     /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
     ```

  2. Specify the number next to the Stop action, then press Enter.

2b To immediately back up the embedded Sybase SQL Anywhere database to a directory on the database server, do one of the following:

- Specify the following query in the *SQL Statements* section of the DBISQL utility:

  ```
  BACKUP DATABASE DIRECTORY
  'complete_path_of_the_backup_directory_on_database_server'
  TRANSACTION LOG TRUNCATE
  ```

  If you want to back up the database to a directory on Windows, you must use \\ (double backslash) as the delimiter while specifying the database backup directory path.

  Examples:

  - **On Windows:** To back up the database to the c:\dbbackup directory, execute the following query:

    ```
    BACKUP DATABASE DIRECTORY 'c:\\dbbackup' TRANSACTION LOG
    TRUNCATE
    ```

  - **On Linux:** To back up the database to the /root/dbBackup directory, execute the following query:

    ```
    BACKUP DATABASE DIRECTORY '/root/dbBackup' TRANSACTION LOG
    TRUNCATE
    ```

  You must manually archive the complete path of the database backup location that you specify in the query because you need to specify it when you want to change the database backup location at a later time.

- Manually copy zenworks_zone_name.db and zenworks_zone_name.log from the database server to the new location where you want to back up the database.

  By default, the files are located in *ZENworks_Installation_directory*\Novell\Zenworks\Database on a Windows Sybase database server, and in /var/opt/novell/zenworks/database/ on a Linux Sybase database server.

2c Click *Execute SQL Statement(s)*.

2d Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

 ◆ **On Windows:** Do the following

  1. Execute the following command at the server prompt:

   ```
   novell-zenworks-configure -c Start
   ```

  2. Specify the number next to the Start action, then press Enter.

 ◆ **On Linux:** Do the following:

  1. Execute the following command at the server prompt:

   ```
   /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
   ```

  2. Specify the number next to the Start action, then press Enter.

3 To schedule the backup to run at a specific time every day or on specific days of a month:

 1. Execute the following query by specifying it in the *SQL Statements* section of the DBISQL utility:

  ```
  CREATE EVENT backup_schedule_name

  SCHEDULE

  START TIME specify_the_schedule

  HANDLER

  BEGIN

  BACKUP DATABASE DIRECTORY
  'complete_path_of_the_backup_directory_on_database_server'

  TRANSACTION LOG TRUNCATE

  END;
  ```

 2. Click *Execute SQL Statement(s)*.

  While creating a database backup event, use the following guidelines:

   ◆ The backup schedule name must be unique.

   ◆ If you want to back up the database to a directory on Windows, you must use \\ (double backslash) as the delimiter while specifying the database backup directory path. For example, `c:\\dbbackup`.

   ◆ You must manually archive the backup schedule that you specify in the query because you need to specify it when you want to change the database schedule at a later time.

Examples:

 ◆ To back up the database at a 1:00 a.m. every day to the `/var/` directory on Linux, execute the following query:

  ```
  CREATE EVENT ZENDBbackup

  SCHEDULE

  START TIME '1:00 AM' EVERY 24 HOURS

  HANDLER

  BEGIN

  BACKUP DATABASE DIRECTORY '/var/'

  TRANSACTION LOG TRUNCATE
  ```

```
END;
```

◆ To back up the database at a 1:00 a.m. on the first, second, third, and fourth day of the month to the `c:\dbbackup` directory on Windows, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS ON (1,2,3,4)

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY 'c:\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

◆ To back up the database to the `/var/day_of_the_week` directory on Linux, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

DECLARE backupDir varchar(256);

DECLARE backup_stmt varchar(512);

SET backupDir = DAYNAME(now());

SET backup_stmt = 'BACKUP DATABASE DIRECTORY '|| '''/var//' ||
backupDir || ''''|| ' TRANSACTION LOG TRUNCATE';

EXECUTE IMMEDIATE backup_stmt;

END;
```

According to the backup schedule, the `zenworks_zone_name.db` database file and the `zenworks_zone_name.log` transaction log file are created in the database backup directory.

If you want to change the database backup location or the backup schedule at a later time, see Section 30.2.2, "Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup," on page 305.

29.1.2 Backing up the External Sybase Database Running on a Windows Server to a Network Location on a Remote Windows Machine

To back up an external Sybase database that is installed and running on a Windows server to a network location on another Windows machine, you need a local machine and a remote machine. The local machine is a Windows server with the external Sybase database installed. The remote machine is a Windows machine that has the network location to which you want to back up the database.

1 Perform the following steps on the local machine:

1a Create an administrative user and specify a password.

For example, you could specify the administrative username as `Administrator` and the password as `novell`.

1b From the desktop *Start* menu, click *Settings*, click *Control Panel*, double-click *Administrative Tools*, then double-click *Services*.

1c Right-click the *Novell ZENworks Datastore* service, then click *Properties*.

1d Click the *Log On* tab.

1e Select *This account*, then specify the name and the password of the administrative user you created in Step 1a.

For example, specify the user as `Administrator` and the password as `novell`.

1f Click *OK*.

2 Perform the following steps on the remote machine that has the network location where you want to save the backup:

2a Create an account with the same credentials as the user you created in Step 1a.

For example, specify user as `Administrator` and password as `novell`.

2b Provide Read/Write permission on the network location to the user.

3 Launch the DBISQL utility on the local machine:

3a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.

3b Enter the `dbisql` command.

3c In the *Identification* tab, specify the database credentials.

3d Click the *Database* tab, then specify the name of database service that is currently running.

3e Click *OK*.

4 Decide whether you want to immediately back up the external Sybase database or to schedule the backup to run at a specific time. To back up the database immediately, continue with Step 4a. To schedule the backup to run at a specific time, skip to Step 5.

4a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

4a1 Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

4a2 Specify the number next to the `Stop` action, then press Enter.

4b To immediately back up the embedded Sybase SQL Anywhere database to the network location on the remote machine, do one of the following:

❖ Specify the following query in the *SQL Statements* section of the DBISQL utility:

```
BACKUP DATABASE DIRECTORY
'\\\\IP_address_of_remote_machine\\backup_directory\\custom_direct
ory' TRANSACTION LOG TRUNCATE
```

In the query, `\\\\IP_address_of_the_remote_machine\\backup_directory\\` is the shared network location on the remote machine and `custom_directory_name` is a name that you specify for a directory to be newly created and into which the database files are to be backed up.

For example, execute the following query to back up the database to the `dbbackup` directory:

```
BACKUP DATABASE DIRECTORY
'\\\\shared_network_location_on_remote_machine\\dbbackup'
TRANSACTION LOG TRUNCATE
```

You must manually archive the complete path of the database backup location that you specify in the query because you need to specify it if you want to change the database backup location at a later time.

◆ Manually copy `zenworks_zone_name.db` and `zenworks_zone_name.log` from the database server to a desired location on the remote machine.

By default, the files are located in `ZENworks_Installation_directory\Novell\Zenworks\Database` on a Windows Sybase database server.

4c Click *Execute SQL Statement(s)*.

4d Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

4d1 Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

4d2 Specify the number next to the `Start` action, then press Enter.

5 To schedule the backup to run at a specific time every day or on specific days of a month:

1. Execute the following query by specifying it in the *SQL Statements* section of the DBISQL utility:

```
CREATE EVENT backup_schedule_name

SCHEDULE

START TIME specify_the_schedule

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY
'\\\\IP_address_of_remote_machine\\backup_directory\\custom_directory
'

TRANSACTION LOG TRUNCATE

END;
```

In the query, `\\\\IP_address_of_the_remote_machine\\backup_directory\\` is the shared network location on the remote machine and `custom_directory_name` is a name that you specify for a directory to be newly created and into which the database files are to be backed up.

While creating a database backup event, use the following guidelines:

◆ The backup schedule name must be unique.

◆ You must manually archive the backup schedule that you specify in the query because you need to specify it if you want to change the database schedule at a later time.

2. Click *Execute SQL Statement(s)*.

Examples:

- ◆ To back up the database at a 1:00 a.m. every day to the `dbbackup` directory on Windows, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY
'\\\\shared_network_location_on_remote_machine\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

- ◆ To back up the database at a 1:00 a.m. on the first, second, third, and fourth day of the month to the `dbbackup` directory on a Windows server, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS ON (1,2,3,4)

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY
'\\\\shared_network_location_on_remote_machine\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

- ◆ To back up the database to the `\dbbackup\day_of_the_week` directory on a Windows server, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

DECLARE backupDir varchar(256);

DECLARE backup_stmt varchar(512);

SET backupDir = DAYNAME(now());

SET backup_stmt = 'BACKUP DATABASE DIRECTORY '||
'''\\\\shared_network_location_on_remote_machine\\dbbackup/' ||
backupDir || ''''|| 'TRANSACTION LOG TRUNCATE';

EXECUTE IMMEDIATE backup_stmt;

END;
```

According to the backup schedule, `zenworks_zone_name`.db and `zenworks_zone_name`.log are created in the network location on the remote machine. The backed-up database is stored in `zenworks_zone_name`.db. The result of the database backup is logged in `zenworks_zone_name`.log.

If you want to change the database backup location or the backup schedule at a later time, see Section 30.2.2, "Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup," on page 305.

29.1.3 Backing up the External Sybase Database Running on a Linux Server to a Network Location on a Remote Linux Machine

To back up the external Sybase database that is installed and running on a Linux server to a network location on a Linux machine, you need a local machine and a remote machine. The local machine is a Linux server with the external Sybase database installed. The remote machine is a Linux machine that has the network location to which you want to back up the database.

You can back up the database on a Linux machine by using any Linux share such as Samba share or an NFS share.

To back up the external Sybase database that is installed and running on a Linux server to a network location on a Linux machine by using Samba share:

1 Create a Samba share on the remote machine:

    1a Create a user by entering the `useradd` *user_name* command at the command prompt.

    1b Log in to the remote machine with the username you created in Step 1a, and set the password by using the `passwd` *specify_the_password* command.

    1c Create a directory to save the database backup.

        For example, create a directory with the name `backup`.

    1d Open the Samba server settings by running the `yast2 samba-server` command.

    1e Click the *Shares* tab, then click *Add* to specify the share name and the path to the backup directory you created in Step 1c.

        For example, specify the share name as `dbbackup`.

    1f Select the `dbbackup` share, click *Edit*, then add the following attributes:

           ◆ create mask = 0640

           ◆ force user = *user_name_created_in_*Step 1a

           ◆ guest ok = yes

           ◆ public = yes

           ◆ wide links = no

           ◆ writeable = yes

2 Create a directory on the local machine.

    For example, create a directory with the name `zenworks_dbbackup` in `/root`.

3 Mount the Samba share on the `zenworks_dbbackup` directory on the local machine by entering the following command at the command prompt:

```
mount -t smbfs //IP_address of the remote_machine/share_name -o
username=user_name_specified_in_Step1a,password=password_
specified_in_Step_1b
local_directory_name_with_complete_path_created_in_Step2
```

For example:

```
mount -t smbfs //IP_address of the remote_machine/dbbackup -o
username=user_name_specified_in_Step1a,password=password_
specified_in_Step_1b /root/zenworks_dbbackup
```

4 Launch the DBISQL utility on the local machine:

4a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.

4b Enter the `dbisql` command.

4c In the *Identification* tab, specify the database credentials.

4d Click the *Database* tab, then specify the name of database service that is currently running.

4e Click *OK*.

5 Decide whether you want to immediately back up the external Sybase database or to schedule the backup to run at a specific time. To back up the database immediately, continue with this Step 5a. To schedule the backup to run at a specific time, skip to Step 6.

5a Stop all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

5a1 Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

5a2 Specify the number next to the `Stop` action, then press Enter.

5b To immediately back up the external Sybase database to the network location on the remote machine, do one of the following:

 ◆ Specify the following query in the *SQL Statements* section of the DBISQL utility:

```
BACKUP DATABASE DIRECTORY
'complete_path_of_the_backup_directory_on_database_server'
TRANSACTION LOG TRUNCATE
```

For example, execute the following query to back up the database to the `/root/zenworks_dbbackup` directory:

```
BACKUP DATABASE DIRECTORY '/root/zenworks_dbbackup/' TRANSACTION
LOG TRUNCATE
```

You must manually archive the complete path of the database backup location that you specify in the query because you need to specify it if you want to change the database backup location at a later time.

 ◆ Manually copy `zenworks_zone_name.db` and `zenworks_zone_name.log` from the database server to a desired location on the remote machine.

By default, the files are located in `/var/opt/novell/zenworks/database/` on a Linux Sybase database server.

5c Click *Execute SQL Statement(s)*.

5d Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

5d1 Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

5d2 Specify the number next to the `Start` action, then press Enter.

6 To schedule the backup to run at a specific time every day or on specific days of a month:

    1. Execute the following query by specifying it in the *SQL Statements* section of the DBISQL utility:

```
CREATE EVENT backup_schedule_name

SCHEDULE

START TIME specify_the_schedule

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY
'complete_path_of_the_backup_directory_on_database_server'

TRANSACTION LOG TRUNCATE

END;
```

    While creating a database backup event, use the following guidelines:

        ◆ The backup schedule name that you specify must be unique.

        ◆ You must manually archive the backup schedule that you specify in the query because you need to specify it if you want to change the database schedule at a later time.

    2. Click *Execute SQL Statement(s)*.

Examples:

◆ To back up the database at a 1:00 a.m. every day to the `/root/zenworks_dbbackup` directory on Linux, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY '/root/zenworks_dbbackup/'

TRANSACTION LOG TRUNCATE

END;
```

◆ To back up the database at a 1:00 a.m. on the first, second, third, and fourth day of the month to the `/root/zenworks_dbbackup` directory on Linux, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS ON (1,2,3,4)

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY '/root/zenworks_dbbackup/'

TRANSACTION LOG TRUNCATE

END;
```

◆ To back up the database to the `/root/zenworks_dbbackup/day_of_the_week` directory on Linux, execute the following query:

```
CREATE EVENT ZENDBbackup

SCHEDULE

START TIME '1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

DECLARE backupDir varchar(256);

DECLARE backup_stmt varchar(512);

SET backupDir = DAYNAME(now());

SET backup_stmt = 'BACKUP DATABASE DIRECTORY '|| '''/root/
zenworks_dbbackup//' || backupDir || ''''|| ' TRANSACTION LOG
TRUNCATE';

EXECUTE IMMEDIATE backup_stmt;

END;
```

According to the backup schedule, `zenworks_zone_name`.db and `zenworks_zone_name`.log are created in the network location on the remote machine (`/root/zenworks_dbbackup`). The backed-up database is stored in `zenworks_zone_name`.db. The result of the database backup is logged in `zenworks_zone_name`.log.

If you want to change the database backup location or the backup schedule at a later time, see Section 30.2.2, "Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup," on page 305.

29.2 Restoring the External Sybase Database

IMPORTANT: If the database is located on a ZENworks Server, you must first restore the ZENworks Server, then restore the ZENworks database. Ensure that you have backed up the ZENworks Server and the database (at least once). You can also back up the ZENworks database on a regular basis. However, you can back up the server and the database in any order. For more information about backing up and restoring the ZENworks Server, see Chapter 9, "Backing Up and Restoring the ZENworks Server and Certificate Authority," on page 105.

You can choose to restore the backed-up external Sybase database (Remote OEM Sybase or Remote Sybase SQL Anywhere) on the same device that has database server installed or to a different device.

To restore the backed-up external Sybase database:

1 Stop the Novell ZENworks Embedded Datastore service on the database server on which you want to restore the backed-up database. If you choose to restore the backed-up database on a different device, you must stop the service on that device as well as on the database server.

   ◆ **On Windows:** Do the following:

      1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

      2. Double-click *Administrative Tools > Services*.

      3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Stop*, or select the *Novell ZENworks Embedded Datastore* service, then click ▪ on the toolbar.

   ◆ **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa stop`.

2 Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

  - **On Windows:** Do the following

    1. Execute the following command at the server prompt:

       `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Stop` action, then press Enter.

  - **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Stop`

    2. Specify the number next to the `Stop` action, then press Enter.

3 Copy the following files from the device where the external Sybase database is backed up to the device on which you want to restore the external Sybase database:

  - `zenworks_zone_name.db`

  - `zenworks_zone_name.log`

  By default, the files must be copied to the `ZENworks_Installation_directory:\Novell\Zenworks\Database` on a Windows Sybase database server, and to `/var/opt/novell/zenworks/database/` on a Linux Sybase database server.

4 Start the Novell ZENworks Embedded Datastore service on the database server on which you restored the backed-up database. If you have restored the backed-up database to a different device, you must start the service on that device as well as on the database server.

  - **On Windows:** Do the following:

    1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

    2. Double-click *Administrative Tools > Services*.

    3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Start*, or select the *Novell ZENworks Embedded Datastore* service, then click ▶ on the toolbar.

  - **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa start`.

5 (Conditional) If you restore the database to a location other than the one given in the `zenworks_database.conf` file, you must manually edit the file to specify the new location of the database. The `zenworks_database.conf` file is located by default in the `zenworks_installation_directory\novell\zenworks\database\conf\` directory on Windows and in the `/etc/opt/novell/zenworks/` directory on Linux.

6 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

  - **On Windows:** Do the following

    1. Execute the following command at the server prompt:

       `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

  - **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

29.3 Moving the Data from One External Sybase Database to another External Sybase Database

ZENworks 10 Asset Management allows you move the data from one OEM Sybase database (external Sybase database) to another external Sybase database.

- Section 29.3.1, "Preparing to Move the Data," on page 281
- Section 29.3.2, "Moving the Data from One External Sybase to Another External Sybase," on page 281
- Section 29.3.3, "Configuring ZENworks Reporting Server to Point from One External Sybase to Another External Sybase," on page 282

29.3.1 Preparing to Move the Data

Before moving the data from one external Sybase database to another external Sybase database, do the following:

- Make sure that the ZENworks Server is configured to an external Sybase database. The database can be installed on the ZENworks Server, or on a different Windows or Linux device.The data is moved from this database to another external database. Assume that the device that hosts the database is EDB1.

- Make sure that you have another Windows or Linux device with an external Sybase database installed. Assume that this device to which you are moving the data to is EDB2.

  For more information on how to install an external Sybase database, see "Installing an External ZENworks Database" in the *ZENworks 10 Asset Management Installation Guide*.

29.3.2 Moving the Data from One External Sybase to Another External Sybase

1 Stop all the ZENworks Services on all the ZENworks Servers that are connected to EDB1.

- **On Windows:** Do the following
   1. Execute the following command at the server prompt:

      ```
      novell-zenworks-configure -c Start
      ```

   2. Specify the number next to the Stop action, then press Enter.

- **On Linux:** Do the following:
   1. Execute the following command at the server prompt:

      ```
      /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
      ```

   2. Specify the number next to the Stop action, then press Enter.

2 On EDB1 and EDB2 devices, stop the Novell ZENworks Embedded Datastore service.

- **On Windows:** Do the following:
   1. From the Windows desktop *Start* menu, click *Settings* > *Control Panel*.
   2. Double-click *Administrative Tools* > *Services*.
   3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Stop*, or select the *Novell ZENworks Embedded Datastore* service, then click ■ on the toolbar.

- **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa stop`.

3 From the EDB1 device, copy `zenworks_database.conf` and all files within the `database` directory to the appropriate directories on the EDB2 device.

The `zenworks_database.conf` is located in the `ZENworks_installation_path\conf\` directory on Windows and in the `/etc/opt/novell/zenworks/` directory on Linux.

The `database` directory is located in `ZENworks_installation_path` by default on Windows and in the `/var/opt/novell/zenworks/` directory on Linux.

4 On the EDB2 device, open `zenworks_database.conf` and make sure that it contains the correct path of the database file.

5 On each ZENworks Server that is connected to EDB1, edit `zdm.xml` (located in `ZENworks_installation_path\conf\datamodel` on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux):

- Set the value of the `Server` entry key to the IP address of the EDB2 device.
- Make sure that the value of the `Port` entry key is the port number on which the EDB2 device is running.

6 On the EDB2 device, start the Novell ZENworks Embedded Datastore service:

- **On Windows:** Do the following:
  1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.
  2. Double-click *Administrative Tools > Services*.
  3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Start*, or select the *Novell ZENworks Embedded Datastore* service, then click ▶ on the toolbar.
- **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa start`.

7 Start all the ZENworks Services on all the ZENworks Servers that are connected to the database.

- **On Windows:** Do the following
  1. Execute the following command at the server prompt:

     `novell-zenworks-configure -c Start`
  2. Specify the number next to the `Start` action, then press Enter.
- **On Linux:** Do the following:
  1. Execute the following command at the server prompt:

     `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`
  2. Specify the number next to the `Start` action, then press Enter.

8 (Conditional) If you have installed ZENworks Reporting Server, continue with Section 29.3.3, "Configuring ZENworks Reporting Server to Point from One External Sybase to Another External Sybase," on page 282.

29.3.3 Configuring ZENworks Reporting Server to Point from One External Sybase to Another External Sybase

Do the following to point ZENworks Reporting Server to the new database:

- "Connecting ZENworks Reporting Server to the New Database on Windows" on page 283
- "Connecting ZENworks Reporting Server to the New Database on Linux" on page 283

Connecting ZENworks Reporting Server to the New Database on Windows

1 Ensure that the data has been moved from one External Sybase to another External Sybase as explained in Section 29.3.2, "Moving the Data from One External Sybase to Another External Sybase," on page 281.

2 From the desktop *Start* menu, click *Settings > Control Panel*.

3 Double-click *Administrative Tools > Data Sources(ODBC)*.

The ODBC Data Source Administrator dialog box is displayed.

4 Click *System DSN*.

5 Click *ZENworks Database > Configure*.

6 In the ODBC Configuration for SQL Anywhere dialog box that is displayed, do the following:

- Click the *Login* tab, then specify the userID and password of the new database.
- Click the *Database* tab, then do the following:
    - In the *Server Name* field, specify the server name of the new database.
    - In the *Database Name* field, specify the name of the new database.
- Click the *Network* tab, then set the value of the *TCP/IP* field as follows:

  `host=<IPaddress of the new database server:port>`
- Click the *ODBC* tab, then click *Test Connection*.

  The SQL Anywhere message is displayed.
- Click *Yes*.

  A message is displayed indicating that the connection to the new database is successful.
- Click *OK*.

7 Click *OK*.

8 At the console prompt, run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

Connecting ZENworks Reporting Server to the New Database on Linux

1 Ensure that the data has been moved from one External Sybase to another External Sybase as explained in Section 29.3.2, "Moving the Data from One External Sybase to Another External Sybase," on page 281.

2 Edit the `/opt/novell/zenworks/share/boe/bobje/odbc.ini` file as follows:

- Set the value of the `ServerName` variable to the server name of the new database.
- Set the value of the `DatabaseName` variable to the name of the new database.
- Set the value of the `CommLinks` variable to the IP address and port of the new database server.

3 Run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

29.4 Moving the Data from an External OEM Sybase Database to an Embedded Sybase Database

ZENworks 10 Asset Management allows you move the data from an OEM Sybase database (external Sybase database) to a Embedded OEM Sybase SQL Anywhere database (embedded Sybase database) that is installed on the ZENworks Server.

- Section 29.4.1, "Preparing to Move the Data," on page 284
- Section 29.4.2, "Moving the Data from the External Sybase to the Embedded Sybase," on page 284
- Section 29.4.3, "Configuring ZENworks Reporting Server to Point from the External Sybase to the Embedded Sybase," on page 286

29.4.1 Preparing to Move the Data

Before moving the data from an external Sybase database to an embedded Sybase database, do the following:

- Make sure that ZENworks 10 Asset Management is configured to an external OEM Sybase database. The database can be installed on a Windows or Linux device.
- Install the Embedded OEM Sybase database on the ZENworks Server. For more information on how to install the database, see "Installing an External ZENworks Database" in the *ZENworks 10 Asset Management Installation Guide*.

  During the installation of the embedded Sybase database, you must consider the following points while configuring the Sybase Access Configuration page:

  - The database name can be same as that of the external Sybase database or can be a unique name.
  - Make sure that the username and password are same as that of the external Sybase database.
  - Make sure that the database server name is unique.

29.4.2 Moving the Data from the External Sybase to the Embedded Sybase

1 Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

- **On Windows:** Do the following

  1. Execute the following command at the server prompt:

     ```
     novell-zenworks-configure -c Start
     ```

  2. Specify the number next to the `Stop` action, then press Enter.

- **On Linux:** Do the following:

  1. Execute the following command at the server prompt:

     ```
     /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
     ```

  2. Specify the number next to the `Stop` action, then press Enter.

2 On the ZENworks Server that has the embedded Sybase database installed, delete the contents of the `database` directory.

The `database` directory is located in *`ZENworks_installation_path`* on Windows and in the `/opt/novell/zenworks/` directory on Linux.

3 On the device that has the external Sybase database installed, stop the Novell ZENworks Embedded Datastore service.

- ◆ **On Windows:** Do the following:

    1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

    2. Double-click *Administrative Tools > Services*.

    3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Stop*, or select the *Novell ZENworks Embedded Datastore* service, then click ▪ on the toolbar.

- ◆ **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa stop`.

4 From the device that has the external Sybase database installed, copy all files within the `database` directory to the appropriate directories on the ZENworks Server that has the embedded Sybase database.

The `database` directory is located in *`ZENworks_installation_path`* on Windows and in the `/opt/novell/zenworks/` directory on Linux.

5 On the ZENworks Server that has the embedded Sybase database installed, open `zenworks_database.conf` and make sure that it contains the correct path of the database file.

6 On the ZENworks Server that has the embedded Sybase database installed, edit `zdm.xml` (located in *`ZENworks_installation_path`*`\conf\datamodel` on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux):

- ◆ Add the following entry:

    `<entry key="Embedded">true</entry>`

- ◆ Set the value of the `Server` entry key to 127.0.0.1 (the IP address of the ZENworks Server that has the embedded Sybase database installed).

- ◆ Make sure that the value of the `Port` entry key is the port number on which the embedded Sybase database is running.

- ◆ Set the value of the `Engine` entry key to the database server name specified during the installation of the embedded Sybase database.

- ◆ (Optional) If you've specified a unique database name during the installation of the embedded Sybase database, set the value of the `Database` entry key to the unique database name.

7 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

- ◆ **On Windows:** Do the following

    1. Execute the following command at the server prompt:

        `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

- ◆ **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

   2. Specify the number next to the `Start` action, then press Enter.

8 (Conditional) If you have installed ZENworks Reporting Server, continue with Section 29.4.3, "Configuring ZENworks Reporting Server to Point from the External Sybase to the Embedded Sybase," on page 286.

29.4.3 Configuring ZENworks Reporting Server to Point from the External Sybase to the Embedded Sybase

Do the following to point ZENworks Reporting Server to the new database:

◆ "Configuring ZENworks Reporting Server to Point to the Embedded Sybase on Windows" on page 286

◆ "Configuring ZENworks Reporting Server to Point to the Embedded Sybase on Linux" on page 287

Configuring ZENworks Reporting Server to Point to the Embedded Sybase on Windows

1 Ensure that the data has been moved from one External Sybase to another External Sybase as explained in Section 29.4.2, "Moving the Data from the External Sybase to the Embedded Sybase," on page 284.

2 From the Windows desktop *Start* menu, click *Settings > Control Panel*.

3 Double-click *Administrative Tools > Data Sources(ODBC)*.

The ODBC Data Source Administrator dialog box is displayed.

4 Click *System DSN*.

5 Click *ZENworks Database > Configure*.

6 In the ODBC Configuration for SQL Anywhere dialog box that is displayed, do the following:

   ◆ Click the *Login* tab, then specify the userID and password of the new database.

   ◆ Click the *Database* tab, then do the following:

      ◆ In the *Server Name* field, specify the server name of the new database.

      ◆ In the *Database Name* field, specify the name of the new database.

   ◆ Click the *Network* tab, then set the value of the *TCP/IP* field as follows:

      ```
      host=<IPaddress of the new database server:port>
      ```

   ◆ Click the *ODBC* tab, then click *Test Connection*.

   ◆ Click *Yes* on the SQL Anywhere message that appears.

      A message is again displayed indicating that the connection to the new database is successful.

   ◆ Click *OK*.

7 Click *OK*.

8 At the console prompt, run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

Configuring ZENworks Reporting Server to Point to the Embedded Sybase on Linux

1 Ensure that the data has been moved from one External Sybase to another External Sybase as explained in Section 29.4.2, "Moving the Data from the External Sybase to the Embedded Sybase," on page 284.

2 Edit the `/opt/novell/zenworks/share/boe/bobje/odbc.ini` file as follows:

   ◆ Set the value of the `ServerName` variable to the server name of the new database.

   ◆ Set the value of the `DatabaseName` variable to the name of the new database.

   ◆ Set the value of the `CommLinks` variable to the IP address and port of the new database server.

3 Run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

29.5 Migrating the Data from the External Sybase Database to an External Oracle Database

ZENworks 10 Asset Management allows you migrate the data from the external Sybase database to an Oracle database installed on a device that does not have the ZENworks 10 Asset Management installed.

IMPORTANT: If the ZENworks Reporting Server is installed on the device, the Reporting Server does not work after migrating the database. For the Reporting Server to work, you must again install the ZENworks Reporting Server on a Primary Server on which you have installed the Oracle client after migrating the database. For more information, see Section 29.5.3, "Post-Migration Tasks," on page 291.

Review the following to migrate the database:

   ◆ Section 29.5.1, "Preparing to Move the Data," on page 287
   ◆ Section 29.5.2, "Migrating the Data from the External Sybase Database to an Oracle Database," on page 289
   ◆ Section 29.5.3, "Post-Migration Tasks," on page 291

29.5.1 Preparing to Move the Data

Before migrating the data from the external Sybase database to Oracle database, do the following:

   ◆ Make sure that the license state of ZENworks 10 Asset Management is Active. The product must be installed and running either in the licensed version or the evaluation version.

   ◆ Save all the reports, `rights.xml`, and `ownership.xml` by using the `report-save (rpsv) (destination folder)` command. The XML files contain rights and ownership details of all the reports.

   ◆ Make sure that the Primary Server to which the Sybase database is configured has been upgraded to ZENworks 10 Asset Management SP3.

   ◆ Make sure that the Oracle database is installed on a device that does not have ZENworks 10 Asset Management installed.

- Make sure that the USERS tablespace has sufficient space to create and store the ZENworks database schema. The tablespace requires a minimum of 100 MB to create ZENworks database schema without any data in it and an appropriate additional space depending upon the size of the database to be migrated. The database migration utility uses only the USERS tablespace by default. You cannot manually specify any other tablespace during the migration.

- Make sure that the NLS_CHARACTERSET parameter is set to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter to AL16UTF16 by running the following query at the database prompt:

```
select parameter, value from nls_database_parameters where parameter like
'%CHARACTERSET%';
```

- (Conditional) If you want to migrate the database by creating a new user schema, ensure that the following additional requirements are met:

  - You must be aware of the database administrator credentials.

  - A tablespace must already exist for associating to the Oracle access user

- You can choose to migrate the database by using an existing user schema that resides on a server in your network in the following scenarios:

  - The database administrator creates a user schema with the necessary rights and you get the credentials for that user schema from the database administrator. In this case, the database administrator credentials are not required to migrate the database.

  - You create a user schema in the Oracle database and choose to use it during the database migration.

  If you want to migrate the database by using an existing user schema, ensure that the following additional requirements are met:

  - Make sure that the user schema has the following rights to create the database.

    ```
    CREATE SESSION
    CREATE_TABLE
    CREATE_VIEW
    CREATE_PROCEDURE
    CREATE_SEQUENCE
    CREATE_TRIGGER
    ```

  - Make sure that the quota for the user schema is set to Unlimited on the USERS tablespace.

- Manually stop the ZENworks services running on all the ZENworks Servers in the Management Zone.

  - **On Windows:** Do the following:

    1. Execute the following command at the server prompt:

       ```
       novell-zenworks-configure -c Start
       ```

    2. Specify the number next to the Stop action, then press Enter.

  - **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       ```
       /opt/novell/zenworks/bin/novell-zenworks-configure -c Start
       ```

    2. Specify the number next to the Stop action, then press Enter.

- Make sure that the Novell ZENworks Embedded Datastore service on the Primary Server is running.
    - **On Windows:** Do the following:
        1. From the Windows desktop *Start* menu, click *Settings* > *Control Panel*.
        2. Double-click *Administrative Tools* > *Services*.
        3. Ensure that the status of the *Novell ZENworks Embedded Datastore* service is *Started*.
    - **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa status`.
- (Optional) The status of database migration is logged into the `novell-zenworks-configure.log` file. By default, only the messages of the type Info and Severe are logged. If you want other message types (such as Finer, Finest, and Warning) to also be logged into the file, do the following in the `novell-zenworks-configure.properties` file:
    1. Set the value of `Logger.logLevel` to the appropriate message type.

        For example, if you want messages of the type Finest to be logged:

        ```
         #Logger.logLevel   = FINEST
        ```
    2. Uncomment the line by removing the "#" as follows:

        ```
        Logger.logLevel   = FINEST
        ```

    The `novell-zenworks-configure.properties` file is located in `%ZENWORKS_HOME%\conf\` on Windows and in `/etc/opt/novell/zenworks/` on Linux.

29.5.2 Migrating the Data from the External Sybase Database to an Oracle Database

Migrating the Data from the External Sybase Database to an Oracle Database

1 Make sure that all the tasks listed in Section 29.5.1, "Preparing to Move the Data," on page 287 are completed.

2 Run the database migration utility.

- **On Windows:** At the command prompt, go to *ZENworks_installation_path*\bin\, then enter the following command:

    ```
    novell-zenworks-configure.bat -c DBMigrateConfigureAction
    ```

- **On Linux:** At the console prompt, go to `/opt/novell/zenworks/bin` and enter the following command:

    ```
    novell-zenworks-configure -c DBMigrateConfigureAction
    ```

3 Enter the target database type as Oracle.

4 Enter the IP address or host name of the Oracle database server.

5 Enter the port used by the Oracle database server.

6 Enter the fully qualified net service name for the Oracle database.

7 You can choose to create a new user schema or use an existing user schema.

If you choose to create a new schema, continue with Step 8.

If you choose to use an existing user schema, skip to Step 9.

8 Enter the database server administrator's username and password.

9 Enter the schema name when prompted for the database username.

10 Enter the database schema password when prompted for the database user's password.

The database migration starts.

11 When the database migration is complete, you can check the `novell-zenworks-configure.log` file to see if the migration was successful. The log file is located in `%ZENWORKS_HOME%\log\` on Windows and in `/var/opt/novell/log/zenworks/` on Linux.

12 After the database is successfully migrated, continue with Section 29.5.3, "Post-Migration Tasks," on page 291.

Resuming the Database Migration

If the migration of the database is stopped for any reason, the ZENworks migration utility allows you to resume the migration if the `dbmigration.xml` file has been created. The file is located in the `ZENworks_installtion_path\bin` directory on Windows, and in the `/opt/ novell/ zenworks/bin` directory on Linux.

1 Run the database migration utility.

   ◆ **On Windows:** At the command prompt, go to `ZENworks_installation_path\bin\`, then enter the following command:

   `novell-zenworks-configure.bat -c DBMigrateConfigureAction`

   ◆ **On Linux:** At the console prompt, go to `/opt/novell/zenworks/bin` and enter the following command:

   `novell-zenworks-configure -c DBMigrateConfigureAction`

2 Enter the target database type as Oracle.

3 Enter the IP address or host name of the Oracle database server.

   You must specify the IP address or host name of the Oracle database server used while migrating the database. For example, if you had specified the IP address of the database server while migrating the database, then you must specify the same IP address while resuming the database migration. You cannot specify the host name of the database server.

4 Enter the port used by the Oracle database server.

5 Enter the fully qualified net service name for the Oracle database.

6 Choose to use an existing schema.

7 Enter the schema name when prompted for the database username specified before stopping the database migration.

8 Enter the database schema password when prompted for the database user's password specified before stopping the database migration.

9 Choose to resume the database migration.

The database migration starts.

10 After the database is successfully migrated, continue with Section 29.5.3, "Post-Migration Tasks," on page 291.

29.5.3 Post-Migration Tasks

If there is only one server in the Management Zone, all ZENworks services are automatically started after the data is successfully migrated to an Oracle database.

If there are multiple servers in the Management Zone:

1 On the device where you ran the migration utility, copy the following files to the appropriate directory on all the servers:

```
zdm.xml
dmaccounts.properties
dmmappings.properties
```

The files are located in the *ZENworks_installation_path*\conf\datamodel directory on Windows and in the /etc/opt/novell/zenworks/datamodel directory on Linux.

2 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

◆ **On Windows:** Do the following

1. Execute the following command at the server prompt:

```
novell-zenworks-configure -c Start
```

2. Specify the number next to the Start action, then press Enter.

◆ **On Linux:** Do the following:

1. Execute the following command at the server prompt:

```
/opt/novell/zenworks/bin/novell-zenworks-configure -c Start
```

2. Specify the number next to the Start action, then press Enter.

3 Migrate the ZENworks Reports from the Sybase SQL Anywhere database to an Oracle database:

3a Install the Oracle client on a Primary Server that does not have an instance of the ZENworks Reporting Server.

3b Install a new instance of the ZENworks Reporting Server on the device on which you have installed the Oracle client.

3c Copy the reports to the device where the new instance of the Reporting Server is running. These are the ZENworks Reports that you saved before migrating them. For more information, see Section 29.5.1, "Preparing to Move the Data," on page 287.

3d Publish the reports and restore the reporting rights and the ownership details of the reports by using the following command:

```
zman rpld path_of_directory_containing_rights.xml_and_ownership.xml
```

3e Uninstall the ZENworks Reporting Server instance that was installed prior to migrating the database.

The ZENworks Server now points to the new database.

For the Oracle 10g database, any administrator name is case sensitive, including login names from user sources. The default ZENworks administrator account automatically created during installation uses an initial capital, so in order to log in to ZENworks Control Center, you must enter Administrator.

NOTE: Ensure not to delete the ZENworks Sybase database files if you want to revert to using ZENworks Sybase database at a later time.

29.6 Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database

If you move the data from one MS SQL database to another MS SQL database, the Windows or Linux ZENworks Server must be configured to point to the new MS SQL database.

The following sections provide detailed information:

- Section 29.6.1, "Preparing to Move the Data," on page 292
- Section 29.6.2, "Configuring the ZENworks Server to Point to the New MS SQL Database," on page 293
- Section 29.6.3, "Configuring ZENworks Reporting Server to Point to the New MS SQL Database," on page 294

29.6.1 Preparing to Move the Data

Before configuring the ZENworks Server to point the new MS SQL database, do the following:

- Make sure that the ZENworks Server is configured to an MS SQL database. The database can be installed on the ZENworks Server or on a different device. Assume that the device that currently host the MS SQL database is called MSDB1.

- Make sure that you have another Windows device with an MS SQL database installed. Assume that this device is called MSDB2. For more information on how to install an MS SQL database, see "Installing an External ZENworks Database" in the *ZENworks 10 Asset Management Installation Guide*.

- Move the data from MSDB1 to MSDB2. For more information about moving the data, see the MS SQL database documentation.

- Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.

    - **On Windows:** Do the following

        1. Execute the following command at the server prompt:

           `novell-zenworks-configure -c Start`

        2. Specify the number next to the `Stop` action, then press Enter.

    - **On Linux:** Do the following:

        1. Execute the following command at the server prompt:

           `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

        2. Specify the number next to the `Stop` action, then press Enter.

29.6.2 Configuring the ZENworks Server to Point to the New MS SQL Database

To configure the ZENworks Server to point to the new database (MSDB2), perform the following tasks on the ZENworks Server:

1 Edit `zdm.xml` (located in `ZENworks_installation_path`\conf\datamodel on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux) to do the following:

  - Make sure that the value of the `Port` entry key is the port number on which the MS SQL database is running.

  - Set the value of the `Server` entry key to the IP address of the MSDB2 device.

  - Set the value of the `Database` entry key to path of the database directory of the MSDB2 device.

2 Restart the ZENworks services.

  - **On Windows:** Do the following:

    1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.

    2. Double-click *Administrative Tools > Services*.

    3. Start the following services: *Novell ZENworks Server*, *Novell ZENworks Services Monitor*, and *Novell ZENworks Agent Service*.

  - **On Linux:** At the console prompt, enter the following commands:

    - `/etc/init.d/./novell-zenmntr restart`

    - `/etc/init.d/./novell-zenserver restart`

    - `/etc/init.d/./novell-zenloader restart`

3 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

  - **On Windows:** Do the following

    1. Execute the following command at the server prompt:

       `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

  - **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

4 (Conditional) If you have installed ZENworks Reporting Server, continue with .

29.6.3 Configuring ZENworks Reporting Server to Point to the New MS SQL Database

Do the following to point ZENworks Reporting Server to the new database (MSDB2):

- "Configuring ZENworks Reporting Server to Point to the New MS SQL Database on Windows" on page 294
- "Configuring ZENworks Reporting Server to Point to the New MS SQL Database on Linux" on page 294

Configuring ZENworks Reporting Server to Point to the New MS SQL Database on Windows

1 Ensure that the data has been moved to MSDB2 and the ZENworks Server points to MSDB2 as explained in Section 29.6.2, "Configuring the ZENworks Server to Point to the New MS SQL Database," on page 293.

2 On the ZENworks Server, click *Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC)* on a 32-bit device, and click *Start > Programs > ZENworks Reporting Server > ZENworks Reporting Server > 32-bit Data Sources (ODBC)* on a 64-bit device.

3 Click *System DSN*.

4 Click *ZENworks Database > Configure*.

5 In the *Which SQL Server do you want to connect to* field, specify the IP address of the new database (MSDB2), then click *Next*.

6 Specify the login ID and the password to connect to MSDB2, then click *Next*.

7 Click *Next > Finish*.

8 Click *Test Data Source* to verify the connection to the new database.

A message appears indicating that the connection is successful.

9 Click *OK* twice.

ZENworks Reporting Server now points to the new database.

Configuring ZENworks Reporting Server to Point to the New MS SQL Database on Linux

1 Ensure that the data has been moved to point to the new MS SQL database as explained in Section 29.6.2, "Configuring the ZENworks Server to Point to the New MS SQL Database," on page 293.

2 Edit the `/opt/novell/zenworks/share/boe/bobje/odbc.ini` file to set the value of *IPaddress* to the IP address and port number of MSDB2.

3 Save the file.

4 Run the `novell-zenworks-configure -c UpdateBOE` command.

ZENworks Reporting Server now points to the new database.

29.7 Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database

If you move the data from one Oracle database to another Oracle database, the Windows or Linux ZENworks Server must be configured to point to the new Oracle database.

The following sections provide detailed information:

29.7.1 Preparing to Move the Data

Before configuring the server to point the new Oracle database, do the following:

- Make sure that the ZENworks Server is configured to an Oracle database. The database can be installed on the ZENworks Server or on a different device. Assume that the device that currently host the Oracle database is called ORDB1.
- Make sure that you have another Windows device with an Oracle database installed with the same database credentials as the ORDB1. Assume that this device is called ORDB2. For more information on how to install an Oracle database, see "Installing an External ZENworks Database" in the *ZENworks 10 Asset Management Installation Guide*.
- Move the data from ORDB1 to ORDB2. For more information about moving the data, see the Oracle database documentation.
- Stop all the ZENworks Services on all the ZENworks Servers in the Management Zone.
    - **On Windows:** Do the following
        1. Execute the following command at the server prompt:

           `novell-zenworks-configure -c Start`
        2. Specify the number next to the Stop action, then press Enter.
    - **On Linux:** Do the following:
        1. Execute the following command at the server prompt:

           `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`
        2. Specify the number next to the Stop action, then press Enter.

29.7.2 Configuring the ZENworks Server to Point to the New Oracle Database

To configure the ZENworks Server to point to the new Oracle database (ORDB2), perform the following tasks on the ZENworks Server:

1 Edit `zdm.xml` (located in `ZENworks_installation_path\conf\datamodel` on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux) to do the following:

  ◆ Make sure that the value of the `Port` entry key is the port number on which the Oracle database is running.

  ◆ Set the value of the `Server` entry key to the IP address of the ORDB2 device.

  ◆ Set the value of the `Database` entry key to net service name of the Oracle database installed on the ORDB2 device.

2 Start all the ZENworks Services on all the ZENworks Servers in the Management Zone.

  ◆ **On Windows:** Do the following

    1. Execute the following command at the server prompt:

       `novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

  ◆ **On Linux:** Do the following:

    1. Execute the following command at the server prompt:

       `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

    2. Specify the number next to the `Start` action, then press Enter.

ZENworks Server should now point to the new database.

29.7.3 Configuring ZENworks Reporting Server to Point to the New Oracle Database

If you have installed ZENworks Reporting Server, do the following to point ZENworks Reporting Server to the new database (ORDB2). The following steps are applicable for both Windows and Linux platforms.

1 (Conditional) If you have installed ZENworks Reporting Server, continue with .

2 Launch the Oracle Net Configuration Assistant Welcome Window:

  ◆ On Windows, navigate to `%ORACLE_HOME%/bin` directory, then double-click the *netca.bat* file.

  ◆ On Linux, navigate to the `$ORACLE_HOME/bin` directory, then double-click the `netca` executable or run the `netca` executable by using the `vi $ORACLE_HOME/bin/./netca` command.

3 Select *Local Net Service Name configuration*, then click *Next*.

4 Select *Reconfigure*, then click *Next*.

5 Select the net service name that you want to reconfigure, then click *Next*.

6 Specify the service name of ORDB2, then click *Next*.

7 Select *TCP* as the protocol, then click *Next*.

8 Specify the hostname of the device where the ORDB2 database is installed, then click *Next*.

9 Select *Yes, perform a test* option to verify the connection to the ORDB2, then click *Next*.

10 Click *Change Login*.

11 In the Change Login window that is displayed, specify the username and password to connect to ORDB2.

12 Click *OK*.

A message is displayed indicating that the connection to ORDB2 is successful.

13 Click *Next*.

14 Specify the service name that you provided in Step 6 as the net service name, then click *Next*.

15 Click *Next* twice.

16 On the Oracle Net Configuration Assistant Welcome page that is displayed, click Finish to complete reconfiguring the new database ORDB2.

17 Run the `novell-zenworks-configure -c UpdateBOE` command.

Database Management - Best Practices, Tips, Troubleshooting

30

This sections includes some tips and best practices for Sybase database:

30.1 Database Best Practices

This documentation provides instructions to rebuild the Sybase database by using the DBISQL utility. You can choose to rebuild and validate the database by using any other utility that is recommended in the Sybase SQL Anywhere documentation.

30.1.1 Rebuilding the Sybase Database

If your ZENworks database is an embedded or external Sybase database, you should rebuild the database so that it runs on the latest version of the Sybase database engine.

1 Make sure that you have archived your database credentials.

To archive the credentials of an external Sybase database, contact your database administrator.

To archive the credentials of an embedded or external OEM Sybase database, perform the following tasks on the database server:

  1a Make sure that the database service is running.

    On Windows: In the Windows Services, make sure that the status of *Novell ZENworks Embedded Datastore* is *Started*.

    On Linux: At the console prompt, enter `/etc/init.d/sybase-asa status` to verify the status of the database. If the database is not running, start the database service by running the `/etc/init.d/./sybase-asa start` command.

  1b Obtain the Sybase database credentias by running the `zman dgc` command.

  1c Provide the credentials of the ZENworks administrator when prompted.

  1d Copy and save the database username and password in to a text file.

2 Stop the Novell ZENworks Embedded Datastore service, if it is running.

- **On Windows:** Do the following:
   1. From the Windows desktop *Start* menu, click *Settings > Control Panel*.
   2. Double-click *Administrative Tools > Services*.
   3. Right-click the *Novell ZENworks Embedded Datastore* service, then click *Stop*, or select the *Novell ZENworks Embedded Datastore* service, then click ▪ on the toolbar.
- **On Linux:** At the console prompt, enter `/etc/init.d/sybase-asa stop`.

3 Stop all th

 ♦ **On**

  1.

  2.

 ♦ **On I**

  1.

  2.

4 At the con

%ZENWORK

Linux.

5 Take a rel

For detail

Sybase da

Database,

files of the

Database,

6 Start the N

 ♦ **On**

  1.

  2.

  3.

    on the toolbar.

 ♦ **On Linux:** At the console prompt, enter `/etc/init.d/./sybase-asa start`.

7 (Conditional) If your database is installed on Linux, run the following script file:

```
source /opt/novell/zenworks/share/sybase/bin32/sa_config.sh
```

8 Ensure that the database authentication has been set up by verifying that the `database_authentication` attribute in the `saopts.sql` file has been configured.

The `saopts.sql` file is located in the `%ZENWORKS_HOME%\share\asa\scripts\` directory on Windows, and in the `/opt/novell/zenworks/share/sybase/scripts/` directory on Linux. The `database_authentication` attribute is located in the following entry in the `saopts.sql` file:

```
if not exists( select * from SYS.SYSOPTION
 where ucase( "option" )  = ucase( 'database_authentication' ) ) then
    set option PUBLIC.database_authentication = <value>;
end if
go
```

If the value of `set option PUBLIC.database_authentication` is empty, continue with Step 8a to launch the DBISQL utility and to configure the database authentication; else skip to Step 9.

8a Launch the DBISQL utility.

> **8a1** At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.
>
> **8a2** Enter the `dbisql` command.
>
> **8a3** In the *Identification* tab, specify the database credentials.
>
> **8a4** Click the *Database* tab, then specify the name of database service that is currently running.
>
> **8a5** Click *OK*.

8b In the *SQL Statements* section, specify the following query:

```
select setting
from sysoptions
    where "option" like 'database%' >># output_filename
```

8c Click *Execute SQL Statement(s)*.

The results of the query are written to the output file that you specify in the query.

8d Copy the result of the query from the output file, and paste it as the value of the `database_authentication` attribute in the `saopts.sql` file. The `saopts.sql` file is located in the `%zenworks_home%\share\asa\scripts\` directory on Windows, and in the `/opt/novell/zenworks/share/sybase/scripts/` directory on Linux.

The `database_authentication` attribute is located in the following entry in the `saopts.sql` file:

```
if not exists( select * from SYS.SYSOPTION
 where ucase( "option" )  = ucase( 'database_authentication' ) ) then
    set option PUBLIC.database_authentication =
<output_of_the_query_run_in_Step_8b>;
end if
go
```

9 Stop the Novell ZENworks Embedded Datastore service.

  - **For the Embedded Database:** Stop all the ZENworks services, including the Novell ZENworks Embedded Datastore service:

    1. At the console prompt, run the `novell-zenworks-configure -c Start` command.

    2. Type the option number corresponding to Stop.

    3. Press Enter twice.

  - **For the External Database:** Stop the Novell ZENworks Embedded Datastore Service by stopping the Windows Services manager on Windows, or by running the `/etc/init.d/sybase-asa stop` command on Linux.

10 At the console prompt of the database server, run the following command to start the database service:

On Windows: `dbeng10 %ZENWORKS_HOME%\database\zenworks_ZONE_NAME.db -n rebuild`

On Linux: `dbeng10 /var/opt/novell/zenworks/database/zenworks_ZONE_NAME.db -n rebuild`

11 Create a temporary directory with the name as `unload` within `c:\dbreload\` on Windows or within `/tmp/dbreload/` on Linux.

12 Run the unload command.

   12a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.

   12b Run the appropriate command:

   On Windows: `dbunload -c "UID=zenadmin;PWD=database_password;ENG=rebuild" -an c:\dbreload\unload\zenworks_<management_zone_name>.db`

   On Linux: `dbunload -c "UID=zenadmin;PWD=database_password;ENG=rebuild" -an /tmp/dbreload/unload/zenworks_<management_zone_name>.db`

13 After the database rebuild has been successfully completed, take a reliable backup of the newly built database. The database is located in the `c:\dbreload\unload` directory on Windows and in the `/tmp/dbreload/unload` directory on Linux.

   If you encounter any issues during the rebuild process, contact Novell Support (http://www.novell.com/support).

14 Stop the Novell ZENworks Embedded Datastore service by using the dbeng10 command:

   ◆ **On Windows:** Right-click the *Rebuild* icon located in Windows taskbar, then click *Shutdown*.

   ◆ **On Linux:** At the console prompt, enter `q`.

15 Overwrite the database and applicable log file in the database directory with the new ones located in the `unload` directory (`zenworks_management_zone_name.*`).

   The `unload` directory is located in `c:\dbreload\` on Windows or in `/tmp/dbreload/` on Linux.

16 Start the Novell ZENworks Embedded Datastore service.

   ◆ **For the Embedded Database:** Start all the ZENworks services, including the Novell ZENworks Embedded Datastore service:

      1. At the console prompt, run the `novell-zenworks-configure -c Start` command.

      2. Type the option number corresponding to Start.

      3. Press Enter twice.

   ◆ **For the External Database:** Start the Novell ZENworks Embedded Datastore service in the Services window on Windows, or run the `/etc/init.d/sybase-asa start` command on Linux.

17 Start all the ZENworks Services on the all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         `novell-zenworks-configure -c Start`

      2. Specify the number next to the `Start` action, then press Enter.

- **On Linux:** Do the following:

   1. Execute the following command at the server prompt:

      `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

   2. Specify the number next to the `Start` action, then press Enter.

18 Take a backup of the newly created database on a regular basis (daily or weekly).

30.2 Database Tips

30.2.1 Changing the Backup Location and Schedule of the Embedded Sybase Database Subsequent to the Initial Backup

Review the following sections:

Changing the Backup Location of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup

To change the backup location of the embedded Sybase SQL Anywhere database subsequent to its initial backup:

1 Delete the existing database backup schedule by executing the following command at the Primary Server command prompt:

`zman db current_database_backup_location DropSchedule.sql`

`Dropschedule.sql` is located by default in the `ZENworks_Installation_directory:\Novell\Zenworks\share\zman\samples\datab ase` directory on a Windows server, and in the `/opt/novell/zenworks/share/zman/ samples/database` directory on a Linux server.

2 Enter the following command to back up the database to a new location:

`zman database-backup complete_path_of_the_new_database_backup_directory complete_path_of_the_database_backup_schedule_file -d SQL_function_call`

For example, to back up the database to the `c:\dbbackup\newdbbackups` directory on a Windows server according to the database backup schedule specified in the `c:\backUpschedule.sql`, enter the following command:

```
zman database-backup c:\dbbackup\newdbbackups c:\backUpSchedule.sql -d
SQL_function_call
```

For more information about this command, view the zman man page (man zman) on the device, or see zman(1) in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup

To change the backup schedule of the embedded Sybase SQL Anywhere database subsequent to its initial backup:

1 Create a schedule file with the Alter Event content:

```
ALTER EVENT backup_schedule_name
```

```
SCHEDULE
```

```
START TIME specify_the_schedule
```

For example, you could use the `Alterschedule.sql` file to back up the database at a 11:00 p.m. on Monday, Tuesday, and Wednesday of every week as follows:

```
ALTER EVENT ZENDBBackup
```

```
SCHEDULE
```

```
START TIME '11:00 PM'
ON ('Monday', 'Tuesday', 'Wednesday')
```

A sample `Alterschedule.sql` file is available in the `ZENworks_Installation_directory:\Novell\Zenworks\share\zman\samples\datab ase` directory on a Windows server, and in the `/opt/novell/zenworks/share/zman/ samples/database` directory on a Linux server.

2 Enter the following command to back up the database according to the new schedule:

```
zman database-backup complete_path_of_the_database_backup_directory
complete_path_of_the_modified_database_backup_schedule_file -d
SQL_function_call
```

For example, to back up the database to the `c:\dbbackup\` directory on a Windows server according to the database backup schedule specified in the `c:\AlterSchedule.sql`, enter the following command:

```
zman database-backup c:\dbbackup\ c:\AlterSchedule.sql -d
SQL_function_call
```

For more information about this command, view the zman man page (man zman) on the device, or see zman(1) in the *ZENworks 10 Asset Management Command Line Utilities Reference*.

30.2.2 Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup

To change the backup location and the backup schedule of the external Sybase database subsequent to its initial backup, perform the following tasks on the device that has the external Sybase database installed and running:

1 Launch the DBISQL utility:

    1a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\win32` directory on Windows or to the `/opt/novell/zenworks/share/sybase/bin32s` directory on Linux.

    1b Enter the `dbisql` command.

    1c In the *Identification* tab, specify the database credentials.

    1d Click the *Database* tab, then specify the name of database service that is currently running.

    1e Click *OK*.

2 Change the database backup schedule and the backup location as desired.

You can use the same SQL query to change the database backup schedule and the backup location. You can change the backup schedule and the location at the same time or at a different time.

```
ALTER EVENT
name_of_the_existing_backup_schedule_event_containing_the_database_backup
_schedule_or_location_that_you_want_to_change

SCHEDULE

new_database_backup_schedule or existing_backup_schedule

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY
'complete_path_of_the_existing_database_backup_location or
complete_path_of new_database_backup_location'

TRANSACTION LOG TRUNCATE

END;
```

If you want to back up the database to a directory on Windows, you must use \\ (double backslash) as the delimiter while specifying the database backup directory path

For example, assume that you have database backup event, `zendbbackup`, that locally backs up the database to `c:\dbackup` at 1:00 a.m. every day. If you want to change the database backup schedule or location, review the following:

- If you want to back up the database at 11:00 p.m. on Monday, Wednesday, and Friday of every week, change the database backup schedule in the `zendbbackup` event by executing the following query in the DBISQL utility:

```
ALTER EVENT zendbbackup

SCHEDULE

'11:00 PM' ON ('Monday', 'Wednesday', 'Friday')

HANDLER

BEGIN
```

```
BACKUP DATABASE DIRECTORY 'c:\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

* If you want to back up the database to a new location, such as e:\zendb\dbbackup, change the database backup location in the zendbbackup event by executing the following query in the DBISQL utility:

```
ALTER EVENT zendbbackup

SCHEDULE

'1:00 AM' EVERY 24 HOURS

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY 'e:\\zendb\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

* If you want to back up the database at 2:00 a.m. on the first, second, and third day on the month to a new location, e:\zendb\dbbackup, change the database backup schedule and location in the zendbbackup event by executing the following query in the DBISQL utility:

```
ALTER EVENT zendbbackup

SCHEDULE

'2:00 AM' EVERY 24 HOURS ON (1,2,3)

HANDLER

BEGIN

BACKUP DATABASE DIRECTORY 'e:\\zendb\\dbbackup'

TRANSACTION LOG TRUNCATE

END;
```

30.2.3 Reverting to the ZENworks Sybase Database from the ZENworks Oracle Database

ZENworks 10 Asset Management allows you migrate the data from an internal or external Sybase database to an Oracle database installed on a device that does not have the ZENworks 10 Asset Management installed. You can revert to using ZENworks Sybase database at a later time if you have retained the ZENworks Sybase database files after migrating the data to Oracle.

To revert to using ZENworks Sybase database, perform the following tasks:

1 On the device where you run the migration utility, rename the following files:

zdm.xml.bak to zdm.xml

dmaccounts.properties.bak to dmaccounts.properties

dmmappings.properties.bak to dmmappings.properties

The files are located in the *ZENworks_installation_path*\conf\datamodel directory on Windows and in the /etc/opt/novell/zenworks/datamodel directory on Linux.

2 Restart all the ZENworks Services on all the ZENworks Servers in the Management Zone.

   ◆ **On Windows:** Do the following

      1. Execute the following command at the server prompt:

         `novell-zenworks-configure -c Start`

      2. Enter the number next to the `Restart` action.

   ◆ **On Linux:** Do the following:

      1. Execute the following command at the server prompt:

         `/opt/novell/zenworks/bin/novell-zenworks-configure -c Start`

      2. Enter the number next to the `Restart` action.

30.2.4 Identifying the EBF Version of Sybase Database Server

To know the version of the EBF that is installed and running on the Sybase database server, run the `dblocate` utility. The utility is located in the `%ZENWORKS_HOME%\share\ASA\win32` directory on a Windows database server and in the `/opt/novell/zenworks/share/sybase/bin32s` directory on a Linux database server.

30.3 Troubleshooting Database Migration

30.3.1 Troubleshooting a Java Heap Space Exception

If you encounter a Java Heap Space exception during the database migration because of low memory:

1 Edit the *ZENworks_installation_path*\bin\novell-zenworks-configure.bat file on Windows or /opt/novell/zenworks/bin/novell-zenworks-configure on Linux to change the heap space value in the following line, depending upon the RAM of the device where the migration utility is running:

```
"%JAVA_HOME%\bin\java" -Djava.library.path=%ZENLIB% -cp "%MYCP%"
%DEBUG_OPTS% %JAVA_OPTS% -Xmx128m
com.novell.zenworks.configure.ConfigureLoader %CONFIG_OPTS%
```

The heap space value is represented in megabytes (MB) within `-Xmx128m`. By default, it is 128.

For example, if the RAM of the device is 512 MB, then the line in the `novell-zenworks-configure.bat` file can be updated as follows:

```
"%JAVA_HOME%\bin\java" -Djava.library.path=%ZENLIB% -cp "%MYCP%"
%DEBUG_OPTS% %JAVA_OPTS% -Xmx512m
com.novell.zenworks.configure.ConfigureLoader %CONFIG_OPTS%
```

IMPORTANT: The heap space value must be either equivalent to or less than the RAM of the device.

2 At the console prompt, run the `ZENworks_installation_path\bin\novell-zenworks-configure.bat` file on Windows or `/opt/novell/zenworks/bin/novell-zenworks-configure` on Linux.

3 Follow the prompts.

When you are prompted to enter the location of the file required for resuming the migration, enter the the complete path of `DBMigration.xml`. The file is located in the `ZENworks_installtion_path\bin` directory on Windows, and in the `/opt/novell/zenworks/bin` directory on Linux.

The XML file contains a list of tables and a flag indicating whether the table was successfully migrated or not. When the database migration resumes, only the tables with flag value set to False are migrated.

30.3.2 Troubleshooting an Oracle Database Crash

If the Oracle database crashes during the database migration:

1 At the console prompt, run the `ZENworks_installation_path\bin\novell-zenworks-configure.bat` file on Windows or `/opt/novell/zenworks/bin/novell-zenworks-configure` on Linux.

2 Follow the prompts.

When you are prompted to enter the location of the file required for resuming the migration, enter the the complete path of `DBMigration.xml`. The file is located in the `ZENworks_installtion_path\bin` directory on Windows, and in the `/opt/novell/zenworks/bin` directory on Linux.

The XML file contains a list of tables and a flag indicating whether the table was successfully migrated or not. When the database migration resumes, only the tables with flag value set to False are migrated.

IMPORTANT: Do not edit the contents of `DBMigration.xml`.

30.3.3 Troubleshooting an Oracle Tablespace Issue

If the Oracle USERS tablespace does not have sufficient space to create and store the ZENworks database schema, the database migration fails with the following error messages while trying to create the tables:

```
SEVERE: Terminating the database migration...
SEVERE: An error has occurred while migrating the database.
```

To resolve this issue, the Oracle database administrator must increase the size of the USERS tablespace. Ensure that the tablespace has a minimum of 100 MB to create ZENworks database schema without any data in it and an appropriate additional space depending upon the size of the database to be migrated.

30.3.4 Troubleshooting the Database Migration Failure Issue

If the NLS_CHARACTERSET parameter is not set to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter is not set to AL16UTF16, the database migration fails with the following error messages:

```
Failed to run the sql script: localization-updater.sql,
message:Failed to execute the SQL command: insert into
zLocalizedMessage(messageid,lang,messagestr)
values('POLICYHANDLERS.EPE.INVALID_VALUE_FORMAT','fr','La stratégie {0} n''a
pas pu être appliquée du fait que la valeur de la variable "{1}" n''est pas
dans un format valide.'),
message:ORA-00600: internal error code, arguments: [ktfbbsearch-7], [8], [],
[], [], [], [], []
```

To resolve this issue, set the NLS_CHARACTERSET parameter to AL32UTF8 and the NLS_NCHAR_CHARACTERSET parameter to AL16UTF16. To ensure that the character set parameters are configured with the recommended values, run the following query at the database prompt:

```
select parameter, value from nls_database_parameters where parameter like
'%CHARACTERSET%';
```

30.3.5 Troubleshooting the Database Migration by Using An Existing User Schema

If you choose to migrate the database by using an existing user schema, the database migration utility creates the ZENworks database but it might fail to migrate the data.

To resolve this issue:

1 Make sure that the ZENworks tables, views, and user sequence are deleted from the newly created ZENworks database by the database administrator. Later on, clear the `user_recyclebin` database table.

2 Start the database migration again by using the same user schema.

To start the migration from an internal Sybase to the Oracle database, see "Migrating the Data from the Internal Sybase Database to an Oracle Database" on page 265. To start the migration from an external Sybase to the Oracle database, see "Migrating the Data from the External Sybase Database to an Oracle Database" on page 289.

Zone Administration

VIII

This section contains information about Management Zone settings that let you control a wide range of functionality for your Zone.

Management Zone Settings

<div align="right">

31

</div>

The Management Zone settings enable you to control a wide range of functionality for your Zone. There are Device Management settings that let you control how often devices access a ZENworks Server for refreshed information, how often dynamic groups are refreshed, and what levels of messages (informational, warning, or error) are logged by the ZENworks Adaptive Agent. There are Inventory settings, Discovery and Deployment settings, and much more.

The configuration settings are grouped into categories:

- Section 31.1, "Accessing Configuration Settings," on page 313
- Section 31.2, "Device Management Settings," on page 316
- Section 31.3, "Discovery and Deployment Settings," on page 317
- Section 31.4, "Event and Messaging Settings," on page 318
- Section 31.5, "Infrastructure Management Settings," on page 318
- Section 31.6, "Inventory Settings," on page 318
- Section 31.7, "Reporting Services Settings," on page 319
- Section 31.8, "Asset Management Settings," on page 320

31.1 Accessing Configuration Settings

Management Zone settings that apply to devices are inherited by all devices in the zone. You can override zone settings by configuring them on device folders or on individual devices. This allows you to establish zone settings that apply to the largest number of devices and then, as necessary, override the settings on folders and devices.

By default, your zone settings are preconfigured with values that provide common functionality. You can, however, change the settings to best adapt them to the behavior you need in your environment.

- Section 31.1.1, "Modifying Configuration Settings at the Zone," on page 313
- Section 31.1.2, "Modifying Configuration Settings on a Folder," on page 314
- Section 31.1.3, "Modifying Configuration Settings on a Device," on page 315

31.1.1 Modifying Configuration Settings at the Zone

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

2 In the Management Zone Settings panel, click the settings category (*Device Management*, *Discovery and Deployment*, *Event and Messaging*, and so forth) whose settings you want to modify.

3 Click the setting to display its details page.

4 Modify the setting as desired.

For information about the settings, click the *Help* button in ZENworks Control Center or see the following sections:

- ◆ "Device Management Settings" on page 316
- ◆ "Discovery and Deployment Settings" on page 317
- ◆ "Event and Messaging Settings" on page 318
- ◆ "Infrastructure Management Settings" on page 318
- ◆ "Inventory Settings" on page 318
- ◆ "Reporting Services Settings" on page 319
- ◆ "Asset Management Settings" on page 320

5 When you have finished modifying the setting, click *OK* (or *Apply*) to save your changes.

If the configuration setting applies to devices, the setting is inherited by all devices in the zone unless the setting is overridden at a folder level or a device level.

31.1.2 Modifying Configuration Settings on a Folder

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

2 In the Devices panel (on the *Managed* tab), browse for the folder whose settings you want to modify.

3 When you find the folder, click *Details* next to the folder name to display the folder's details.

4 Click the *Settings* tab.

5 In the Settings panel, click the settings category (, *Device Management*, *Infrastructure Management*, and so forth) whose settings you want to modify.

6 Click the setting to display its details page.

7 Modify the setting as desired.

For information about the setting, click the *Help* button in ZENworks Control Center or see the following sections:

- ◆ "Device Management Settings" on page 316
- ◆ "Discovery and Deployment Settings" on page 317
- ◆ "Event and Messaging Settings" on page 318
- ◆ "Infrastructure Management Settings" on page 318
- ◆ "Inventory Settings" on page 318
- ◆ "Reporting Services Settings" on page 319
- ◆ "Asset Management Settings" on page 320

8 When you have finished modifying the setting, click *OK* (or *Apply*) to save your changes.

The configuration setting is inherited by all devices in the folder, including any devices contained in subfolders, unless the setting is overridden on a subfolder or individual device.

31.1.3 Modifying Configuration Settings on a Device

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

2 In the Devices panel (on the *Managed* tab), browse for the device whose settings you want to modify.

3 When you find the device, click the device name to display the its details.

4 Click the *Settings* tab.

5 In the Settings panel, click the settings category (*Device Management*, *Infrastructure Management*, and so forth) whose settings you want to modify.

6 Click the setting to display its details page.

7 Modify the setting as desired.

For information about the setting, click the *Help* button in ZENworks Control Center or see the following sections:

- ◆ "Device Management Settings" on page 316
- ◆ "Discovery and Deployment Settings" on page 317
- ◆ "Event and Messaging Settings" on page 318
- ◆ "Infrastructure Management Settings" on page 318
- ◆ "Inventory Settings" on page 318
- ◆ "Reporting Services Settings" on page 319
- ◆ "Asset Management Settings" on page 320

8 When you have finished modifying the setting, click *OK* (or *Apply*) to save your changes.

31.2 Device Management Settings

The Device Management section contains the following settings:

Local Device Logging: Configure logging of messages to a managed device's local drive. You can determine what severity level messages are logged and when the log file is backed up. You can also determine what severity level messages are sent to the ZENworks server for viewing in ZENworks Control Center. For more information, see Local Device Logging (../../resources/help/settings_syslocallogging.html).

Device Refresh Schedule: Specify how often a device contacts a ZENworks Server to update information. You can also specify what to do with a device when it has not contacted a ZENworks Server within a certain number of days. For more information, see Device Refresh Schedule (../../resources/help/settings_sysrefreshsched.html).

ZENworks Agent: Configure uninstall and caching settings for the ZENworks Adaptive Agent as well as enable or disable specific Adaptive Agent modules. For more information, see ZENworks Agent (../../resources/help/settings_agent.html).

Registration: Control the settings used when registering devices, including how registered devices are named, whether registration rules are enabled, and whether device objects in ZENworks Control Center can be renamed as they update their registration information. For more information, see Registration (../../resources/help/settings_registration.html).

System Variables: Define variables that can be used to replace paths, names, and so forth as you enter information in ZENworks Control Center. For more information, see System Variables (../../ resources/help/settings_systemvariables.html).

Primary User: Determine how and when a device's primary user is calculated. For more information, see Primary User (../../resources/help/settings_primaryuser.html).

Primary Workstation: Determine how and when a device's primary workstation is calculated. You can also disable the calculation by selecting the *None (do not calculate -- affects both Primary Workstation and Primary User)* option. For more information, see Primary Workstation (../../ resources/help/settings_primaryws.html).

Dynamic Group Refresh Schedule: Determine how often a dynamic group's criteria are applied to devices in order to update membership in the group. Membership in a dynamic group is determined by applying the dynamic group's criteria to devices. If a device meets the criteria, it is added to the group; you cannot manually add devices to a dynamic group or remove them from a dynamic group. For more information, see Dynamic Group Refresh Schedule (../../resources/help/settings_dynamicgroupschedule.html).

Wake-on-LAN: Configure the number of retry attempts to wake up a device and the time interval between the retry attempts. For more information, see Wake-on-LAN (../../resources/help/settings_wakeonlan.html).

31.3 Discovery and Deployment Settings

The Discovery and Deployment section contains the following settings:

Advertised Discovery Settings: Specify how often you want your ZENworks system to attempt to discover devices on your network that have the ZENworks pre-agent installed. For more information, see Advertised Discovery Settings (../../resources/help/settings_discovery_advertised.html).

Discovery: Control the settings used during the discovery processes, including the maximum number of discovery requests that can be running at one time and the technologies to use for the discovery. You can also specify IP and SNMP settings used by the WMI (Windows Management Instrumentation) and SNMP discovery technologies. For more information, see Discovery (../../ resources/help/settings_discoverysettings.html).

Windows Proxy: Specify a managed Windows device in your zone to perform discovery and deployment tasks in place of a ZENworks Server. This is designed primarily to enable ZENworks Servers running on Linux to offload discovery tasks that use Windows-specific discovery technologies such as WMI and WinAPI and deployment tasks that involve Windows managed devices. For more information, see Windows Proxy (../../resources/help/settings_winproxysettings.html).

31.4 Event and Messaging Settings

The Event and Messaging section contains the following settings:

Centralized Message Logging: Configure the settings related to message logging performed by the Primary Server, including automatic message cleanup, e-mail notification, SNMP traps, and UDP forwarding. For more information, see Centralized Message Logging (../../resources/help/settings_syscentralizedlogging.html).

SMTP Settings: Configure the SMTP server for sending the e-mail notifications to ZENworks administrators. For more information, see SMTP Settings (../../resources/help/settings_smtpsettings.html).

31.5 Infrastructure Management Settings

The Infrastructure Management section contains the following settings:

Closest Server Default Rule: Define the rule that is used by a device to determine the closest collection, content, and configuration servers when no Closest Server rules have been defined or when none apply. This rule is simply a listing of the servers in the order you want devices to contact them. You cannot add or remove servers from the lists. For more information, see Closest Server Default Rule (../../resources/help/settings_closestserverdefaultrule.html).

Closest Server Rules: Create rules that are used to determine which servers a device contacts for the collection, content, and configuration functions, if your ZENworks Management Zone includes more than one server. For more information, see Closest Server Rules (../../resources/help/settings_closestserverrules.html).

HTTP Proxy Settings: Define proxy servers you want to use. A proxy server lets a device connect indirectly to a ZENworks Server through the proxy server. The device's ZENworks Adaptive Agent connects to the proxy server, then requests resources from a ZENworks Server. The proxy provides the resource either by connecting to the ZENworks Server or by serving it from a cache. For more information, see HTTP Proxy Settings (../../resources/help/settings_httpproxy.html).

System Update Settings: Configure how you want to use the System Updates feature, including how often to check for updates, specifying a download schedule, configuring e-mail notifications, and more. For more information, see System Update Settings (../../resources/help/settings_systemupdate.html).

ZENworks News Settings: Configures the server and the schedule for downloading the ZENworks News. For more information, see ZENworks News Settings (../../resources/help/settings_zenworksnews.html).

31.6 Inventory Settings

The Inventory section contains the following settings:

Inventory: Configure inventory scanning settings, including on-demand scans, first scans, and recurring scans. You can also specify directories to skip when performing scans and identify software applications that are not contained in the ZENworks Knowledgebase. For more information, see Inventory (../../resources/help/settings_sysinventory.html).

Inventory Schedule: Specify when to run an inventory scan, including specifying that scans do not run automatically or specifying a date-specific, recurring, or event-driven scan. For more information, see Inventory Schedule (../../resources/help/settings_sysinventoryschedule.html).

Collection Data Form: Configure which demographic data to collect for a device or devices, such as a user's name or telephone, which department the user belongs to, and so on. For more information, see Collection Data Form (../../resources/help/settings_sysinventorycollectwizard.html).

Collection Data Form Schedule: Configure how you send out the Collection Data Form. You can schedule it as part of a regular inventory scan, you can use a Device Quick Task, or you can use the Collection Data Form Schedule. For more information, see Collection Data Form Schedule (../../resources/help/settings_sysinventorywizardschedule.html).

Inventory Only: Configure inventory scan settings for devices in the zone that don't have the ZENworks Adaptive Agent installed but do have the Inventory Module installed. This type of scan is useful for devices running Windows NT, Windows 95, Windows 98, Windows Me, NetWare, and Mac OS X. For more information, see Inventory Only (../../resources/help/settings_sysumi.html).

Inventory Only Schedule: Configure when to run an Inventory Only scan. For more information, see Inventory Only Schedule (../../resources/help/settings_sysumischedule.html).

Inventory Only Reconciliation: Control whether and how new workstations are reconciled to avoid the possibility of duplicates in the database. When a scan is made of a workstation that is new to the Management Zone, it is assigned an identifier. If the identifier is lost, such as by a disk crash, it is assigned a new identifier during the next scan. Reconciliation allows you to check whether the workstation is already in the database. If it is, the identifier in the database is changed to match the new identifier. For more information, see Inventory Only Reconciliation (../../resources/help/settings_sysinventoryreconcile.html).

31.7 Reporting Services Settings

The Reporting Services section contains the following settings:

E-mail Notification Settings: Configure the ZENworks Reporting Server for sending e-mail notifications to the ZENworks administrator. For more information, see E-mail Notification Settings (../../resources/help/cfg_mzset_reptsvr_set.html).

Folder Sync Schedule: Define the refresh interval when the Custom Report folders that are created in the ZENworks Reporting Server InfoView must synchronize with the ZENworks Control Center. For more information, see Folder Sync Schedule (../../resources/help/cfg_report_foldersync.html).

Reset the Passphrase of the ZENworks Reporting Server: Allow the user to reset the Passphrase of the ZENworks Reporting Server. For more information, see Reset the Passphrase (../../resources/help/cfg_report_resetpassphrase.html).

File Location Notification Settings: Specify the destination directory for the report instances on the ZENworks Reporting Server or on any other remote server. For more information, see File Location Notification Settings (../../resources/help/cfg_report_filelocsettings.html).

FTP Server Notification Settings: Specify the destination on the FTP server where you want to transfer the reporting instances. For more information, see FTP Server Notification Settings (../../resources/help/cfg_report_ftpsrvrsettings.html).

31.8 Asset Management Settings

The Asset Management section contains the following settings:

Reports: Configure report settings for Asset Management. For more information, see Reports (../../ resources/help/settings_sysamreport.html).

Compliance: Set the time of day that license compliance data is refreshed. For more information, see Compliance (../../resources/help/settings_sysamcompliance.html).

Usage Monitoring: Enable software usage monitoring. For more information, see Usage Monitoring (../../resources/help/am_usagemonitor.html).

Usage Display: Configure whether or not usage data is displayed on License Management pages (Asset Management > License Management tab) in the ZENworks Control Center. For more information, see Usage Display (../../resources/help/am_usagedisplay.html).

Message Logging

IX

This section includes information about Message Logger features and procedures to help you configure and maintain your Novell ZENworks system.

Overview

32

The Message Logger component of Novell ZENworks 10 Asset Management lets the other ZENworks components such as zenloader, webservices, and ZENworks Management Daemon (ZMD) log messages to different output targets. The output targets includes the system log, local log, database, SMTP, SNMP trap, and UDP.

The following sections provide additional information on the Message Logger component:

* Section 32.1, "Functionalities of Message Logger," on page 323
* Section 32.2, "Message Severity," on page 323
* Section 32.3, "Message Format," on page 324

32.1 Functionalities of Message Logger

Message Logger performs the following functions:

* Writes messages to local log files.
* Writes messages to a system log or event log.
* Writes messages to the Management console.
* Sends messages to the Management server.
* Sends messages as SMTP mail to SMTP servers from the Primary Server.
* Sends messages as SNMP traps to remote or local machines from the Primary Server.
* Sends messages as UDP packets to UDP destinations.
* Writes messages to the ZENworks database.
* Automatically purges database entries from the ZENworks database.
* Automatically acknowledges the messages in the ZENworks database.

32.2 Message Severity

A message is an event that is generated by different components and modules. These events can be exceptions such as errors, warnings, information to a user, or a debug statement to debug a module.

Messages are classified based on the following severity levels:

Error: Indicates that an action cannot be completed because of a user or system error. These messages are critical and require immediate attention from an administrator.

Warning: Indicates an exception condition. These messages might not be an error but can cause problems if not resolved. These messages do not require immediate attention from an administrator.

Information: Provides feedback about something that happened in the product or system that is important and informative for an administrator.

Debug: Provides debug information to troubleshoot and solve problems that might occur. The debug messages are stored only in the local file.

32.3 Message Format

Messages are logged in different formats depending on the output targets. For more information on message formats see, Section 34.1, "Understanding Message Formats," on page 331.

Configuring Message Logger Settings

33

The following sections provide information on configuring the settings of the Message Logger component of Novell ZENworks 10 Asset Management.

33.1 Configuring the Message Logger Settings at the Zone Level

The following sections contain information to help you configure the settings in the Management Zone to enable message logging:

33.1.1 Local Device Logging

In ZENworks Control Center, the Local Device Logging page lets you configure the message logging to a local drive and the system log file of the managed device.

1 In ZENworks Control Center, click *Configuration*.

2 In the Management Zone Settings panel, click *Device Management*, then click *Local Device Logging*.

3 Configure the following options in the Local File panel:

Log Message to a Local File if Severity Is: Choose from one of the following:

- **Error:** Stores messages with a severity of Error.

- **Warning and Above:** Stores messages with a severity of Warning and Error.

- **Information and Above:** Stores messages with a severity of Information, Warning, and Error.

- **Debug and Above:** Stores messages with a severity of Debug, Information, Warning, and Error.

If you need to troubleshoot a ZENworks Adaptive Agent issue on an individual device, you can change the severity setting so that additional information is logged. On the device, double-click the ▣ icon in the notification area, click *Logging* in the left navigation pane, then select an option from the *Log Messages if Severity Is* drop-down list.

Rolling Based on Size: Closes the current log file and starts a new file based on the file size:

- ◆ **Limit File Size to:** Specify the maximum size of the log file, in either kilobytes (KB) or megabytes (MB). The log file is closed after the size of the file reaches the specified limit and a new file is started.

- ◆ **Number of Backup Files:** Specify the number of closed files to be backed up. The maximum number of backup files is 13.

Rolling Based on Date: Closes the current log file and starts a new file based on the following schedules:

- ◆ **Daily Pattern:** Starts a new file daily.

- ◆ **Monthly Pattern:** Starts a new file monthly.

On a Windows managed device, the local files include the following:

- ◆ `zmd-messages.log` located in `\novell\zenworks\logs\localstore`

- ◆ `loader-messages.log` located in `\novell\zenworks\logs`

- ◆ `services-messages.log` located in `\novell\zenworks\logs`

On a Linux managed device, the local files include the following:

- ◆ `loader-messages.log` located in `/var/opt/novell/log/zenworks`

- ◆ `services-messages.log` located in `/var/opt/novell/log/zenworks`

4 Configure the following options in the System Log panel.

- ◆ **Error:** Stores messages with severity of Error.

- ◆ **Warning and Above:** Stores messages with a severity of Warning and Error.

- ◆ **Information and Above:** Stores messages with a severity of Information, Warning, and Error.

This setting lets you determine the message types that are added to the local system log. The local system log is the `\var\log\messages` directory on Linux devices and the `zenworks/logs/centralstore` directory on Windows devices.

Messages added to this system log directory are sent to the ZENworks Server for viewing in ZENworks Control Center on the *Configuration > System Information* page or by viewing the Summary page for the server or workstation.

33.1.2 Centralized Message Logging

In ZENworks Control Center, the Centralized Message Logging page lets you configure the settings related to message logging performed by the Primary Server.

1 In ZENworks Control Center, click *Configuration*.

2 In the Management Zone Settings panel, click *Event and Messaging*, then click *Centralized Message Logging*.

3 In the Automatic Message Cleanup panel, configure the settings to automatically acknowledge or remove the logged messages from the ZENworks server:

Preferred Maintenance Server: Specify the IP address of the preferred server on which the Message Cleanup actions runs to acknowledge or delete the logged messages from database.

Information: Allows you to configure the following settings for the informational messages:

  ◆ **Auto acknowledge when older than [ ] days:** Allows you to automatically acknowledge the logged informational messages that are older than the number of days you specify. For example, if you specify 30 days, then all the informational messages logged before 30 days from the current date are acknowledged when the Message Cleanup activity is scheduled to run. If you specify zero, then the informational messages dated until today are acknowledged. By default, all the informational messages older than 60 days are automatically acknowledged.

  ◆ **Auto delete when older than [ ] days:** Allows you to automatically delete the logged informational messages that are older than the number of days you specify. For example, if you specify 30 days, then all the informational messages logged before 30 days from the current date are deleted when the Message Cleanup activity is scheduled to run. If you specify zero, then the informational messages dated until today are deleted. By default, all the informational messages older than 60 days are automatically deleted.

If you want to specify both the auto-acknowledge and auto-delete days, then the number of auto-acknowledge days should always be less than the number for auto-delete days.

Warnings: Allows you to configure the following settings for the warning messages:

  ◆ **Auto acknowledge when older than [ ] days:** Allows you to automatically acknowledge the logged warning messages that are older than the number of days you specify. For example, if you specify 30 days, then all the warning messages logged before 30 days from the current date are acknowledged when the Message Cleanup activity is scheduled to run. If you specify zero, then the warning messages dated until today are acknowledged. By default, all the warning messages older than 60 days are automatically acknowledged.

  ◆ **Auto delete when older than [ ] days:** Allows you to automatically delete the logged warning messages that are older than the number of days you specify. For example, if you specify 30 days, then all the warning messages logged before 30 days from the current date are deleted when the Message Cleanup activity is scheduled to run. If you specify zero, then the warning messages dated until today are deleted. By default, all the warning messages older than 60 days are automatically deleted.

If you want to specify both the auto-acknowledge and auto-delete days, then the number of auto-acknowledge days should always be less than the number for auto-delete days.

Errors: Allows you to configure the following settings for the error messages:

  ◆ **Auto acknowledge when older than [ ] days:** Allows you to automatically acknowledge the logged error messages that are older than the number of days you specify. For example, if you specify 30 days, then all the error messages logged before 30 days from the current date are acknowledged when the Message Cleanup activity is scheduled to run. If you specify zero, then the error messages dated until today are acknowledged. By default, all the error messages older than 60 days are automatically acknowledged.

  ◆ **Auto delete when older than [ ] days:** Allows you to automatically delete the logged error messages that are older than the number of days you specify. For example, if you specify 30 days, then all the error messages logged before 30 days from the current date are deleted when the Message Cleanup activity is scheduled to run. If you specify zero, then error messages dated until today are deleted. By default, all the error messages older than 60 days are automatically deleted.

If you want to specify both the auto-acknowledge and auto-delete days, then the number of auto-acknowledge days should always be less than the number for auto-delete days.

Select the Days of the Week and the Time to Perform the Message Cleanup: Allows you to specify the time and the days of the week to run the Message Cleanup action. The administrator can set a daily schedule for Message Cleanup action.

Use Coordinated Universal Time: Allows you to convert the specified time to UTC (GMT) time. By default, this option is selected.

4 In the E-mail Notification panel, configure the settings to send the error messages to the administrators through e-mail:

Send Log Message via E-mail if Severity Is: Allows you to select the severity of the message to trigger sending the log messages through e-mail.

From: Specify the sender's e-mail address.

To: Specify the e-mail address of the recipients. You can specify more than one e-mail address by separating them with commas.

Subject: Specify the subject to be included while sending the e-mail from the Primary Server. You can customize the *Subject* field with macro values. For more information on customizing the subject field, see Section 34.1.2, "E-Mail Format," on page 331.

5 In the SNMP Traps panel, configure the SNMP traps on the ZENworks Server to send log messages:

Send as SNMP Trap if Severity Is: Sends an SNMP trap if the logged message's severity is Error.

Trap Target: Specify the IP address or DNS name of the SNMP server.

Port: Specify the port number of the SNMP server configured for this operation. By default, the port number is 162.

Community String: Specify the community string of the SNMP trap that is to be sent.

6 In the UDP Forwarder panel, configure the settings to send logged messages through the UDP services. The following table contains information on the options available:

Send Message via UDP: Sends messages to the UDP destinations if the logged message's severity is Error.

UDP Destinations: You can perform the following tasks with the *Add*, *Edit*, and *Remove* options:

   ◆ **Add a Server**

      1. Click *Add* to display the Add UDP Destination Address dialog box.

      2. Specify the server name and the UDP port number configured for this operation.

      3. Click *OK*.

   ◆ **Remove a Server**

      1. Select the check box next to the server (or servers).

      2. Click *Remove*.

   ◆ **Edit Server Details**

      1. Select the check box next to the server.

      2. Click *Edit* to display the Edit UDP Destination dialog box.

      3. Modify the settings as desired, then click *OK*.

33.2 Configuring the Message Logger Settings at the Folder Level

By default, the Message Logger settings configured at the zone level are applied to all the managed devices. However, you can modify the Local Device Logging settings for all the devices within a folder:

1 In ZENworks Control Center, click *Devices*.

2 Click the *Folder (Details)* option for which you want to configure the Message Logger settings.

3 Click *Settings*, then click *Device Management > Local Device Logging*.

4 Click *Override*.

5 Edit the logging settings as required.

6 To apply the changes, click *Apply*.

or

To revert to the Local Device Logging settings configured at the zone level, click *Revert*.

7 Click *OK*.

33.3 Configuring the Message Logger Settings at the Device Level

By default, the Message Logger settings configured at the zone level are applied to all the managed devices. However, you can modify the Local Device Logging settings for the managed device:

1 In ZENworks Control Center, click *Devices*.

2 Click *Servers* or *Workstations* to display the list of managed devices.

3 Click the device for which you want to configure the Message Logger settings.

4 Click *Settings*, then click *Device Management > Local Device Logging*.

5 Click *Override*.

6 Edit the logging settings as required.

7 To apply the changes click *Apply*.

or

To revert to the Local Device Logging settings configured at the zone level, click *Revert*.

8 Click *OK*.

33.4 Turning on the Debug Messages

To turn on the logging of debug messages for all components:

1 In ZENworks Control Center, click *Configuration*.

2 In the Management Zone Settings panel, click *Device Management*, then click *Local Device Logging.*

3 In the local file panel, select the *Log message to a local file if severity is* option, then select the severity as *Debug and above*.

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

Managing Messages

34

The Message Logger component lets you manage the messages logged by the other components of Novell ZENworks 10 Asset Management.

34.1 Understanding Message Formats

Messages are logged in different formats depending on the output targets such as local log, e-mail notification, SNMP traps, and UDP notification.

All error messages log the component name on which the error is generated. To troubleshoot the error, refer to the component's Reference Guide.

34.1.1 Local Log File Format

Messages are logged on the managed device and ZENworks Server in the following format:

```
[severity] [loggingTime] [userGUID] [componentName] [MessageID]
[MessageString] [additionalInfo] [RelatedGUID].
```

For example, `[DEBUG] [1/22/2007 12:09:15 PM] [] [ZMD] [] [refreshing QuickTaskRefresh(GeneralRefresh)] [] [].`

34.1.2 E-Mail Format

An e-mail message consists of the message header and the message body:

- "Message Header" on page 331
- "Message Body" on page 332

Message Header

The subject field in the e-mail can be customized as required by using keyword substitution macros:

Macro	Value
%s	Severity of the message.
%c	Name of the component.
%d	ID of the device at which the message is generated.
%t	Time of the message generation.
%a	Alias name of the device where the message is generated.

For example, if you want the subject line to display as "ERROR occurred on device Testifies at 4/1/ 07 5:31:01 PM", then specify "*%s occurred on device %a at %t*" in the *Subject* field.

Message Body

The message body consists of the following fields:

- **Device Alias:** Name of the device where the message is generated.
- **Device IP Address:** IP Address of the device where the message is generated.
- **Error:** [Date] Component name Message ID localized message string.
- **Additional Information:** (Optional) Any additional information.

34.1.3 SNMP Message Format

The SNMP messages consists of the following two parts:

SNMP Message Header

The following fields are contained in the header:

Version Number: Specifies the version of SNMP used. ZENworks 10 Asset Management uses SNMPv1.

Community String: Defines an access environment for a group of network-management systems (NMS).

Protocol Data Unit (PDU)

The following fields are contained in the PDU:

Enterprise: Identifies the type of managed object generating the trap. ZENworks 10 Asset Management uses 1.3.6.1.4.1.23.2.80.100.

Agent Address: Provides the IP address of the machine where the trap was generated.

GenerIc Trap Type: Contains the integer value 6. Type 6 is an enterprise-specific trap type, which has no standard interpretation in SNMP. The interpretation of the trap depends upon the value in the specific trap type field, which is defined by the Message Logger MIB.

Specific Trap Code: For enterprise-specific traps generated by ZENworks 10 Asset Management, the values in the specific trap type fields are as follows:

- For a severity level of MessageLogger.ERROR, the specific trap is 1.
- For a severity level of MessageLogger.WARN, the specific trap is 2.
- For a severity level of MessageLogger.INFO, the specific trap is 3.

Time Stamp: The time stamp indicating when the trap occurred.

Variable Bindings: Provides additional information pertaining to the trap. This field consists of the following name/value pairs:

- For trap ID 1.3.6.1.4.1.23.2.80.100.0.1, the value is the device GUID.
- For trap ID 1.3.6.1.4.1.23.2.80.100.0.2, the value is the device name.
- For trap ID 1.3.6.1.4.1.23.2.80.100.0.3, the value is the component name.
- For trap ID 1.3.6.1.4.1.23.2.80.100.0.4, the value is the time when the message was logged.
- For trap ID 1.3.6.1.4.1.23.2.80.100.0.5, the value is the message ID.
- For trap ID 1.3.6.1.4.1.23.2.80.100.0.6, the value is the probable cause.

34.1.4 UDP Payload Format

The payload is a byte array with null-terminated delimiters such as \0 or 0 x 00 (hexadecimal) for each element. Each element's data is presented as UTF-8 encoded strings and is explained below:

- The first element is the ZENworks version information. For example, 10.
- The second element is the value of severity of the message. The severity values are 4 for Informational, 6 for Warning, and 8 for Debug messages.
- The third element is the message date. The date is not locally specific and is represented as a UTF-8 string. For example, 09-Mar-2008 14:15:44.
- The fourth element is the user ID.
- The fifth element is the component name.
- The sixth element is the non-localized message ID.
- The seventh element is the localized message string.
- The eighth element is the additional information.
- The ninth element is the probable cause URL.
- The tenth element is the related GUID objects separated by commas.

NOTE: If the element does not have any data, it is represented as \0\0.

34.2 Viewing the Message Status

In ZENworks Control Center, you can view the status of the logged messages in the following panels on the home page.

-
-

34.2.1 Message Summary

The Message Summary panel displays the number of critical, warning, and normal messages generated on the main objects in the Management Zone.

Figure 34-1 *Message Summary*

In the Message Summary panel, you can do the following:

- Click an object type to display its root folder. For example, click *Servers* to display the Servers root folder.

- For any object type, click the number in one of its status columns (✕◇●) to display a listing of all the objects that currently have that status. For example, to see the list of servers that have a normal status, click the number in the column of the *Servers*.

- For any object type, click the number in the *Total* column to display all of the objects of that type having critical, warning, or normal messages. For example, click the Total count for *Servers* to display a list of all servers having messages logged.

34.2.2 Device Hot List

The Device Hot List displays a list of the devices that have a noncompliant ✕ status or have generated critical ✕ or warning ◇ messages. The device remains in the hot list until you resolve the compliancy problem and acknowledge the messages. You can use this list as a summary of problems that need attention on the device.

To view the Device Hot List:

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

- ✕ This column indicates the number of bundles or policies that could not be applied to the device because an error occurred. You must review the error and warning messages to discover the compliance problem. The noncompliant status applies only to ZENworks Configuration Management. ZENworks Asset Management does not use this status.

◆ ⊗ This column indicates the number or unacknowledged error messages generated for the device. An error is any action that fails so the ZENworks Adaptive Agent cannot complete the action on the device.

◆ ◈ This column indicates the number of unacknowledged warning messages generated for the device. A warning is any action that encounters a problem; the problem might or might not result in the ZENworks Adaptive Agent completing the action on the device.

2 Click the device to display its message log.

34.3 Viewing the Messages

In the ZENworks Control Center, you can view the logged messages as follows:

◆ Section 34.3.1, "Message Log," on page 335
◆ Section 34.3.2, "System Message Log," on page 336

34.3.1 Message Log

The Message Log displays all unacknowledged messages generated for the object.

To view the message logs:

1 In ZENworks Control Center, click the *Device Hot List* on the home page, then click the device to view its message log.

You can also use the *Devices* menu to view the logs:

1 In ZENworks Control Center, click *Devices*.

2 Click *Servers* or *Workstations* to display the list of managed devices.

3 Click the name of a device, then click the *Summary* tab to display:

○ Message Log		Advanced ⌃
Status	**Message**	**Date**
◈	The action local file rights policy (ID:local file rights policy	3:20 AM
⊗	The drive "d:" is not a local fixed drive. Files/folders on this	3:20 AM
◈	The action local file rights policy (ID:local file rights policy	3:14 AM
⊗	The drive "d:" is not a local fixed drive. Files/folders on this	3:14 AM
◈	The action grouppolicy (ID:grouppolicy) failed, but the action s	3:11 AM
◀ ▶ 1 - 5 of 91		show 5 ▾ items

Status: Displays an icon indicating the type of message:

⊗ Critical Message
◈ Warning
● Normal

Message: Displays a brief description of the event that occurred.

Date: Displays the date and time the event occurred.

4 To view the log messages in the advanced view, click *Advanced* on the right corner of the Memory Log panel.

You can acknowledge or delete messages from the message log. For more information on acknowledging messages, see Section 34.4, "Acknowledging Messages," on page 336, and for information on deleting messages, see Section 34.5, "Deleting Messages," on page 338.
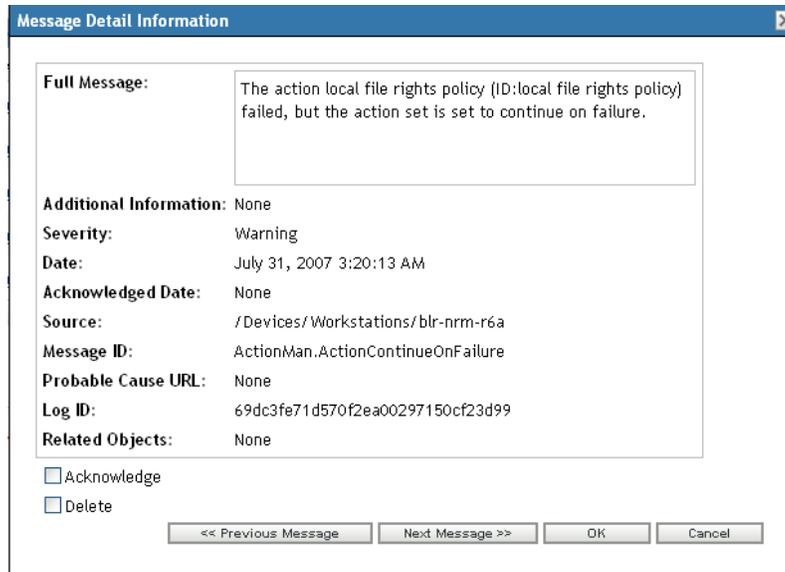
34.3.2 System Message Log

The System Message Log panel displays the unacknowledged messages generated by the ZENworks Servers and managed devices in the Management Zone.

1 In ZENworks Control Center, click *Configuration*.

2 Click *System Information* to display the System Message Log.

Status: Displays an icon indicating the type of message:

 Critical Message
 Warning
 Normal

Message: Displays a brief description of the event that occurred.

Date: Displays the date and time the event occurred.

3 To view the log messages in the advanced view, click *Advanced* on the right corner of the System Memory Log panel.

You can acknowledge or delete messages from the system message log. For more information on acknowledging messages, see Section 34.4, "Acknowledging Messages," on page 336, for information on deleting messages, see Section 34.5, "Deleting Messages," on page 338.

34.4 Acknowledging Messages

An acknowledged message is one that you have reviewed and marked as acknowledged ( ).

- Section 34.4.1, "Acknowledging a Message," on page 336
- Section 34.4.2, "Acknowledging Multiple Messages," on page 337
- Section 34.4.3, "Acknowledging Messages Logged During a Specified Time," on page 337

34.4.1 Acknowledging a Message

1 In the Message Log panel or the System Message Log panel, click the message you want to acknowledge.

2 In the Message Detail Information dialog box, select the *Acknowledge* option, then click *OK*:

The acknowledged messages are removed from the Message Log panel or the System Message Log panel, depending on which panel you selected in Step 1.

The acknowledged messages continue to be listed in the Advanced view of these logs, marked with a check mark (✓).

34.4.2 Acknowledging Multiple Messages

1 In the Message Log panel or the System Message Log panel, click *Advanced* on the right corner of the panel.
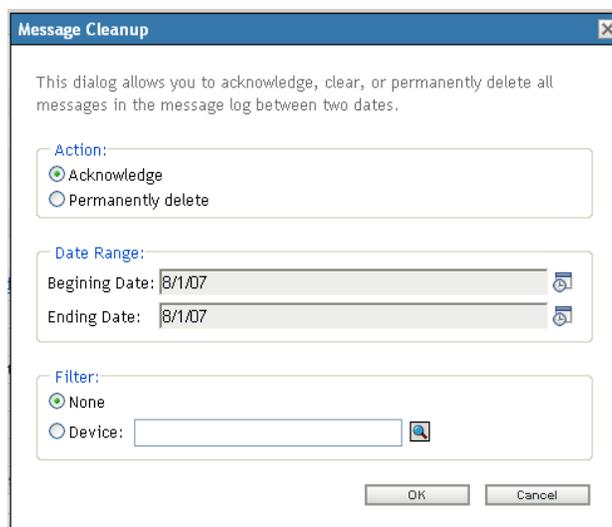
2 Select the messages to acknowledge, then click *Acknowledge*:

The acknowledged messages are marked with a check mark (✓).

34.4.3 Acknowledging Messages Logged During a Specified Time

1 In ZENworks Control Center, click *Configuration*.

2 In the *Configuration Tasks*, click *Message Cleanup* to display:

3 In the Message Cleanup dialog box, select *Acknowledge*.

4 In the *Date Range* option, select the *Beginning Date* and the *Ending Date*.

5 Select the *Filter* option:

None: Cleans up the messages in selected date range from all the devices.

Device: Cleans up the messages in selected date range from the selected device.

6 Click *OK*.

A message cleanup action is initiated and a system message is logged after the cleanup action is completed. For more information on viewing system logs, see Section 34.3.2, "System Message Log," on page 336.
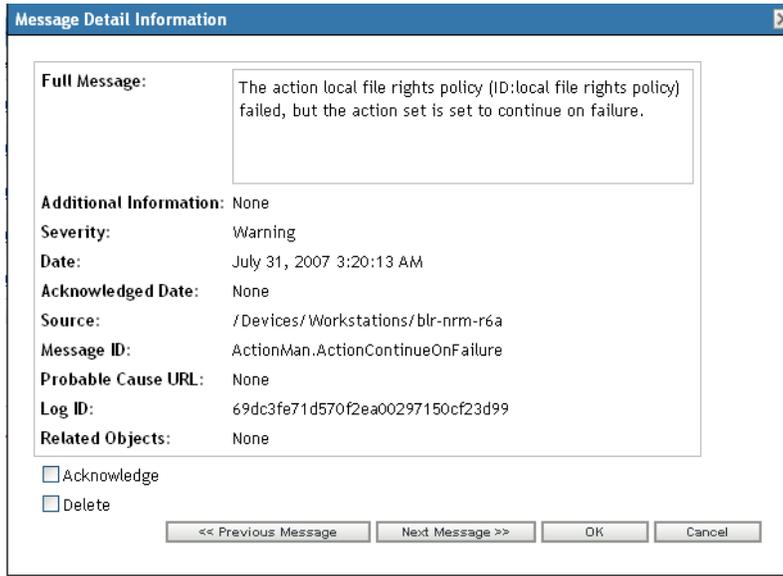
34.5 Deleting Messages

Deleting a message completely removes the message from your ZENworks system.

- Section 34.5.1, "Deleting a Message," on page 338
- Section 34.5.2, "Deleting Multiple Messages," on page 339
- Section 34.5.3, "Deleting Messages Logged During a Specified Time," on page 339

34.5.1 Deleting a Message

1 In the Message Log panel or the System Message Log panel, click the message you want to delete.

2 In the Message Detail Information dialog box, select the *Delete* option, then click *OK*:

34.5.2 Deleting Multiple Messages

1 In the Message Log panel or the System Message Log panel, click *Advanced* on the right corner of the panel.
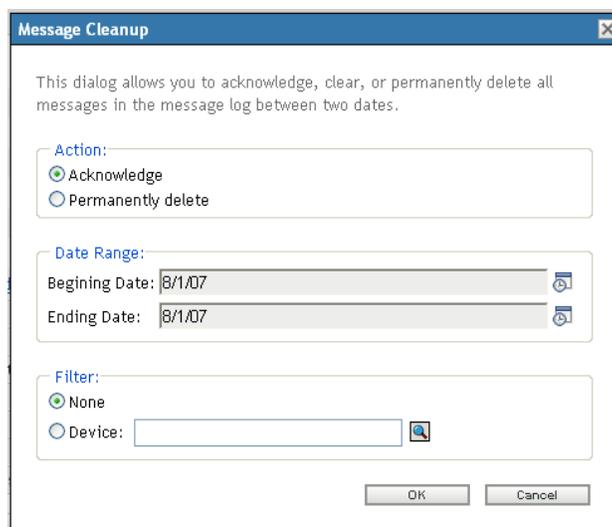

2 Select the messages to delete, then click *Delete*.

34.5.3 Deleting Messages Logged During a Specified Time

1 In ZENworks Control Center, click *Configuration*.

2 In the *Configuration Tasks*, click *Message Cleanup*.

3 In the Message Cleanup dialog box, select *Permanently Delete*.

4 In the *Date Range* option, select the *Beginning Date* and the *Ending Date*.

5 Select the *Filter* option:

   None: Cleans up the messages in selected date range from all the devices.

   Device: Cleans up the messages in selected date range from the selected device.

6 Click *OK*.

7 In the Confirm Delete Dialog box, click *OK* to delete the message.

   A system message is logged after the cleanup action is completed. For more information on viewing the system log see, Section 34.3.2, "System Message Log," on page 336.

34.6 Viewing the Predefined Reports

You must have installed ZENworks Reporting Server to view the predefined reports. For more information on how to install ZENworks Reporting Server, see the *ZENworks 10 Asset Management Reporting Server Installation Guide*.

To view the predefined reports for messages:

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

2 In the ZENworks Reporting Server Reporting panel, click *ZENworks Reporting Server InfoView* to launch the ZENworks Reporting Server InfoView.

3 Navigate to the *Novell ZENworks Reports* folder > *Predefined Reports* > *ZENworks System* folder.

4 The following predefined report is included for Messages:

   ZENworks Messages: Displays message details such as the log time and description for all the ZENworks System messages.

For more information on creating and managing reports, see the *ZENworks 10 Asset Management System Reporting Reference* documentation.

Support for L4 Switches

A

Layer 4 (L4) is used to make switching decisions, which means that a switch considers the information in Layer 4 when routing a packet. For example, an L4 switch can decide where to send the packet based on the port numbers. Layer 4 information is used to direct application sessions to different servers and prioritize and queue certain packet types, such as database or application server traffic. An L4 switch requires every device along its path to be together. These switches are useful for WAN and LAN/WAN boundaries.

Each L4 switch has a slightly different method and terminology for the sticky bit or persistence bind, which allows a client that has established a session to be directed to the same Primary Server for all requests sent during the session.

For pull deployment in ZENworks 10 Configuration Management SP3 to work efficiently, you must enable the sticky bit with the sticky age set to 30 minutes. After the deployment task is finished, the sticky bit configuration is not required and can be removed.

If you choose to deploy Primary Servers behind a L4 switch, ensure that all such Primary servers are running on the same HTTP and HTTPS ports.

The following table lists supported and unsupported scenarios if L4 switching is used in ZENworks 10 Configuration Management SP3:

Supported	Not Supported
Pull deployment (Sticky bit set)	Push deployment
Regular managed device activity (Bundles and policy assignments, remotely controlling the devices, etc.)	Content Satellite
Authentication to user sources	Collection Satellite
	Authentication Satellite

NOTE: System updates of managed devices, Patch Management, and Imaging scenarios have not been tested.

A.1 Predeployment Tasks

Before you begin to use the pull deployment method to deploy the ZENworks Adaptive Agent, perform the following tasks:

1 Create an L4 definition:

    1a In ZENworks Control Center, click the *Configuration* tab.

    1b In the Management Zone Settings panel, click *Infrastructure Management*, then click *Closest Server Default Rule* to display the Closest Server Default Rule page.

    1c Click *L4 Switch > Create Empty L4 Switch Definition*.

1d In the Create Empty L4 Switch Definition dialog box, specify the IP address or DNS name of the L4 switch.

1e Click *OK*.

2 Add Primary Server to the L4 switch:

2a Select the Primary Server that you want to add to the L4 switch, then click *L4 Switch > Add To L4 Switch Definition*.

2b In the Add to Existing/New L4 Switch Definition dialog box, specify the the L4 IP address or DNS name for a new L4 switch definition or select an existing L4 definition from the drop-down list, then click *OK*.

2c Click *OK*.

3 (Optional) Add an L4 switch definition to a location:

3a Click *Configuration > Locations*.

3b Select the location that you want to add to the L4 switch, then click *Servers* tab.

3c Click *L4 Switch > Add L4 Switch*.

3d In the Add Existing L4 Switch Definition dialog box, select an existing L4 definition from the drop-down list, then click *OK*.

3e Click *Apply*.

4 Edit the deployment package to add the L4 switch IP address.

For more information on how to edit the deployment package, see "Customizing Packages" in the *ZENworks 1 Discovery, Deployment, and Retirement Reference*.

5 On the L4 switch console, enable the sticky bit or persistent bind with the stick age set to 30 minutes.

For more information on how to enable the sticky bit, refer to your L4 switch vendor documentation.

Naming Conventions in ZENworks Control Center

B

When you name an object in the ZENworks Control Center (folders, groups, registration keys, 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 10 Asset 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 reg key 1 in quotes ("reg key 1") when entering it in the zman utility.
- The following characters are invalid and cannot be used: / \ * ? : " ' < > | ` % ~

Schedule Types

C

The following schedules are available:

C.1 Date Specific

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

Figure C-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.

C.2 Event

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

Figure C-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.

NOTE: At device startup, the ZENworks Adaptive Agent contacts a ZENworks Server according to the device's refresh schedule to refresh its bundle, policy, configuration, and registration information. If information changes, the Adaptive Agent must refresh its information before the

changes can show up on the device, even if one of the event triggers occur. By default, devices refresh randomly between 300 and 360 seconds after device startup with a full refresh every 12 hours.

For example, if you create a bundle and schedule it to launch when the device connects to the network, the device must be manually refreshed or refreshed according to schedule before the Adaptive Agent can upload or launch the bundle, even if the device connects to the network.

C.3 Now

Select this scheduling option to run the event immediately.

C.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 C-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.

Customizing the Look and Feel of the ZENworks Icon

D

The ZENworks Icon [Z] is located in the Windows notification area of the managed device. This is a default static icon. When the managed device is refreshed, the default static icon is replaced by the default animated icons.

ZENworks 10 Configuration Management SP3 allows you to change the look and feel of the ZENworks Icon. You can choose to replace the default icons with different icons, such as your company logo.

D.1 Replacing the Default ZENworks Icons with the New Customized Icons

You need the following 16x16-pixel icon files:

- **Customized Static Icon:** A static icon named `Application.ico`.
- **Customized Animated Icons** One or more custom animated icons named `refresh_xx.ico`, where *xx* is a double-digit numeric value that can range from 00 to 99. These icons are displayed when the managed device is refreshed.

    You must have at least one animated icon. If you choose to have more than one animated icon, the icons are displayed sequentially based on the value of *xx* in the filename. For example, if you have the `refresh_00.ico` and `refresh_01.ico` icons, `refresh_00.ico` is displayed first followed by `refresh_01.ico`.

To replace the default icons on a managed device:

1 Go to `%ZENWORKS_HOME%\bin` directory and create an `\icons\ZIcon.` subdirectory within it.

2 Copy the `Application.ico` and `refresh_xx.ico` icons to the `%ZENWORKS_HOME%\bin\\icons\ZIcon` directory.

3 Stop the *ZenNotifyIcon.exe* process by using the Windows Task Manager.

4 Go to the `%ZENWORKS_HOME%\bin` directory and double-click `ZenNotifyIcon.exe` to restart the process.

When you work with the customized icons, be aware of the following:

- If you delete `Application.ico` from `%ZENWORKS_HOME%\bin\icons\ZIcon` directory, the default ZENworks icon is displayed in the notification area of the device.

- If you delete the custom animated icons from the `%ZENWORKS_HOME%\bin\icons\ZIcon` directory, the default ZENworks animated icons are displayed in the notification area of the device during the device refresh.

- If you choose to delete a custom animated icon file, then you rename an existing custom animated icon file with the same name as the deleted file, the icon associated with the renamed file is incorrectly displayed as the icon of the deleted file in the `%ZENWORKS_HOME%\bin\icons\ZIcon` directory. However, the renamed file contains the correct icon. This is a Microsoft issue. For more information on this issue, see Microsoft Support (http://support.microsoft.com/kb/75041).

D.2 Replacing the Customized Icons with the Default ZENworks Icons

1 Delete the customized icons from the `%ZENWORKS_HOME%\bin\icons\ZIcon` directory.

2 Stop the *ZenNotifyIcon.exe* process by using the Windows Task Manager.

3 Restart `%ZENWORKS_HOME%\bin\ZenNotifyIcon.exe`.