

System Administration Reference

ZENworks® 11 Support Pack 2

October 2013

Novell.



Legal Notices

Novell, Inc., makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc., makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. See the [Novell International Trade Services Web page \(http://www.novell.com/info/exports/\)](http://www.novell.com/info/exports/) for more information on exporting Novell software. Novell assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2007-201 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

Novell, Inc.
1800 South Novell Place
Provo, UT 84606
U.S.A.
www.novell.com

Online Documentation: To access the latest online documentation for this and other Novell products, see the [Novell Documentation Web page \(http://www.novell.com/documentation/\)](http://www.novell.com/documentation/).

Novell Trademarks

For Novell trademarks, see [the Novell Trademark and Service Mark list \(http://www.novell.com/company/legal/trademarks/tmlist.html\)](http://www.novell.com/company/legal/trademarks/tmlist.html).

Third-Party Materials

All third-party trademarks are the property of their respective owners.

Contents

About This Guide	13
Part I ZENworks Control Center	15
1 ZENworks Control Center	17
1.1 Accessing ZENworks Control Center	17
1.2 Accessing ZENworks Control Center through Novell iManager	19
1.3 Navigating ZENworks Control Center	20
1.4 Changing the Default Login Disable Values	21
1.5 Changing the Timeout Value for ZENworks Control Center	21
1.6 Using the Config.xml File to Modify ZENworks Control Center Settings	22
1.7 Organizing Devices: Folders and Groups	23
1.7.1 Folders	23
1.7.2 Groups	25
1.7.3 Assignment Inheritance for Folders and Groups	28
1.8 Naming Conventions in ZENworks Control Center	28
1.9 Bookmarking ZENworks Control Center Locations	28
1.10 Troubleshooting ZENworks Control Center	29
2 User Sources	31
2.1 Prerequisites	31
2.2 Managing User Sources	32
2.2.1 Adding User Sources	32
2.2.2 Deleting User Sources	35
2.2.3 Editing User Sources	36
2.2.4 Adding a Container from a User Source	37
2.3 Managing User Source Connections	37
2.3.1 Creating User Source Connections	37
2.3.2 Editing User Source Connections	38
2.3.3 Removing User Source Connections	38
2.3.4 Updating a Certificate for a User Source	39
2.4 Managing Primary Server Connections for User Sources	39
2.5 Managing Authentication Server Connections for User Sources	39
2.5.1 Assigning a Connection to an Authentication Server	40
2.5.2 Removing a Connection	40
2.5.3 Reordering Connections	41
2.6 Providing LDAP Load Balancing and Fault Tolerance	41
2.6.1 Using ZENworks Control Center to Define Additional LDAP Servers for a ZENworks Server	42
2.6.2 Using the zman Command Line Utility to Define Additional LDAP Servers for a ZENworks Server	42
2.7 User Source Authentication	42
2.7.1 Authentication Mechanisms	45
2.7.2 Credential Storage	55
2.7.3 Disabling ZENworks User Authentication	55
2.7.4 Manually Disabling a DLU on a Workstation	56
2.7.5 Using a DLU in a Domain Environment	56
2.8 Troubleshooting User Sources	57

2.9	Troubleshooting User Authentication	59
-----	-------------------------------------	----

3 Administrators and Administrator Groups 65

3.1	Managing Administrator Accounts	66
3.1.1	Creating Administrators	66
3.1.2	Deleting Administrators	67
3.1.3	Renaming Administrators	67
3.1.4	Changing Administrator Passwords	68
3.2	Managing Administrator Rights	68
3.2.1	Assigning Super Administrator Rights	68
3.2.2	Assigning Additional Rights	69
3.2.3	Modifying Assigned Rights	69
3.2.4	Removing Assigned Rights	70
3.3	Managing Administrator Group Accounts	70
3.3.1	Creating Administrator Group Account	70
3.3.2	Creating Administrators	72
3.3.3	Deleting Administrator Groups	72
3.3.4	Renaming Administrator Groups	73
3.4	Managing Administrator Group Rights	73
3.4.1	Assigning Additional Rights	73
3.4.2	Modifying Assigned Rights	73
3.4.3	Removing Assigned Rights	73
3.5	Rights Descriptions	74
3.5.1	Administrator Rights	75
3.5.2	Bundle Rights	75
3.5.3	Contract Management Rights	76
3.5.4	Credential Rights	76
3.5.5	Deployment Rights	77
3.5.6	Device Rights	77
3.5.7	Discovery Rights	78
3.5.8	Document Rights	78
3.5.9	Inventoried Device Rights	79
3.5.10	LDAP Import Rights	79
3.5.11	License Management Rights	80
3.5.12	Location Rights	80
3.5.13	Patch Management Rights	80
3.5.14	Policy Rights	81
3.5.15	Quick Task Rights	82
3.5.16	Remote Management Rights	83
3.5.17	Reporting Rights	84
3.5.18	Subscription Rights	84
3.5.19	User Rights	84
3.5.20	ZENworks User Group Rights	85
3.5.21	Zone Rights	85
3.5.22	Inventory Report Rights	86
3.5.23	Asset Management Report Rights	87
3.6	Managing Administrator Roles	88
3.6.1	Understanding Administrator Roles	88
3.6.2	Creating a Role	91
3.6.3	Assigning Roles	92
3.6.4	Editing a Role	96
3.6.5	Renaming a Role	99
3.6.6	Deleting a Role	99

4 ZENworks News 101

4.1	Managing ZENworks News Alerts	101
4.1.1	Deleting the News Alerts	102

4.1.2	Updating the News Alerts	102
4.1.3	Displaying the News Alerts Based on the Selected Category	102
4.1.4	Viewing the News	102
4.1.5	Sorting the News Alerts	102
4.2	Configuring ZENworks News Settings	102
4.2.1	Dedicated News Server	103
4.2.2	Schedule Type	104
5	ZENworks 11 Product Licensing	107
5.1	Evaluating a Product	107
5.2	Extending the Evaluation Period of a Product	108
5.3	Activating a Product	108
5.4	Deactivating a Product	108
5.5	Possible License State Changes	109
5.6	Using ZENworks 11 Asset Management with ZENworks 7 Desktop Management	110
5.7	Viewing the Predefined Reports	111
6	System Variables	113
6.1	Understanding System Variables	113
6.2	Adding System Variables	114
6.3	Removing System Variables	115
6.4	Editing System Variables	115
6.5	Using System Variables	115
7	Credential Vault	117
7.1	Creating a Folder for Credentials	117
7.2	Assigning Credential Rights	118
7.3	Renaming a Credential	119
7.4	Moving a Credential to Another Folder	119
7.5	Removing a Credential	119
8	Message Logging	121
8.1	Functionalities of Message Logger	121
8.2	Message Severity	121
8.3	Message Format	122
8.4	Configuring Message Logger Settings	122
8.4.1	Configuring the Message Logger Settings at the Zone Level	122
8.4.2	Configuring the Message Logger Settings at the Folder Level	125
8.4.3	Configuring the Message Logger Settings at the Device Level	126
8.4.4	Turning on the Debug Messages	126
8.5	Managing Messages	126
8.5.1	Understanding Message Formats	127
8.5.2	Viewing the Message Status	129
8.5.3	Viewing the Messages	131
8.5.4	Acknowledging Messages	132
8.5.5	Deleting Messages	134
8.5.6	Viewing the Predefined Reports	136

9	ZENworks Server	139
9.1	ZENworks Services on a Windows Server	139
9.1.1	Checking the Status of a ZENworks Service	140
9.1.2	Starting the ZENworks Services	140
9.1.3	Stopping the ZENworks Services	141
9.1.4	Restarting the ZENworks Services	141
9.2	ZENworks Services on a Linux Server	142
9.2.1	Checking the Status of a ZENworks Service	143
9.2.2	Starting the ZENworks Services	143
9.2.3	Stopping the ZENworks Services	143
9.2.4	Restarting the ZENworks Services	144
9.3	Configuring Additional Access to a ZENworks Server	144
9.3.1	Addressing Non-Detectable IP Address Conditions	144
9.3.2	Addressing Non-Detectable DNS Name Conditions	145
9.4	Configuring Restricted Access to a ZENworks Server	146
9.5	Determining the ZENworks Software Version Installed on Servers	146
9.6	Uninstalling a ZENworks Server	146
9.7	Deleting a ZENworks Primary Server	147
9.8	ZENworks Server Reports	147
9.9	Troubleshooting ZENworks Server	148
10	Satellites	149
10.1	Understanding the Satellite Roles	149
10.1.1	Understanding the Authentication Role	150
10.1.2	Understanding the Collection Role	150
10.1.3	Understanding the Content Role	151
10.1.4	Understanding the Imaging Role	151
10.2	Adding and Configuring Satellite Devices	151
10.2.1	Authentication Role	153
10.2.2	Collection Role	154
10.2.3	Content Role	155
10.2.4	Imaging Role	156
10.3	Refreshing a Satellite	158
10.4	Removing the Roles from a Satellite	158
10.5	Removing Satellites from the Server Hierarchy	159
10.6	Specifying Content to be Hosted	160
10.7	Manually Replicating Content from a Primary Server to Satellite Devices	161
10.8	Moving a Satellite from One Primary Server to Another Primary Server	161
10.9	Specifying a Different Repository for the Content Role Satellite (Windows Only)	161
10.10	Specifying a Different Repository for Content Role Satellite (Linux Only)	162
10.11	Troubleshooting Satellites	163
11	Server Hierarchy	165
11.1	Primary Servers: Peer Versus Parent/Child Relationships	165
11.2	Satellite Role Relationships	165
11.2.1	Authentication Role Server Relationships	166
11.2.2	Content Role Server Relationships	166
11.2.3	Collection Role Server Relationships	166
11.2.4	Imaging Role Server Relationships	166
11.3	Changing the Parent-Child Relationships of Primary Servers	166
11.3.1	Making a Primary Server a Child	166

11.3.2	Making a Primary Server a Peer	167
12	Location Awareness	169
12.1	Understanding Configuration and Security Locations	169
12.2	Defining and Managing Network Environments	170
12.2.1	Defining Network Environments	170
12.2.2	Managing Network Environments	171
12.2.3	Backing Up Network Environments	172
12.3	Creating and Managing Locations	172
12.3.1	Creating Locations	173
12.3.2	Managing Locations	173
12.3.3	Location and Network Environment Selection on a Managed Device	175
12.4	Configuring the Closest Server Default Rule	175
12.5	Adding Closest Servers to Locations	181
12.5.1	Creating Closest Server Rules for a Location	183
12.5.2	Creating Closest Server Rules for a Network Environment	189
13	Content	197
13.1	Content Repository	197
13.1.1	Changing the Location of the Content Repository on a Windows Server	198
13.1.2	Changing the Location of the Content Repository on a Linux Server	199
13.1.3	Mounting the Content Repository on a Linux Server to an NSS Volume	201
13.1.4	Changing the Location of the Temporary Location on a Windows Server	202
13.1.5	Changing the Location of the Temporary Location on a Linux Server	203
13.2	Content Replication	204
13.2.1	Configuring Content Replication at the Management Zone Level	205
13.2.2	Replicating Content to New Content Servers	206
13.2.3	Manually Replicating Content from a Primary Server to Satellite Devices	207
13.2.4	Including or Excluding Content	207
13.3	Content Delivery	210
13.3.1	Setting Up Location Closest Server Rules	210
13.3.2	Scheduling Delivery Blackout Dates	210
13.3.3	Setting the Device Refresh Schedule	211
Part III	ZENworks System Updates	215
14	Configuring Updates	217
14.1	Configuring System Update Settings	217
14.1.1	System Update Entitlement	217
14.1.2	Check for Updates Schedule	218
14.1.3	Download Schedule	219
14.1.4	E-Mail Notification	220
14.1.5	Proxy Server Settings	221
14.1.6	Dedicated Server Settings	222
14.1.7	Stage Timeout Settings	223
14.1.8	Reboot Behavior	224
14.2	Creating Deployment Stages	225
14.2.1	Understanding Stages	225
14.2.2	Creating and Populating a Deployment Stage	227
14.2.3	Modifying the Stage Timeout	228
14.2.4	Modifying Staging Behavior	229
14.2.5	Modifying Reboot Behavior	230
14.2.6	Modifying the Membership of a Deployment Stage	230
14.2.7	Renaming a Deployment Stage	231

14.2.8	Deleting a Deployment Stage	232
14.2.9	Rearranging the Order in Which Stages Start	232
15	Managing Update Downloads	233
15.1	Understanding Available Updates	233
15.2	Downloading Updates	234
15.2.1	Scheduling Update Downloads	234
15.2.2	Manually Checking for Updates	235
15.2.3	Manually Downloading Updates	235
15.2.4	Manually Importing Updates to Servers without Internet Connectivity	235
15.3	Downloading and Installing the PRU	236
15.4	Canceling or Deleting a System Update	236
16	Deploying Updates	239
16.1	Understanding Deploying Updates	239
16.2	Deploying Updates	242
16.3	Starting a Pending Stage	247
16.4	Rescheduling a Deployment	247
16.4.1	Rescheduling a Deployment for the All Stages Status	247
16.4.2	Rescheduling a Deployment for the Other Statuses	247
16.5	Bypassing Staging	248
16.6	Canceling a Deployment	248
16.7	Clearing an Error to Retry a Deployment	248
16.8	System Update Fails on the Device with an Error Code	248
16.9	Viewing Status by Device	249
16.9.1	Understanding Device Statuses	249
16.9.2	Viewing a Device's Properties	250
16.9.3	Viewing Information on a Device's Status	250
16.9.4	Toggling Ignored Devices	251
16.9.5	Redeploying Updates to Devices	251
16.9.6	Rescheduling Updates to Devices	252
16.9.7	Refreshing Devices	252
17	Deleting Updates	253
18	Reviewing the Content of an Update	255
18.1	Viewing the Release Details Page	255
18.2	Update Release Details	255
18.3	Deployment History	256
18.3.1	Understanding Deployment History Details	256
18.3.2	Performing Deployment History Tasks	257

19 Update Statuses	259
20 Configuring the System Update Behavior of the ZENworks Adaptive Agent	261
Part IV ZENworks Adaptive Agent	263
21 Viewing the Version of the Adaptive Agent Software and Modules on a Device	265
22 Searching for Devices that Have a Specified Version of the Adaptive Agent	267
23 Configuring Adaptive Agent Settings after Deployment	269
23.1 Configuring Agent Settings on the Management Zone Level.	269
23.2 Configuring Agent Settings on the Device Folder Level.	270
23.3 Configuring Agent Settings on the Device Level	270
23.4 ZENworks Agent Settings	271
23.4.1 Agent Features	271
23.4.2 Agent Preferences.	277
24 Configuring ZENworks Explorer	279
24.1 Configuring ZENworks Explorer Settings on the Management Zone Level.	279
24.2 Configuring ZENworks Explorer Settings on the Device Folder Level.	280
24.3 Configuring ZENworks Explorer Settings on the Device Level	281
24.4 ZENworks Explorer General Settings	281
25 Removing the ZENworks Pre-Agent from a Device	283
26 Configuring the System Update Behavior of the ZENworks Adaptive Agent	285
27 Customizing the Look and Feel of the ZENworks Icon	287
27.1 Replacing the Default ZENworks Icons with the New Customized Icons.	287
27.2 Replacing the Customized Icons with the Default ZENworks Icons.	288
28 Troubleshooting the Adaptive Agent	289
Part V Database Management	295
29 Embedded Database Maintenance	297
29.1 Retrieving and Storing the Credentials of the Embedded Sybase SQL Anywhere Database	297
29.2 Changing the Ports Used by the Embedded Sybase SQL Anywhere Database	297
29.3 Backing Up the Embedded Sybase SQL Anywhere Database	299
29.3.1 Backing Up the Embedded Sybase SQL Anywhere Database on a Windows or Linux Server	299
29.3.2 Backing up the Embedded Sybase SQL Anywhere Database Running on a Windows Server to a Network Location on a Remote Windows Machine.	301
29.3.3 Backing up the Embedded Sybase SQL Anywhere Database Running on a Linux Server to a Network Location on a Remote Linux Machine.	303
29.4 Restoring the Embedded Sybase SQL Anywhere Database.	306
29.4.1 Restoring the Embedded Sybase SQL Anywhere Database on a Windows Server	306

29.4.2	Restoring the Embedded Sybase SQL Anywhere Database on a Linux Server	307
29.5	Moving the Internal Sybase Database from One Primary Server to Another Primary Server	308
29.6	Moving the Data from an Embedded Sybase Database to an External Sybase Database	312
29.6.1	Preparing to Move the Data	312
29.6.2	Moving the Data from the Internal Sybase to the External Sybase	312
29.7	Migrating the Data from an Internal Sybase Database to an External Oracle Database	314
29.7.1	Preparing to Move the Data	314
29.7.2	Migrating the Data from the Internal Sybase Database to an Oracle Database	316
29.7.3	Post-Migration Tasks	318

30 External Database Maintenance 321

30.1	Backing Up the External Sybase Database	321
30.1.1	Backing Up the External Sybase Database on a Windows or Linux Server	321
30.1.2	Backing up the External Sybase Database Running on a Windows Server to a Network Location on a Remote Windows Machine	324
30.1.3	Backing up the External Sybase Database Running on a Linux Server to a Network Location on a Remote Linux Machine	328
30.2	Restoring the External Sybase Database	331
30.3	Moving the Data from One External Sybase Database to another External Sybase Database	332
30.3.1	Preparing to Move the Data	333
30.3.2	Moving the Data from One External Sybase to Another External Sybase	333
30.4	Moving the Data from an External OEM Sybase Database to an Embedded Sybase Database	334
30.4.1	Preparing to Move the Data	334
30.4.2	Moving the Data from the External Sybase to the Embedded Sybase	335
30.5	Migrating the Data from the External Sybase Database to an External Oracle Database	336
30.5.1	Preparing to Move the Data	336
30.5.2	Migrating the Data from the External Sybase Database to an Oracle Database	338
30.5.3	Post-Migration Tasks	339
30.6	Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database	341
30.6.1	Preparing to Move the Data	341
30.6.2	Configuring the ZENworks Server to Point to the New MS SQL Database	341
30.7	Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database	342
30.7.1	Preparing to Move the Data	343
30.7.2	Configuring the ZENworks Server to Point to the New Oracle Database	343

31 Database Management - Best Practices, Tips, Troubleshooting 345

31.1	Database Best Practices	345
31.1.1	Rebuilding the Sybase Database	345
31.2	Database Tips	348
31.2.1	Changing the Backup Location and Schedule of the Embedded Sybase Database Subsequent to the Initial Backup	349
31.2.2	Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup	350
31.2.3	Reverting to the ZENworks Sybase Database from the ZENworks Oracle Database	352
31.2.4	Identifying the EBF Version of Sybase Database Server	352
31.3	Troubleshooting Database Migration	352
31.3.1	Troubleshooting a Java Heap Space Exception	353
31.3.2	Troubleshooting an Oracle Database Crash	353
31.3.3	Troubleshooting an Oracle Tablespace Issue	354
31.3.4	Troubleshooting the Database Migration Failure Issue	354
31.3.5	Troubleshooting the Database Migration by Using An Existing User Schema	354

Part VI Disaster Recovery	355
32 Backing Up and Restoring the ZENworks Server and Certificate Authority	357
32.1 Backing Up a ZENworks Server	357
32.2 Restoring a ZENworks Server	358
32.3 Backing Up the Certificate Authority	359
32.4 Restoring the Certificate Authority	359
33 Replacing Primary Servers	361
33.1 Replacing the First Primary Server with the Second Primary Server	361
33.2 Replacing an Existing Primary Server with a New Primary Server	365
34 Changing the IP Address or DNS Name of Primary Servers	369
34.1 Changing the IP Address of a Primary Server after Installing ZENworks 11	369
34.2 Changing the DNS Name or the IP Address and DNS Name of a Primary Server after Installing ZENworks 11	370
35 Reconfiguring a Zone Certificate Before It Expires	373
35.1 Changing the Zone Certificate from Internal to External	373
35.2 Replacing an Internal Server Certificate with a New Internal Server Certificate	375
35.3 Replacing an External Server Certificate with a New External Server Certificate Issued by the Same Certificate Authority	376
35.4 Replacing an External Server Certificate with a New External Server Certificate Issued by a Different Certificate Authority	377
35.5 Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes	379
36 Reconfiguring a Zone Certificate After It Expires	381
Part VII Zone Administration	383
37 Management Zone Settings	385
37.1 Accessing Configuration Settings	385
37.1.1 Modifying Configuration Settings at the Zone	385
37.1.2 Modifying Configuration Settings on a Folder	386
37.1.3 Modifying Configuration Settings on a Device	387
37.2 Content Settings	387
37.3 Device Management Settings	387
37.4 Discovery and Deployment Settings	389
37.5 Event and Messaging Settings	389
37.6 Infrastructure Management Settings	389
37.7 Inventory Settings	390
37.8 Reporting Services Settings	391
37.9 Asset Management Settings	391
37.10 Endpoint Security Management Settings	392
37.11 Patch Management Settings	392

A Support for L4 Switches	393
A.1 Predeployment Tasks	393
B Registry Keys	395
C Schedule Types	397
C.1 Date Specific	397
C.2 Event	398
C.3 Now	399
C.4 Recurring	399
D Understanding Communication between ZENworks Components in Multi-Locale Environment	403
E Special System Variables	405
E.1 Windows Special System Variables	405
E.2 Login Script Special System Variables	410
E.3 Novell eDirectory Attribute Special System Variables	411
E.3.1 Syntax	412
E.3.2 Examples	412
E.3.3 Configuring the eDirectory Attribute Special System Variables	413
E.4 Microsoft Active Directory Attribute Special System Variables	414
E.4.1 Syntax	414
E.4.2 Examples	414
E.4.3 Configuring the Active Directory Attribute Special System Variables	415
E.5 Language Variable Special System Variables	416

About This Guide

This *System Administration Reference* provides information about general administrative tasks required to manage your Novell ZENworks 11 system. The information in this guide is organized as follows:

- ◆ Part I, “ZENworks Control Center,” on page 15
- ◆ Part II, “ZENworks Servers and Satellites,” on page 137
- ◆ Part III, “ZENworks System Updates,” on page 215
- ◆ Part IV, “ZENworks Adaptive Agent,” on page 263
- ◆ Part V, “Database Management,” on page 295
- ◆ Part VI, “Disaster Recovery,” on page 355
- ◆ Part VII, “Zone Administration,” on page 383
- ◆ Appendix A, “Support for L4 Switches,” on page 393
- ◆ Appendix B, “Registry Keys,” on page 395
- ◆ Appendix C, “Schedule Types,” on page 397
- ◆ Appendix D, “Understanding Communication between ZENworks Components in Multi-Locale Environment,” on page 403
- ◆ Appendix E, “Special System Variables,” on page 405

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 11 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 11 documentation Web site \(http://www.novell.com/documentation/zenworks11\)](http://www.novell.com/documentation/zenworks11).

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.

- ◆ [Chapter 1, “ZENworks Control Center,” on page 17](#)
- ◆ [Chapter 2, “User Sources,” on page 31](#)
- ◆ [Chapter 3, “Administrators and Administrator Groups,” on page 65](#)
- ◆ [Chapter 4, “ZENworks News,” on page 101](#)
- ◆ [Chapter 5, “ZENworks 11 Product Licensing,” on page 107](#)
- ◆ [Chapter 6, “System Variables,” on page 113](#)
- ◆ [Chapter 7, “Credential Vault,” on page 117](#)
- ◆ [Chapter 8, “Message Logging,” on page 121](#)

1 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.

- ♦ [Section 1.1, “Accessing ZENworks Control Center,” on page 17](#)
- ♦ [Section 1.2, “Accessing ZENworks Control Center through Novell iManager,” on page 19](#)
- ♦ [Section 1.3, “Navigating ZENworks Control Center,” on page 20](#)
- ♦ [Section 1.4, “Changing the Default Login Disable Values,” on page 21](#)
- ♦ [Section 1.5, “Changing the Timeout Value for ZENworks Control Center,” on page 21](#)
- ♦ [Section 1.6, “Using the Config.xml File to Modify ZENworks Control Center Settings,” on page 22](#)
- ♦ [Section 1.7, “Organizing Devices: Folders and Groups,” on page 23](#)
- ♦ [Section 1.8, “Naming Conventions in ZENworks Control Center,” on page 28](#)
- ♦ [Section 1.9, “Bookmarking ZENworks Control Center Locations,” on page 28](#)
- ♦ [Section 1.10, “Troubleshooting ZENworks Control Center,” on page 29](#)

1.1 Accessing ZENworks Control Center

- 1 Using a Web browser that meets the requirements listed in [“Administration Browser Requirements”](#) in the *ZENworks 11 Server 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 [Section 1.4, “Changing the Default Login Disable Values,” on page 21](#).

- 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.

Performing concurrent operations in multiple sessions of ZENworks Control Center might result in an exception

If ZENworks Control Center is opened in multiple browsers and you choose to perform an operation on an object in one browser when the same object is being modified or accessed in the other browser, an exception might occur.

For example, an error might occur if you update an object in one session of ZENworks Control Center when the same object has been deleted in another session of ZENworks Control Center.

1.2 Accessing ZENworks Control Center through Novell iManager

ZENworks 11 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`

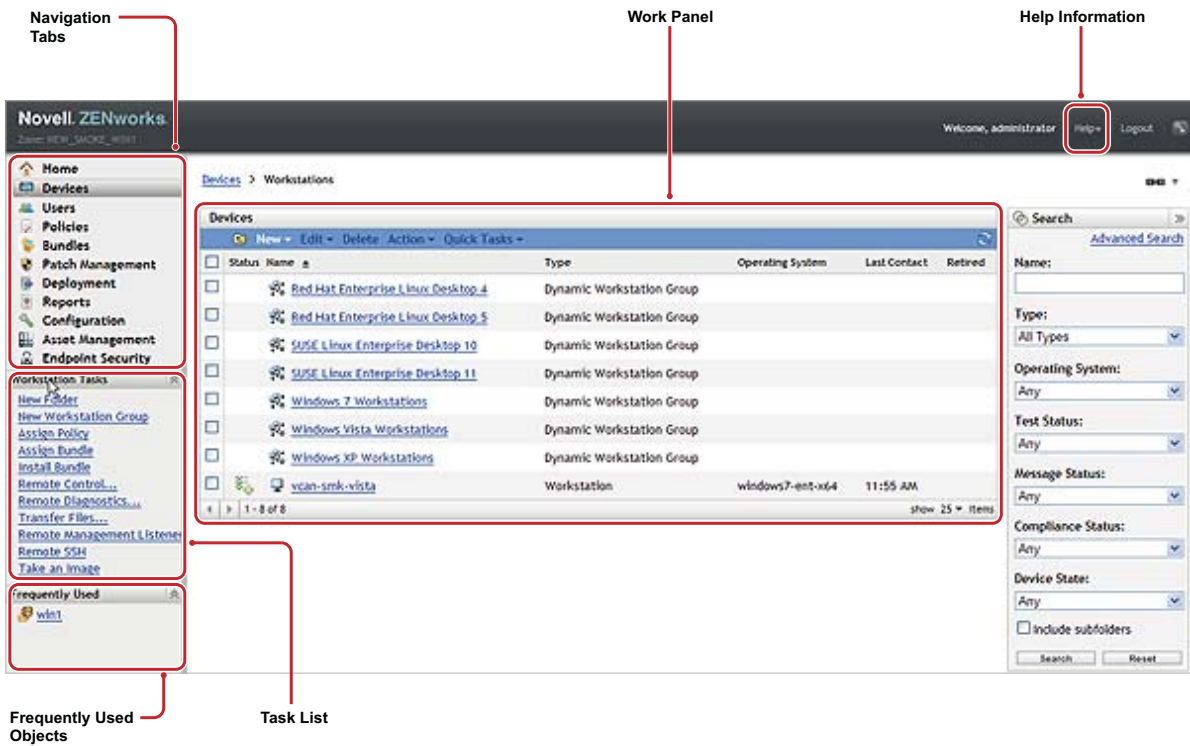
Replace *ZENworks_Server_Address* with the IP address or DNS name of the ZENworks Server. You only need to specify the *port* if the ZENworks server is not using the default port (80 or 443).

- 8 Click the ZENworks icon to launch ZENworks Control Center.

1.3 Navigating ZENworks Control Center

The following Workstations 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. For example, the task list on the Bundles page displays bundle-related tasks and the task list on the Devices page displays device-related tasks.

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 9.2.4, "Restarting the ZENworks Services,"](#) on page 144.

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 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`

- 2 Locate the `<setting id="timeout">` entry.
- 3 Set the timeout value to the same number as you entered in the `config.xml` file.
- 4 Remove the comments surrounding the `<setting id="timeout">` entry (`<!--` and `-->`).
- 5 Save the `custom-config.xml` file.
- 6 Restart the ZENworks Server service.

For instructions, see [Chapter 9, "ZENworks Server," on page 139](#).

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 21](#)), 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 21](#)).

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 service. See [Chapter 9, “ZENworks Server,” on page 139](#) for instructions.

1.7 Organizing Devices: Folders and Groups

Using ZENworks Control Center, you can manage devices by performing tasks directly on individual device objects. However, this approach is not very efficient unless you have only a few devices to manage. To optimize management of a large number of devices, ZENworks lets you organize devices into folders and groups; you can then perform tasks on a folder or group to manage its devices.

You can create folders and groups at any time. However, the best practice is to create folders and groups before you register devices in your zone. This allows you to use registration keys and rules to automatically add devices to the appropriate folders and groups when they register (see “[Creating Registration Keys and Rules](#)” in the *ZENworks 11 Discovery, Deployment, and Retirement Reference*).

- ♦ [Section 1.7.1, “Folders,” on page 23](#)
- ♦ [Section 1.7.2, “Groups,” on page 25](#)
- ♦ [Section 1.7.3, “Assignment Inheritance for Folders and Groups,” on page 28](#)

1.7.1 Folders

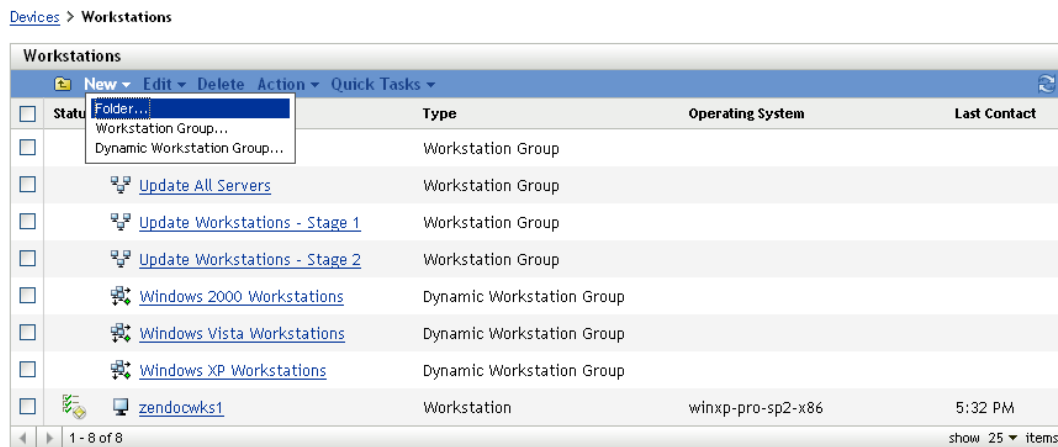
Folders are a great tool to help you organize devices in order to simplify management of those devices. You can apply configuration settings, assign content, and perform tasks on any folder. When you do so, the folder’s devices inherit those settings, assignments, and tasks.

For best results, you should place devices with similar configuration setting requirements in the same folder. If all devices in the folder require the same content or tasks, you can also make content or task assignments on the folder. However, all devices in the folder might not have the same content and task requirements. Therefore, you can organize the devices into groups and assign the appropriate content and tasks to each groups (see “[Groups](#)” on [page 25](#) below).

For example, assume that you have workstations at three different sites. You want to apply different configuration settings to the workstations at the three sites, so you create three folders (`/Workstations/Site1`, `/Workstations/Site2`, and `/Workstations/Site3`) and place the appropriate workstations in each folder. You decide that most of the configuration settings apply to all workstations, so you configure those settings at the Management Zone. However, you want to perform a weekly collection of software and hardware inventory at Site1 and Site2 and a monthly inventory collection at Site3. You configure a weekly inventory collection at the Management Zone and then override the setting on the Site3 folder to apply a monthly schedule. Site1 and Site2 collect inventory weekly, and Site3 collects inventory monthly.

Creating a Folder

- 1 In ZENworks Control Center, click the *Devices* tab.
- 2 Click the *Workstations* folder.



- 3 Click *New > Folder* to display the New Folder dialog box.

New Folder

Name: *

Folder: *

Description:

Fields marked with an asterisk are required.

- 4 In the *Name* field, type a name for the new folder.
When you name an object in the ZENworks Control Center (folders, groups, bundles, policies, and so forth), ensure that the name adheres to the following conventions:
 - ◆ The name must be unique in the folder.

- ◆ Depending on the database software being used for the ZENworks database, uppercase and lowercase letters might not create uniqueness for the same name. The embedded database included with ZENworks 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 Folder 1 in quotes ("Folder 1") when entering it in the zman utility.
- ◆ The following characters are invalid and cannot be used: / \ * ? : " ' < > | ` % ~

5 Click *OK* to create the folder.

You can also use the `workstation-folder-create` and `server-folder-create` commands in the zman utility to create device folders. For more information, see “[Workstation Commands](#)” and “[Server Commands](#)” in the *ZENworks 11 Command Line Utilities Reference*.

1.7.2 Groups

As you can with folders, you can also assign content and perform tasks on device groups. When you do so, the group’s devices inherit those assignments and tasks. Unlike with folders, you cannot apply configuration settings to groups.

Groups provide an additional layer of flexibility for content assignments and tasks. In some cases, you might not want to assign the same content to and perform the same task on all devices in a folder. Or, you might want to assign the same content to and perform tasks on one or more devices in different folders. To do so, you can add the devices to a group (regardless of which folders contain the devices) and then assign the content to and perform the tasks on the group.

For example, let’s revisit the example of the workstations at three different sites (see [Section 1.7.1, “Folders,” on page 23](#)). Assume that some of the workstations at each site need the same accounting software. Because groups can be assigned software, you could create an Accounting group, add the target workstations to the group, and then assign the appropriate accounting software to the group. Likewise, you could use the groups to assign Windows configuration and security policies.

The advantage to making an assignment to a group is that all devices contained in that group receive the assignment, but you only need to make the assignment one time. In addition, a device can belong to any number of unique groups, and the assignments from multiple groups are additive. For example, if you assign a device to group A and B, it inherits the software assigned to both groups.

ZENworks provides both groups and dynamic groups. From the perspective of content assignments or performing tasks, groups and dynamic groups function exactly the same. The only difference between the two types of groups is the way that devices are added to the group. With a group, you must manually add devices. With a dynamic group, you define criteria that a device must meet to be a member of the group, and then devices that meet the criteria are automatically added.

ZENworks include several predefined dynamic server groups (Windows 2000 Servers and Windows 2003 Servers) and dynamic workstation groups (Windows XP Workstation, Windows 2000 Workstation, and Windows Vista Workstations). Any devices that have these operating systems are automatically added to the appropriate dynamic group.

Creating a Group

- 1 In ZENworks Control Center, click the *Devices* tab.
 - 2 If you want to create a group for servers, click the *Servers* folder.
- or

If you want to create a group for workstations, click the *Workstations* folder.

[Devices](#) > [Workstations](#)

Statu	Folder...	Type	Operating System	Last Contact
<input type="checkbox"/>	Workstation Group...	Workstation Group		
<input type="checkbox"/>	Dynamic Workstation Group...	Workstation Group		
<input type="checkbox"/>	Update All Servers	Workstation Group		
<input type="checkbox"/>	Update Workstations - Stage 1	Workstation Group		
<input type="checkbox"/>	Update Workstations - Stage 2	Workstation Group		
<input type="checkbox"/>	Windows 2000 Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	Windows Vista Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	Windows XP Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	zendocwks1	Workstation	winxp-pro-sp2-x86	5:32 PM

- 3 Click *New > Server Group* (or *New > Workstation Group* for workstations) to launch the Create New Group Wizard.

[Devices](#) > [Workstations](#) > [Create New Group](#)

Create New Group
Step 1: Basic Information

Group Name: *

Folder: *

Description:

Fields marked with an asterisk are required.

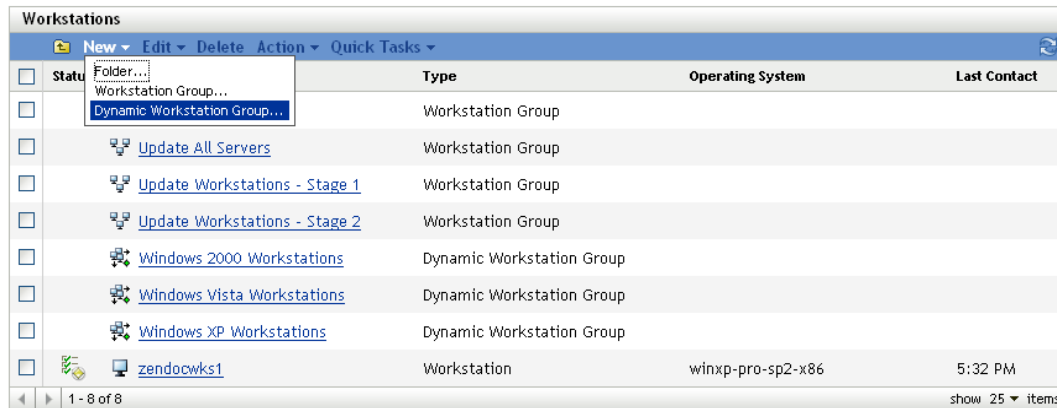
- 4 On the Basic Information page, type a name for the new group in the *Group Name* field, then click *Next*.
The group name must follow the [naming conventions](#).
- 5 On the Summary page, click *Finish* to create the group without adding members.
or
Click *Next* if you want to add members to the group, then continue with [Step 6](#).
- 6 On the Add Group Members page, click *Add* to add devices to the group, then click *Next* when finished adding devices.
- 7 On the Summary page, click *Finish* to create the group.

You can also use the `workstation-group-create` and `server-group-create` commands in the `zman` utility to create device groups. For more information, see “[Workstation Commands](#)” and “[Server Commands](#)” in the *ZENworks 11 Command Line Utilities Reference*.

Creating a Dynamic Group

- 1 In ZENworks Control Center, click the *Devices* tab.
- 2 If you want to create a group for servers, click the *Servers* folder.
or
If you want to create a group for workstations, click the *Workstations* folder.

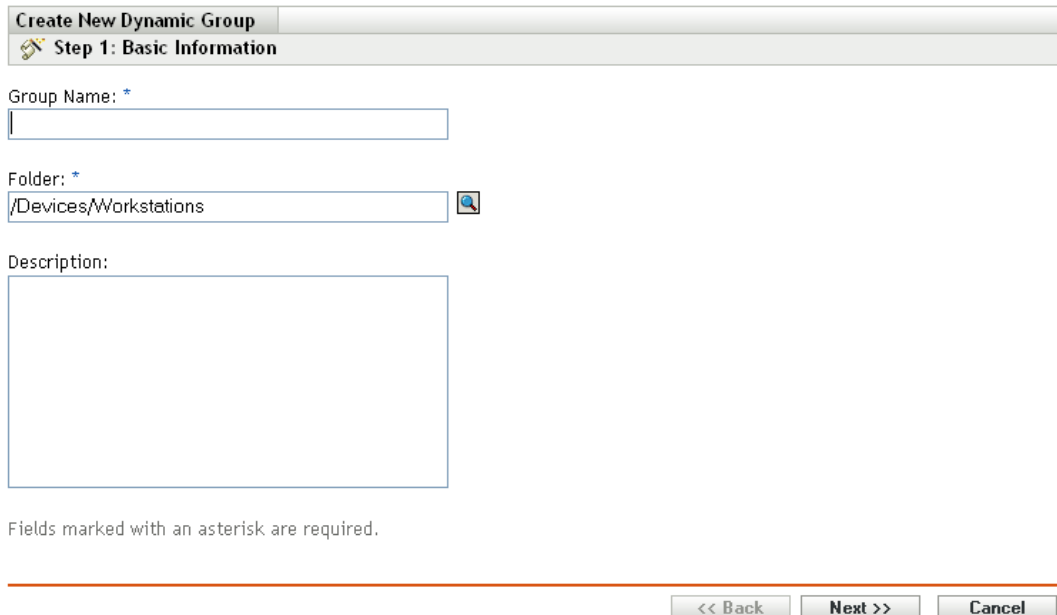
[Devices](#) > [Workstations](#)



Workstations				
	Statu	Type	Operating System	Last Contact
<input type="checkbox"/>	Folder...			
<input type="checkbox"/>	Workstation Group...	Workstation Group		
<input type="checkbox"/>	Dynamic Workstation Group...	Workstation Group		
<input type="checkbox"/>	Update All Servers	Workstation Group		
<input type="checkbox"/>	Update Workstations - Stage 1	Workstation Group		
<input type="checkbox"/>	Update Workstations - Stage 2	Workstation Group		
<input type="checkbox"/>	Windows 2000 Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	Windows Vista Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	Windows XP Workstations	Dynamic Workstation Group		
<input type="checkbox"/>	zendocwks1	Workstation	winxp-pro-sp2-x86	5:32 PM

- 3 Click *New > Dynamic Server Group* (or *New > Dynamic Workstation Group* for workstations) to launch the Create New Group Wizard.

[Devices](#) > [Workstations](#) > [Create New Dynamic Group](#)



Create New Dynamic Group

Step 1: Basic Information

Group Name: *

Folder: *

Description:

Fields marked with an asterisk are required.

- 4 On the Basic Information page, type a name for the new group in the *Group Name* field, then click *Next*.

The group name must follow the [naming conventions](#).

- 5 On the Define Filter for Group Members page, define the criteria that a device must meet to become a member of the group, then click *Next*.

Click the *Help* button for details about creating the criteria.

- 6 On the Summary page, click *Finish* to create the group.

By default, the group membership is calculated at mid-night. For more information on applying device settings, see section [Device Management Settings](#).

1.7.3 Assignment Inheritance for Folders and Groups

This section is applicable only for ZENworks Configuration Management. When you assign content to a folder, all objects (users, devices, subfolders) except groups that are located in the folder inherit the assignment. For example, if you assign BundleA and PolicyB to DeviceFolder1, all devices within the folder (including all devices in subfolders) inherit the two assignments. However, none of the device groups located in DeviceFolder1 inherit the assignments. Essentially, folder assignments do not flow down to groups located within the folder.

1.8 Naming Conventions in ZENworks Control Center

When you name an object in the ZENworks Control Center (folders, bundles, policies, 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 11 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: / \ * ? : " ' < > | ` % ~
- ♦ Ensure that the name of a bundle, policy, bundle folder, bundle group, policy folder, or policy group does not contain the following:
 - ♦ @Sandbox
 - ♦ @Version

1.9 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
- ♦ *Policies* tab

- ◆ *Bundles* 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.

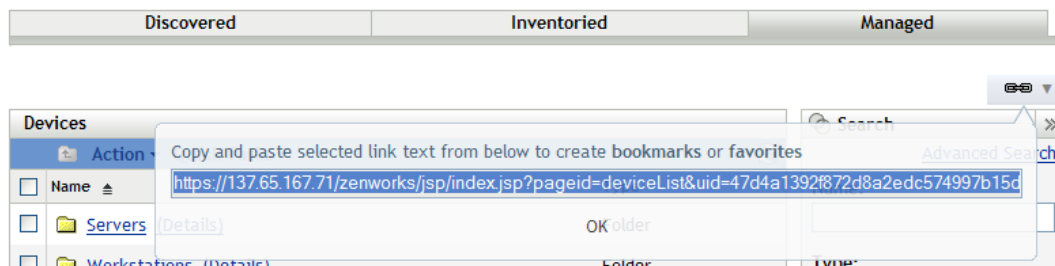
If you are logged in to ZENworks Control Center when you click a bookmark, the location is immediately displayed.

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.

1.10 Troubleshooting ZENworks Control Center

- ◆ “An HTTP request is not redirected to HTTPS if IIS is running on the Primary Server” on page 29
- ◆ “ZENworks Control Center throws a java.lang.NoClassDefFoundError Exception” on page 30
- ◆ “Opening links in a new tab or new window of ZENworks Control Center might fail to display the page” on page 30
- ◆ “Logging in to ZENworks Control Center or navigating within ZENworks Control Center by using Firefox 3.x might display a blank page” on page 30

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

Source: ZENworks 11; 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.

Logging in to ZENworks Control Center or navigating within ZENworks Control Center by using Firefox 3.x might display a blank page

Source: ZENworks 11; ZENworks Control Center.

Explanation: If you are accessing ZENworks Control Center across the network by using Firefox 3.x, you might see a blank page when you log in to ZENworks Control Center or navigate within ZENworks Control Center.

Action: Do one of the following:

- ♦ Use the Firefox Web browser to open `about:config`, then change the value of `browser.cache.memory.enable` to `False`.
- ♦ Refresh the Web browser to reload the ZENworks Control Center page every time ZCC displays a blank page.
- ♦ Use any other ZENworks 11 supported Web browser to access ZENworks Control Center.

For more information about the supported Web browsers, see “[Administration Browser Requirements](#)” in the *ZENworks 11 Server Installation Guide*.

2 User Sources

Novell ZENworks 11 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, assign content to users, 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 23, “Configuring Adaptive Agent Settings after Deployment,” on page 269](#).

The following sections provide instructions to define user sources:

- [Section 2.1, “Prerequisites,” on page 31](#)
- [Section 2.2, “Managing User Sources,” on page 32](#)
- [Section 2.3, “Managing User Source Connections,” on page 37](#)
- [Section 2.4, “Managing Primary Server Connections for User Sources,” on page 39](#)
- [Section 2.5, “Managing Authentication Server Connections for User Sources,” on page 39](#)
- [Section 2.6, “Providing LDAP Load Balancing and Fault Tolerance,” on page 41](#)
- [Section 2.7, “User Source Authentication,” on page 42](#)
- [Section 2.8, “Troubleshooting User Sources,” on page 57](#)
- [Section 2.9, “Troubleshooting User Authentication,” on page 59](#)

2.1 Prerequisites

- Minimum directory version:** Novell eDirectory 8.7.3, Microsoft Active Directory on Windows 2000 SP4, Domain Services for Windows (DSfW) on OES 2 SP2.
- 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.

2.2 Managing User Sources

The following sections contain more information:

- ◆ [Section 2.2.1, “Adding User Sources,” on page 32](#)
- ◆ [Section 2.2.2, “Deleting User Sources,” on page 35](#)
- ◆ [Section 2.2.3, “Editing User Sources,” on page 36](#)
- ◆ [Section 2.2.4, “Adding a Container from a User Source,” on page 37](#)

2.2.1 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.

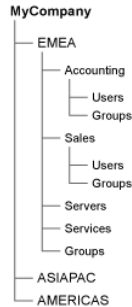
For information about each of the wizard pages, click the *Help* button or refer to the following table:

Wizard Page	Details
Connection Information page	<p>Specify the information required to create a connection to the LDAP directory:</p> <ul style="list-style-type: none"> ◆ 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: This option is applicable for a user source and is displayed only if you are creating a new user source. However, this option is not displayed if you are adding a new connection for an existing user source. 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 <i>Use SSL</i> option is enabled or disabled. If your LDAP server is listening on a different port, select that port number. ◆ Root LDAP Context: Displays the root context for the LDAP directory. This option is available only when you are creating a new user source. 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	<p>(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.</p>
Credentials page	<p>Specify a username and password for accessing the directory:</p> <ul style="list-style-type: none"> ◆ 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. <p>For Novell eDirectory access, use standard LDAP notation. For example:</p> <pre>cn=admin_read_only,ou=users,o=mycompany</pre> <p>For Microsoft Active Directory, use standard domain notation. For example:</p> <pre>AdminReadOnly@mycompany.com</pre> <p>For DSfW, use standard LDAP notation. For example:</p> <pre>cn=admin_read_only,ou=users,dc=mycompany,dc=com</pre> <ul style="list-style-type: none"> ◆ Password: Specify the password for the user you specified in the <i>Username</i> field.

Wizard Page	Details
Authentication Mechanisms page	<p>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.</p> <ul style="list-style-type: none"> ◆ Kerberos: Active Directory or Domain Services for Windows (DSfW). 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, Active Directory, or Domain Services for Windows (DSfW). 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. <p>If <i>Shared Secret</i> 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.</p> <p>If you select both available mechanisms (<i>Kerberos</i> and <i>Username/Password</i> for Active Directory or <i>Username/Password</i> and <i>Shared Secret</i> 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 <i>Kerberos</i> and <i>Username/Password</i> for Active Directory, ZENworks Configuration Management first attempts to use Kerberos authentication. If Kerberos authentication fails, simple Username/Password authentication is used.</p>

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:



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:

- ◆ 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.

2.2.2 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.

2.2.3 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 2.7.1, “Authentication Mechanisms,” on page 45](#).

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 2.3.4, “Updating a Certificate for a User Source,” on page 39](#)
- ♦ **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 LDAP Context: Displays the root context for the LDAP directory. This option is available only when you are creating a new user source.

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*, to modify the optional information about the user source, then click *OK*.

User Containers: For more information, see [Section 2.2.4, “Adding a Container from a User Source,” on page 37](#). You can also remove or rename a user container.


Connections: For more information, see [Section 2.3.2, “Editing User Source Connections,” on page 38](#).

Authentication Servers: For more information, see [Section 2.5, “Managing Authentication Server Connections for User Sources,” on page 39](#).

2.2.4 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.
- 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.

2.3 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 2.3.1, "Creating User Source Connections," on page 37](#)
- ♦ [Section 2.3.2, "Editing User Source Connections," on page 38](#)
- ♦ [Section 2.3.3, "Removing User Source Connections," on page 38](#)
- ♦ [Section 2.3.4, "Updating a Certificate for a User Source," on page 39](#)

2.3.1 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 10, "Satellites,"](#) on page 149.

2.3.2 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*.

2.3.3 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*.

2.3.4 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.
- 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*.

2.4 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*.

2.5 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:

- ♦ [Section 2.5.1, “Assigning a Connection to an Authentication Server,” on page 40](#)
- ♦ [Section 2.5.2, “Removing a Connection,” on page 40](#)
- ♦ [Section 2.5.3, “Reordering Connections,” on page 41](#)

2.5.1 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*.

2.5.2 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*.

2.5.3 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*.

2.6 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 11, 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:

- ♦ [Section 2.6.1, “Using ZENworks Control Center to Define Additional LDAP Servers for a ZENworks Server,”](#) on page 42
- ♦ [Section 2.6.2, “Using the `zman` Command Line Utility to Define Additional LDAP Servers for a ZENworks Server,”](#) on page 42

2.6.1 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*.

2.6.2 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 11 Command Line Utilities Reference*.

2.7 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:

- ♦ [“Enabling Seamless Authentication on a Device” on page 43](#)
- ♦ [“Reducing Device Login Time by Specifying the Default User Source” on page 43](#)
- ♦ [“Identifying the LDAP Directory That the User Has Logged In To” on page 43](#)
- ♦ [“Authenticating in to a ZENworks Server That Has Novell SecretStore Configured” on page 44](#)

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.

Reducing Device Login Time by Specifying the Default User Source

To reduce the 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.

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 in to 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.

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:

- 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/Windows 7/Windows 8:

- 1 Open the Registry Editor.
- 2 Go to `HKLM\Software\Novell\ZCM`.
- 3 Create a DWORD called `HonorWorkstationOnlyLogin` and set its value to 1.

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 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 SecretStore operations, see TID 10091039 in the [Novell Support Knowledgebase](http://support.novell.com/search/kb_index.jsp) (http://support.novell.com/search/kb_index.jsp).

For information on the various authentication mechanisms, credential storage, and disabling user authentication, review the following sections:

- ♦ [Section 2.7.1, “Authentication Mechanisms,” on page 45](#)
- ♦ [Section 2.7.2, “Credential Storage,” on page 55](#)

- ♦ [Section 2.7.3, “Disabling ZENworks User Authentication,” on page 55](#)
- ♦ [Section 2.7.4, “Manually Disabling a DLU on a Workstation,” on page 56](#)
- ♦ [Section 2.7.5, “Using a DLU in a Domain Environment,” on page 56](#)

2.7.1 Authentication Mechanisms

The following mechanisms can be used to authenticate managed devices to the ZENworks Management Zone:

- ♦ [“Kerberos \(Active Directory or Domain Services for Windows\)” on page 45](#)
- ♦ [“Shared Secret” on page 52](#)
- ♦ [“Username/Password \(eDirectory, Active Directory, Domain Service for Windows\)” on page 54](#)

Kerberos (Active Directory or Domain Services for Windows)

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 45](#)
- ♦ [“Enabling Kerberos Authentication While Adding a User Source” on page 46](#)
- ♦ [“Enabling Kerberos Authentication on an Existing User Source” on page 46](#)
- ♦ [“Understanding How Kerberos Authentication and the ZENworks Login Dialog Box Interact” on page 46](#)
- ♦ [“Configuring ZENworks for Performing Kerberos Authentication with Domain Services for Windows \(DSfW\) Server” on page 47](#)

Setting Up Kerberos in your ZENworks Environment

IMPORTANT: If the Active Directory or Domain Services for Windows user source is configured to use only Kerberos authentication mechanism, ensure that the managed device is added to the user source domain.


- 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\)](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.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 atserver 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.
- 3 Restart the ZENserver service.

Enabling Kerberos Authentication While Adding a User Source

You can enable Kerberos authentication while adding a user source. For more information see [Section 2.2.1, “Adding User Sources,” on page 32](#).

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 2-1 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
✓	✓			✓	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.

Configuring ZENworks for Performing Kerberos Authentication with Domain Services for Windows (DSfW) Server

This section provides information about the tasks that need to be performed on DSfW and ZENworks Servers to configure Kerberos authentication for ZENworks login. It also includes information about additional settings and workarounds that need to be performed on the DSfW Server to ensure smooth Kerberos authentication for all users.

Pre-requisites

- ◆ Ensure that the installation and configuration of the DSfW Server is done on the OES machine. For detailed information, see (http://www.novell.com/documentation/oes11/acc_dsfw_lx/?page=/documentation/oes11/acc_dsfw_lx/data/bookinfo.html#bookinfo).
- ◆ Verify the functionality of the DSfW Server. For more information refer to TID 7001884 in the Novell Support Knowledgebase (<http://www.novell.com/support/viewContent.do?externalId=7001884>).
- ◆ Verify and test the features provided in this document, by using:
 - ◆ ZENworks Server : ZEN 11.x server
 - ◆ OES 11 Server : DSfW services installed and configured
 - ◆ Windows Workstation : Windows XP SP3
 - ◆ Windows Support Tools : 5.2.x

Configuring DSfW Server and Windows Workstation

For example, you can use the credentials provided below to configure the DSfW Server and Windows Workstation.

- ◆ Domain name : cit193.com
- ◆ User name for creating key tab file : mcertuser
- ◆ Users for verifying the setup : muser1, muser2

To configure DSfW Server and Windows Workstation, you need to first add the Windows Workstation to the DSfW domain:

- 1 Add the DSfW Server as the DNS Server.
- 2 Select My Computer > Properties, then change the domain for the workstation to the DSfW server's domain.
- 3 Provide the required credentials to add the workstation to the domain.
- 4 Restart the client.
- 5 Install Admin tools and Support tools on the client machine.
- 6 These tools facilitate the DSfW Server management to create the keytab file. You can find the download details at (<http://www.microsoft.com/download/en/details.aspx?id=6315>).
- 7 Install the ZENworks client on the same client by downloading the appropriate ZENworks client set-up from the *http://<ZEN server>/zenworks-setup* server.

- 8 Create a user in DSfW server by using Microsoft Management Console (MMC), which can be associated to the DSfW service by creating a keytab file. In this case, the user for creating the keytab file is `mcertuser`. The expected result is as shown in figure below.

```

C:\WINDOWS\system32\cmd.exe
C:\Program Files\Support Tools>ktpass.exe /princ host/mkercert.users.cit193.com@
CIT193.COM -mapuser mkercert -pass novell -mapop set -ptype KRB5_NT_PRINCIPAL -o
ut mkercert.keytab
Targeting domain controller: s193.cit193.com
Using legacy password setting method
Successfully mapped host/mkercert.users.cit193.com to mkercert.
Key created.
Output keytab to mkercert.keytab:
Keytab version: 0x502
keysize 76 host/mkercert.users.cit193.com@CIT193.COM ptype 1 (KRB5_NT_PRINCIPAL)
vno 5 etype 0x17 (RC4-HMAC) keylength 16 (0x55db0294bc42d6e1b81ae2b5c7f2943f)
C:\Program Files\Support Tools>_

```

ZENworks Server Configuration

Adding DSfW as a User Source in ZENworks

To add a user source and choose Kerberos as the authentication mechanism, see (http://www.novell.com/documentation/zenworks11/zen11_system_admin/?page=/documentation/zenworks11/zen11_system_admin/data/bafywtr.html).

To verify the result, click the user source enabled with Kerberos. The result appears as shown in figure.

[Configuration](#) > `cit193.com`

General	
Name:	cit193.com
Directory Type:	Active Directory
Communication Status:	
Username and Password: (Edit)	cn=administrator,cn=users,dc=cit193,dc=com
Authentication Mechanisms: (Edit)	Kerberos
Use SSL:	Yes (No)
Root Context: (Edit)	dc=cit193,dc=com
Description: (Edit)	

Adding a Kerberos Keytab file

- 1 Log in to ZENworks Control Center.
- 2 In *Infrastructure Management*, select *Configuration > User Source Settings*.

- 3 Add the Kerberos keytab file. After the keytab file is you can view the details as shown in the figure.


[Configuration](#) > **User Source Settings**

User Source Settings
Configuration the settings related to user sources.

Kerberos Authentication

Keytab:

host/mkercert.users.cit193.com@CIT193.COM Delete


Keytab File: 

Active Directory Settings

Configure the range to search for Active Directory group memberships :

Top-level groups only

Top-level groups and all the nested groups

Top-level groups and the nested group depth level upto 

Kerberos Authentication for Windows Workstation

To verify the settings and to ensure the working of Kerberos authentication on the client machine, login to Windows as any user. For example, you can log in as either muser1 or muser2 created using MMC.

The same login credentials are passed on to the ZENworks client and login happens seamlessly to the Windows workstation with the same user.

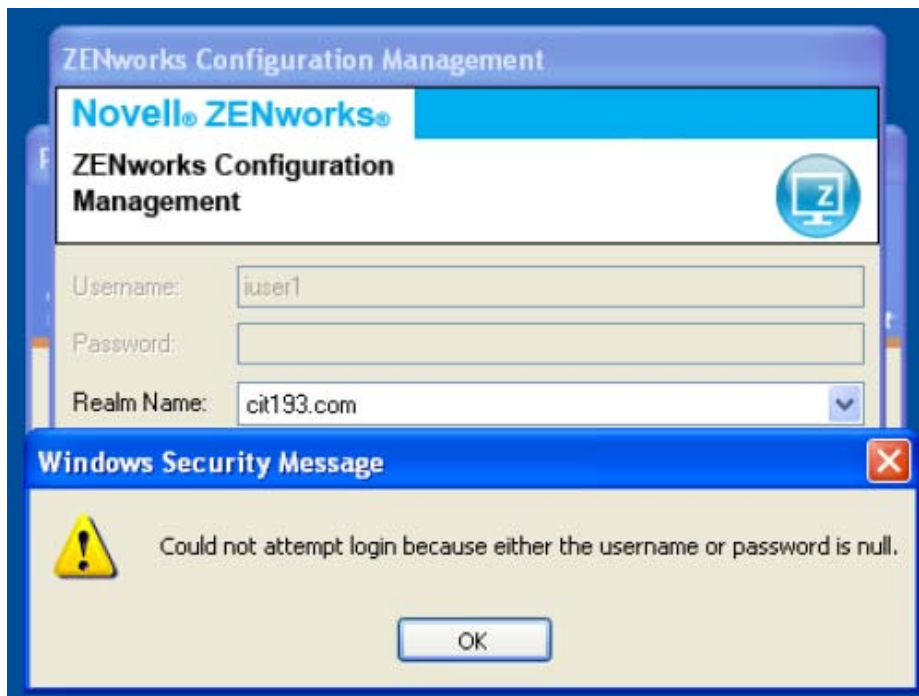
NOTE

- ◆ The user used for creating the keytab file cannot login using ZENworks client as this user is associated with a Service Principal Name (SPN) rather than a User Principal Name (UPN).
- ◆ The UPN attribute is mandatory for a successful ZENworks Configuration Management and DSfW integration. The UPN attribute is created when the user is created by using the MMC.
- ◆ In case of ConsoleOne and iManager tools, the user created will not have the UPN attribute.
- ◆
- ◆
- ◆

Troubleshooting Tips

Issue: A user created by using iManager cannot login seamlessly using the ZENworks client.

The login fails with the error message "Could not attempt login because either username or password is null" as shown in the figure.

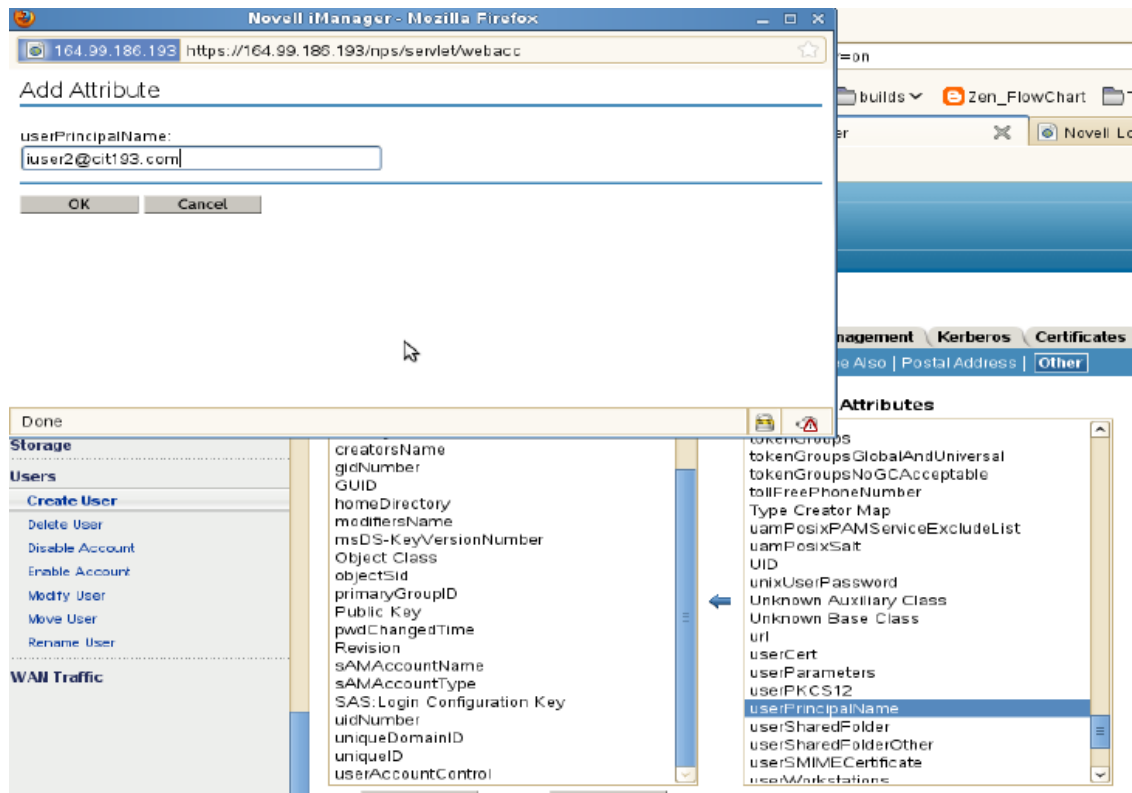


Possible Cause 1: The User Principal Name (UPN) attribute is not set for the users created using iManager.

Workaround: Set the UPN attribute by selecting the user to be supported for Kerberos authentication.

To set the UPN attribute:

- 1 Log in to iManager.
- 2 Select *Directory Administration > Modify object*. Also, set this attribute in the *Others* tab as shown in the figure.



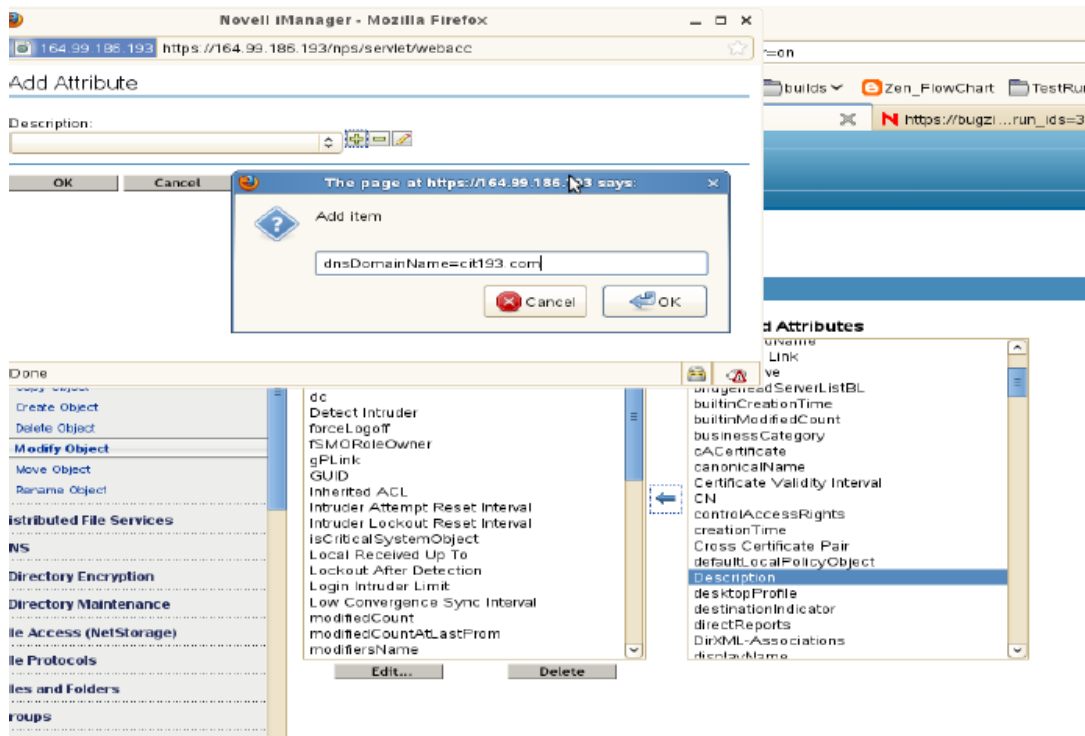
Possible Cause 2: The dnsDomainName attribute is not set at the root level in the DSfW domain.

Workaround: Set the dnsDomainName attribute at the root level of the DSfW domain so that reflects at the user's level.

To set the dnsDomainName attribute:

- 1 Log in to iManager and select the domain root object. For example you can select cit193.com.
- 2 Modify the object and add the *Description* field.
- 3 Add the attribute dnsDomainName=cit193.com.
- 4 Restart the ndsd (Novell Directory) services on the DSfW server.

The existing user once modified and any user objects that you create in future will automatically gets the UserPrincipalName attribute. For more information, see TID 7009221 from the Novell Support Knowledgebase (<http://www.novell.com/support/documentLink.do?externalID=7009221>).



Useful Links

- ◆ For enabling CASA logs, see (<http://www.novell.com/support/viewContent.do?externalId=3418069>)
- ◆ For setting the DNS domain name attribute, see (<http://www.novell.com/support/documentLink.do?externalID=7009221>).
- ◆ For verifying the functionality of the DSfW server, see (<http://www.novell.com/support/viewContent.do?externalId=7001884>).

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/) (<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 2.2.1, “Adding User Sources,”](#) on [page 32](#).

For more information on extending the eDirectory schema, see [“Extending the eDirectory Schema to enable Shared Secret Authentication”](#) on [page 53](#).

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.

Username/Password (eDirectory, Active Directory, Domain Service for Windows)

When using Username/Password authentication with a Novell eDirectory, Microsoft Active Directory, or Domain Service for Windows 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 2.2.1, “Adding User Sources,” on page 32](#).

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 2-2 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

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	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.

2.7.2 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 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 \(http://casa-auth.googlecode.com/files/gtksharp-runtime-2.8.3-win32-0.0.exe\)](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.

2.7.3 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.

2.7.4 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.

2.7.5 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.

2.8 Troubleshooting User Sources

This section contains explanation on some of the user source problems.

- ♦ [“A user group of a Domain Services for Windows user source does not list the members of the group” on page 57](#)
- ♦ [“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 58](#)
- ♦ [“An error occurs after adding an administrator group from Active Directory, when the AD is linked to the AD Root Domain” on page 59](#)

A user group of a Domain Services for Windows user source does not list the members of the group

Explanation: In ZENworks Control Center, a user group of a Domain Services for Windows (DSfW) user source might not list its members even though users have been added as members of this group.

Possible Cause: Objects such as users and user groups listed within the OESSystemObjects container might not have the objectSid attribute defined.

To determine whether an object has the objectSid attribute defined or not, perform the following steps:

- 1 Log in to ConsoleOne.
- 2 Right-click the object.
- 3 Click *Properties*.

4 Click the *Other* tab.

5 Select the Show read only option and check if the objectSid attribute exists.

Action: In ConsoleOne, edit the description of such objects to generate the objectSid attribute for the objects.

Possible Cause: ZENworks Control Center throws an unknown host exception when you choose to list the members of the group:

Example:

```
Root exception is java.net.UnknownHostException: srmdsfw.com
```

Action: Edit the %WINDIR%\system32\drivers\etc\hosts on the Windows server or the /etc/hosts file on the Linux server to add the following entry for the unknown host:

```
ip hostname.com hostname
```

Example:

```
ip srmdsfw.com srmdsfw
```

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.

During the user login, `NalView.exe` runs on the device, 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, the bundle icon 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.

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.

2.9 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) (http://support.novell.com/search/kb_index.jsp).

- ♦ “Incorrect username displayed in the ZENworks Login screen” on page 60
- ♦ “Unable to log in to the ZENworks Server” on page 60
- ♦ “Large number of concurrent client logins might result in login failures” on page 60
- ♦ “How do I enable debug logs on Windows 2003, Windows XP, and Windows Vista devices?” on page 61
- ♦ “How do I enable the CASA debug logs?” on page 61
- ♦ “Logging in to the user source on a ZENworks Server is slow” on page 61
- ♦ “Unable to log into the ZENworks Server when logging in to a Windows Vista device” on page 61
- ♦ “The settings assigned to an eDirectory user are not applied on the device where the user has logged in” on page 62
- ♦ “The ZENworks login screen is not displayed on a device if Novell Client has been uninstalled from the device” on page 62
- ♦ “A DSfW user is unable to use Kerberos authentication to log into a device” on page 62
- ♦ “Unable to create a keytab file for a DSfW server” on page 63

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 \(http://www.novell.com/documentation/oes2/acc_linux_svcs_lx/index.html?page=/documentation/oes2/acc_linux_svcs_lx/data/fbdecbed.html\)](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_atstd 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 \(http://support.novell.com/search/kb_index.jsp\)](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 \(http://support.novell.com/search/kb_index.jsp\)](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*.

A DSfW user is unable to use Kerberos authentication to log into a device

Explanation: If an iManager or ConsoleOne created DSfW user chooses to use Kerberos authentication to log in to a device, the authentication fails.

Action: Modify the user to set the value of the `UserPrincipalName` attribute in the standard domain username format (for example, `user@domain.com`) and then log in to the device again.

or

Use Microsoft Management Console (MMC) for creating DSfW users because the value of the user's `UserPrincipalName` attribute is set by default.

Unable to create a keytab file for a DSfW server

Explanation: During the creation of a keytab file for DSfW server, you might encounter the following error:

```
Unable to find the user in the specified domain
```

Action: Do the following:

- 1 Run the following command to ensure that the DSfW services are running properly:

```
xadcntrl status
```

- 2 (Conditional) If the DSfW services are not running properly, run the following command to restart the DSfW services:

```
xadcntrl reload
```

- 3 Run the following command to create the keytab file again:

```
ktpass /princ host/atsserver.myserver.com@MYSERVER.COM -pass  
atsserver_password -mapuser domain\atsserver -out  
atsserver.keytab -mapOp set -ptype KRB5_NT_PRINCIPAL
```

3 Administrators and Administrator Groups

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, the account could only enable the user to assign bundles to devices, or could 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 3.2.1, “Assigning Super Administrator Rights,” on page 68](#). If you need any further help, contact [Novell Support \(http://www.novell.com/support\)](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 administrator group that lets you group administrators so that you can assign rights and roles to groups rather than assigning rights and roles to individual administrators

To create and modify administrator accounts and assign roles, you can use ZENworks Control Center (ZCC) or the zman command line utility. If you prefer the zman command line utility, see [“Administrator Commands” in the ZENworks 11 Command Line Utilities Reference](#).

However, you can create and modify administrator group accounts and assign roles only through ZENworks Control Center (ZCC).

The following procedures explain how to create and modify administrators and administrator group accounts and assign roles through ZENworks Control Center (ZCC):

- ◆ [Section 3.1, “Managing Administrator Accounts,” on page 66](#)
- ◆ [Section 3.2, “Managing Administrator Rights,” on page 68](#)
- ◆ [Section 3.3, “Managing Administrator Group Accounts,” on page 70](#)
- ◆ [Section 3.4, “Managing Administrator Group Rights,” on page 73](#)
- ◆ [Section 3.5, “Rights Descriptions,” on page 74](#)
- ◆ [Section 3.6, “Managing Administrator Roles,” on page 88](#)

3.1 Managing Administrator Accounts

The following sections help you create and manage administrator accounts:

- ◆ Section 3.1.1, “Creating Administrators,” on page 66
- ◆ Section 3.1.2, “Deleting Administrators,” on page 67
- ◆ Section 3.1.3, “Renaming Administrators,” on page 67
- ◆ Section 3.1.4, “Changing Administrator Passwords,” on page 68

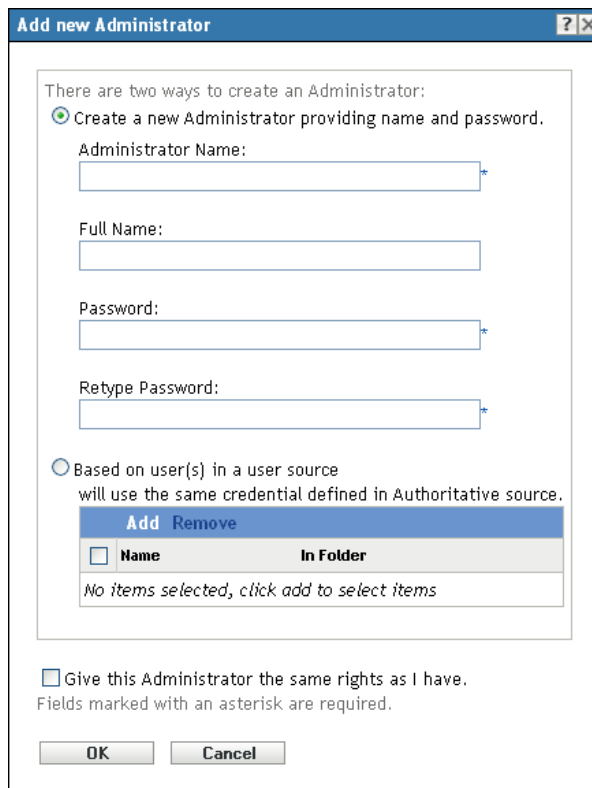
3.1.1 Creating Administrators

To create an administrator account:

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



- 2 In the Administrators panel, click *New > Administrator* 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.

When specifying a name for a new Administrator or User Source, you are not permitted to use characters such as `/ \ * ? : " ' < > | ` % ~`. For more information on conventions to follow, see [Section 1.8, “Naming Conventions in ZENworks Control Center,” on page 28.](#)

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 11 Command Line Utilities Reference*.

3.1.2 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 11 Command Line Utilities Reference*.

3.1.3 Renaming Administrators

You cannot rename an administrator who is created based on an existing user in the user source.

- 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 11 Command Line Utilities Reference*.

3.1.4 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*.
Ensure that the password is at least six characters long.

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

- 1 In ZENworks Control Center, click the  icon located next to the *Logout* 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* option in the top right corner.
The Change Administrator Password dialog box is displayed.
- 3 Fill in the fields, then click *OK*.

3.2 Managing Administrator Rights

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

- ♦ [Section 3.2.1, “Assigning Super Administrator Rights,” on page 68](#)
- ♦ [Section 3.2.2, “Assigning Additional Rights,” on page 69](#)
- ♦ [Section 3.2.3, “Modifying Assigned Rights,” on page 69](#)
- ♦ [Section 3.2.4, “Removing Assigned Rights,” on page 70](#)

3.2.1 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 3.5, “Rights Descriptions,” on page 74](#). 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 Click the *Rights* tab.
- 4 In the General panel, select the *Super Administrator* check box.
- 5 Click *Apply*.

3.2.2 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 Click the *Rights* tab.
- 4 In the Assigned Rights panel, click *Add*, then select the rights you want to assign.
- 5 Fill in the fields.
For more information, see [Section 3.5, “Rights Descriptions,” on page 74.](#)
- 6 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 11 Command Line Utilities Reference](#).

3.2.3 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 3.5, “Rights Descriptions,” on page 74.](#)
- 5 Click *OK*.

Modifying Inventory Report Rights

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 Click the administrator in the *Name* column of the Administrators panel.
- 3 Click the *Rights* tab.
- 4 In the Administrator Tasks panel, click *Inventory Report Rights*.
- 5 Select the check box corresponding to the Folder Name for which you want to modify the rights.
- 6 Click *Edit*, then select the rights you want to assign.
For more information, see [Section 3.5.22, “Inventory Report Rights,” on page 86.](#)

Modifying Asset Management Report Rights

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 Click the administrator in the *Name* column of the Administrators panel.
- 3 Click the *Rights* tab.
- 4 In the Administrator Tasks panel, click *Asset Management Report Rights*.
- 5 Select the check box corresponding to the Folder Name for which you want to modify the rights.
- 6 Click *Edit*, then select the rights you want to assign.
For more information, see [Section 3.5.23, “Asset Management Report Rights,” on page 87.](#)

3.2.4 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 11 Command Line Utilities Reference](#).

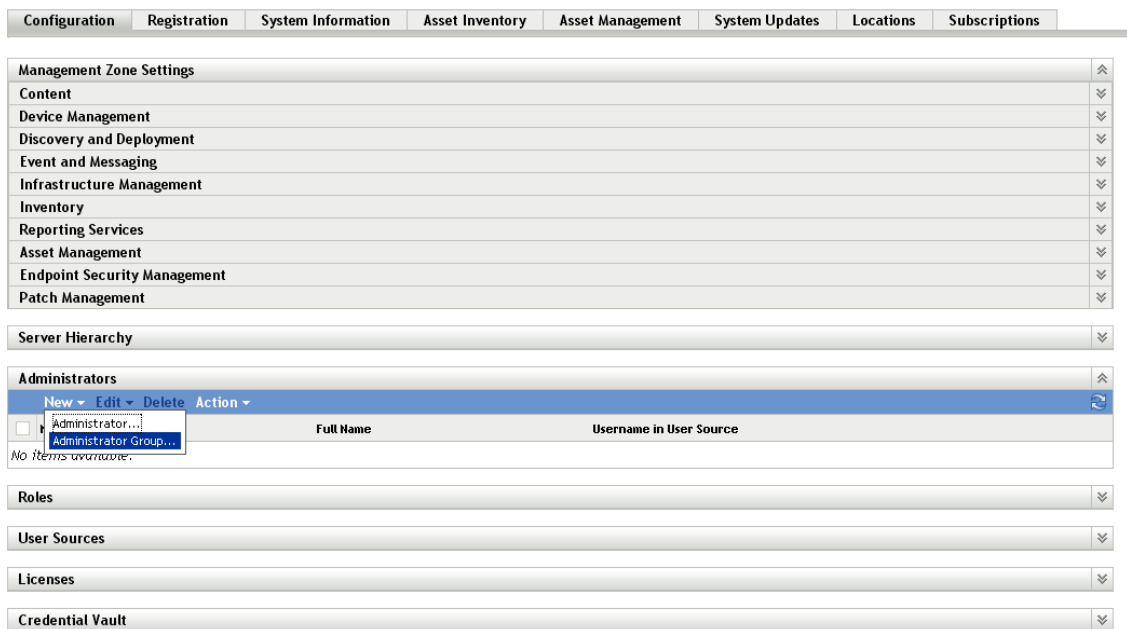
3.3 Managing Administrator Group Accounts

The following sections help you create and manage administrator group accounts:

- ♦ [Section 3.3.1, “Creating Administrator Group Account,” on page 70](#)
- ♦ [Section 3.3.2, “Creating Administrators,” on page 72](#)
- ♦ [Section 3.3.3, “Deleting Administrator Groups,” on page 72](#)
- ♦ [Section 3.3.4, “Renaming Administrator Groups,” on page 73](#)

3.3.1 Creating Administrator Group Account

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



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

Create a new Administrator Group in one of the following ways:

Create a new Administrator Group providing name, description, and members.

Administrator Group Name:

Description:

Add Remove	
<input type="checkbox"/>	Name In Folder
No items selected, click add to select items	

Based on user group(s) in a user source will use the same credential defined in Authoritative source.

Add Remove	
<input type="checkbox"/>	Name In Folder
No items selected, click add to select items	

Import user members of each user group as administrators immediately.

Fields marked with an asterisk are required.

3 Fill in the fields.

The Add New Administrator Group dialog box lets you create a new administrator group account by providing a group name and adding members to the group, or you can create a new administrator group based on an existing user group in the user source. Each administrator group name must be unique.

Create a New Administrator Group by Providing a Name and Adding Members: Select this option if you want to create a new administrator group account by manually specifying the name and adding the members. To add members, click *Add*, then browse for and select the administrators you want.

You can add any number of administrators to the group. You cannot add other administrator groups to the group.

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

Import user members of each user group as administrators immediately: Select this option to enable the user members of the selected user groups to be immediately added as administrators who can only view the ZENworks Control Center pages.

- 4 When you have finished filling in the fields, click *OK* to add the new administrator group to the Administrators panel.
- 5 If you need to change the new administrator group's rights or roles, click the administrator group account and then the *Rights* tab to display the account details:

gp1

Summary Rights

Assigned Rights

Add Edit Delete

Type	Context	Allow	Deny
No items available.			

Note: Every admin receives view rights and they are not removable.

Assigned Roles

Add Edit Delete

Role	Context
No items available.	

Apply Reset

- 6 Using the Assigned Rights panel, modify the assigned rights.
For information about the options on the page, click the *Help* button, or see [“Managing Administrator Group Rights” on page 73](#).
- 7 Using the Assigned Roles panel, modify the assigned roles.
For information about the options on the page, click the *Help* button, or see [Section 3.6, “Managing Administrator Roles,” on page 88](#).
- 8 When you have finished modifying the rights, click *Apply* to save the changes.

3.3.2 Creating Administrators

You can create an administrator account for every user in the administrator group that is created based on an existing user group in the user source.

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the Administrators panel, select the check box next to the administrator group's name that is created based on an existing user group in the user source.
- 3 Click *Action > Create Administrators*.
- 4 Review the message, then click *OK*

3.3.3 Deleting Administrator Groups

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the Administrators panel, select the check box next to the administrator group's name, then click *Delete*.

3.3.4 Renaming Administrator Groups

You cannot rename an administrator group that is created based on an existing user groups in the user source.

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the Administrators panel, select the check box next to the administrator group's name, click *Edit*, then click *Rename*.
- 3 Specify the new name, then click *OK*.

3.4 Managing Administrator Group Rights

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

- ♦ [Section 3.4.1, "Assigning Additional Rights," on page 73](#)
- ♦ [Section 3.4.2, "Modifying Assigned Rights," on page 73](#)
- ♦ [Section 3.4.3, "Removing Assigned Rights," on page 73](#)

3.4.1 Assigning Additional Rights

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 Click the administrator group in the *Name* column of the Administrators panel.
- 3 Click the *Rights* tab.
- 4 In the Assigned Rights panel, click *Add*, then select the rights you want to assign.
- 5 Fill in the fields.
For more information, see [Section 3.5, "Rights Descriptions," on page 74](#).
- 6 Click *OK*.

3.4.2 Modifying Assigned Rights

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 Click the administrator group 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 3.5, "Rights Descriptions," on page 74](#).
- 5 Click *OK*.

3.4.3 Removing Assigned Rights

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 Click the administrator group in the *Name* column of the Administrators pane.
- 3 Select the check box next to the assigned right.
- 4 Click *Delete*.

3.5 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 enables the administrator to assign bundles to devices but doesn't allow the administrator to create bundles, or 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 66](#).

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 3.2.2, “Assigning Additional Rights,” on page 69](#), [Section 3.2.3, “Modifying Assigned Rights,” on page 69](#), or [Section 3.2.4, “Removing Assigned Rights,” on page 70](#).

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

- ◆ [Section 3.5.1, “Administrator Rights,” on page 75](#)
- ◆ [Section 3.5.2, “Bundle Rights,” on page 75](#)
- ◆ [Section 3.5.3, “Contract Management Rights,” on page 76](#)
- ◆ [Section 3.5.4, “Credential Rights,” on page 76](#)
- ◆ [Section 3.5.5, “Deployment Rights,” on page 77](#)
- ◆ [Section 3.5.6, “Device Rights,” on page 77](#)
- ◆ [Section 3.5.7, “Discovery Rights,” on page 78](#)
- ◆ [Section 3.5.8, “Document Rights,” on page 78](#)
- ◆ [Section 3.5.9, “Inventoried Device Rights,” on page 79](#)
- ◆ [Section 3.5.10, “LDAP Import Rights,” on page 79](#)
- ◆ [Section 3.5.11, “License Management Rights,” on page 80](#)
- ◆ [Section 3.5.12, “Location Rights,” on page 80](#)
- ◆ [Section 3.5.13, “Patch Management Rights,” on page 80](#)
- ◆ [Section 3.5.14, “Policy Rights,” on page 81](#)
- ◆ [Section 3.5.15, “Quick Task Rights,” on page 82](#)
- ◆ [Section 3.5.16, “Remote Management Rights,” on page 83](#)
- ◆ [Section 3.5.17, “Reporting Rights,” on page 84](#)
- ◆ [Section 3.5.18, “Subscription Rights,” on page 84](#)
- ◆ [Section 3.5.19, “User Rights,” on page 84](#)
- ◆ [Section 3.5.20, “ZENworks User Group Rights,” on page 85](#)

- ♦ [Section 3.5.21, “Zone Rights,” on page 85](#)
- ♦ [Section 3.5.22, “Inventory Report Rights,” on page 86](#)
- ♦ [Section 3.5.23, “Asset Management Report Rights,” on page 87](#)

3.5.1 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.
- ♦ **Create/Delete Groups:** Allow or deny the administrator the rights necessary to create or delete administrator group accounts.
- ♦ **Modify Groups:** Allow or deny the administrator the rights necessary to modify administrator group 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*.

3.5.2 Bundle Rights

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

- ♦ [“Contexts” on page 75](#)
- ♦ [“Privileges” on page 75](#)

Contexts

To select the folder that contains the bundles 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 bundles, groups, and folders listed in the [Contexts](#) section.

The following rights are available:

- ♦ **Modify Groups:** Allow or deny the administrator the rights necessary to modify the name or the description of the bundle 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 bundles contained in bundle groups.
- ♦ **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.
- ♦ **Author:** Allow or deny the administrator the rights necessary to perform changes on bundles, which can be then tested in a testing environment.
- ♦ **Publish:** Allow or deny the administrator the rights necessary to publish tested changes into the production environment. If you assign the publish rights, the author rights also gets assigned by default.
- ♦ **Modify Settings:** Allow or deny the administrator the rights necessary to modify settings.

NOTE: If you have the Publish rights, then you must also have the Modify Settings right to edit the bundle details such as the bundle's description, ZENworks Explorer Folder Path, system requirements, and publish a bundle that has existing assignments to a new version. For more information on this, see the trouble shooting scenarios in the "[Troubleshooting](#)" chapter of the [ZENworks 11 Software Distribution Reference](#)

- ♦ **Assign Bundles:** Allow or deny the administrator the rights necessary to assign bundles to the devices or users.

3.5.3 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 76](#)
- ♦ ["Privileges" on page 76](#)

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.

3.5.4 Credential Rights

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

- ♦ ["Contexts" on page 77](#)
- ♦ ["Privileges" on page 77](#)

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 7, “Credential Vault,” on page 117](#).

3.5.5 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 11 Discovery, Deployment, and Retirement Reference](#).

3.5.6 Device Rights

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

- ♦ [“Contexts” on page 77](#)
- ♦ [“Privileges” on page 77](#)

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.
- ♦ **Assign Bundles:** Allow or deny the administrator the rights necessary to assign bundles to devices.
- ♦ **Assign Policies:** Allow or deny the administrator the rights necessary to assign policies to devices.
- ♦ **Manage ERI:** Allow or deny the administrator the rights necessary to manage the Emergency Recovery Information (ERI) for device objects. This includes downloading ERI files to use with an Emergency Recovery Disk, viewing ERI file passwords, and deleting ERI files.

3.5.7 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.

3.5.8 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 78](#)
- ♦ [“Privileges” on page 78](#)

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.

3.5.9 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 79](#)
- ♦ [“Privileges” on page 79](#)

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.

3.5.10 LDAP Import Rights

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

3.5.11 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 80](#)
- ♦ [“Privileges” on page 80](#)

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.

3.5.12 Location Rights

The Location Rights dialog box lets you modify rights associated with locations in your Management zone. The following rights are available:

- ♦ **Modify:** Allow or deny the administrator the rights necessary to modify the locations
- ♦ **Create/Delete:** Allow or deny the administrator the rights necessary to create or delete locations.

3.5.13 Patch Management Rights

The Patch Management Rights dialog box lets you determine which patch management functions an administrator can have.

The following rights are available:

- ♦ **Patch Deploy:** Allow or deny the administrator the rights necessary to deploy patches.
- ♦ **Patch Enable:** Allow or deny the administrator the rights necessary to enable a disabled patch.
- ♦ **Patch Disable:** Allow or deny the administrator the rights necessary to disable a patch.
- ♦ **Patch Update Cache:** Allow or deny the administrator the rights necessary to cache patches.
- ♦ **Assign to Baseline:** Allow or deny the administrator the rights necessary to assign a patch to the baseline.
- ♦ **Remove from Baseline:** Allow or deny the administrator the rights necessary to remove a patch that was assigned to the baseline.
- ♦ **View Patch Details:** Allow or deny the administrator the rights necessary to view patch details.
- ♦ **Export Patch:** Allow or deny the administrator the rights necessary to export patches.

- ♦ **Scan Now:** Allow or deny the administrator the rights necessary to start a scan.
- ♦ **Remove Patch:** Allow or deny the administrator the rights necessary to remove a patch.
- ♦ **Recalculate Baseline:** Allow or deny the administrator the rights necessary to recalculate the baseline.
- ♦ **Configure:** Allow or deny the administrator the rights necessary to configure the patch.

3.5.14 Policy Rights

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

- ♦ [“Contexts” on page 81](#)
- ♦ [“Privileges” on page 81](#)

Contexts

To select the folder that contains the policies 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 policies, including policy groups and folders listed in the [Contexts](#) section

The following rights are available:

- ♦ **Modify Groups:** Allow or deny the administrator the rights necessary to modify policy groups.
- ♦ **Create/Delete Groups:** Allow or deny the administrator the rights necessary to create or delete policy groups.
- ♦ **Modify Group Membership:** Allow or deny the administrator the rights necessary to modify the list of policies contained in policy groups.
- ♦ **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.
- ♦ **Author:** Allow or deny the administrator the rights necessary to create, modify, and delete policies. If you enable this right, you must also specify the type of policies (Configuration policies, Security policies, or both) that the administrator can author by enabling the *Manage Configuration Policies* right and/or the *Manage Security Policies* right.
- ♦ **Publish:** Allow or deny the administrator the rights necessary to publish policies. If you enable this right, you must also specify the type of policies (Configuration policies, Security policies, or both) that the administrator can publish by enabling the *Manage Configuration Policies* right and/or the *Manage Security Policies* right.
- ♦ **Assign Policies:** Allow or deny the administrator the rights necessary to assign policies to the devices or users. If you enable this right, you must also specify the type of policies (Configuration policies, Security policies, or both) that the administrator can assign by enabling the *Manage Configuration Policies* right and/or the *Manage Security Policies* right.

- ♦ **Manage Configuration Policies:** Apply the *Author*, *Publish*, and *Assign Policies* rights to Configuration policies. For example, to create, delete, and modify Configuration policies, both the *Author* right and this right must be enabled. To publish Configuration policies, both the *Publish* right and this right must be enabled. To assign Configuration policies, both the *Assign Policies* right and this right must be enabled.

Configuration policies are provided by ZENworks Configuration Management and include the Windows Configuration policies (Browser Bookmarks policy, Dynamic Local User policy, Local File Rights policy, Printer policy, Remote Management policy, Roaming Profile policy, SNMP policy, Windows Group policy, and ZENworks Explorer Configuration policy) and the Linux Configuration policies (External Services policy and Puppet policy).

- ♦ **Manage Security Policies:** Apply the *Author*, *Publish*, and *Assign Policies* rights to Security policies. For example, to create, delete, and modify Security policies, both the *Author* right and this right must be enabled. To publish Security policies, both the *Publish* right and this right must be enabled. To assign Security policies, both the *Assign Policies* right and this right must be enabled.

Security policies are provided by ZENworks Endpoint Security Management (Application Control policy, Communication Hardware policy, Data Encryption policy, Firewall policy, Location Assignment policy, Scripting policy, Security Settings policy, Storage Device Control policy, USB Connectivity policy, VPN Enforcement policy, and Wi-Fi policy) and ZENworks Full Disk Encryption (Full Disk Encryption policy).

3.5.15 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, Bundles 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” on page 82](#)
- ♦ [“Privileges” on page 82](#)

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.
- ♦ **Install/Launch Bundles:** Allow or deny the administrator the rights necessary to install or launch bundles. The administrator must also have Assign Bundles rights for devices to install or launch bundles using Quick Task options.
- ♦ **Manage Endpoint Security Settings and Tasks:** Allow or deny the administrator the rights necessary to use Quick Tasks to clear the user-defined encryption password, the local client self defense setting, and the local firewall registration setting. Clearing the local client self defense and firewall registration settings overrides any local changes and reinstates the policy settings.
- ♦ **Inventory:** Allow or deny the administrator the rights necessary to inventory devices.
- ♦ **Apply Image:** Allow or deny the administrator the rights necessary to apply an image to devices.
- ♦ **Take Image:** Allow or deny the administrator the rights necessary to take an image of a device.

3.5.16 Remote Management Rights

The Remote Management Rights dialog box lets you select folders containing devices and users, then modify the Remote Management rights associated with those folders. Granting Remote Execute rights allows the administrator to execute processes in the system space.

- ♦ [“Contexts” on page 83](#)
- ♦ [“Privileges” on page 83](#)

Contexts

To select the folder that contains the devices and 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 administrator rights to modify the Remote Management rights associated with the contexts (folders) you selected in the [Contexts](#) section.

The following rights are available:

- ♦ **Remote Control:** Allow or deny the administrator the rights necessary to remotely control devices.
- ♦ **Remote View:** Allow or deny the administrator the rights necessary to remotely view devices.
- ♦ **Transfer files:** Allow or deny the administrator the rights necessary to transfer files to or from devices.
- ♦ **Remote Execute:** Allow or deny the administrator the rights necessary to remotely execute processes on devices.
- ♦ **Remote Diagnostics:** Allow or deny the administrator the rights necessary to perform remote diagnostic procedures on devices.
- ♦ **Unblock Remote Management Service:** Allow or deny the administrator the rights necessary to unblock the Remote Management Service.

3.5.17 Reporting Rights

The Reporting Rights dialog box lets you select folders containing reports, then allows or denies you the rights to create, delete, execute, or publish reports.

- ♦ [“Contexts” on page 84](#)
- ♦ [“Privileges” on page 84](#)

Contexts

To select the folder that contains the reports 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 reports associated with the contexts (folders) you selected in the [Contexts](#) section.

- ♦ **Execute/Publish Report Right:** Allows the administrator to schedule reports and manage historical report instances. This right does not allow administrators to create or delete reports or folders within the folder to which the right is assigned. However, the administrator can copy the reports from one folder to another if the destination folder is assigned the Create/Delete Reports right.
- ♦ **Create/Delete Report Right:** Includes the Execute/Publish Report right. It allows the administrators to create, modify, or delete Web Intelligence documents and folders within the folder to which the right is conferred.

3.5.18 Subscription Rights

The Subscription Rights dialog box lets you allow or deny the administrator the rights to create and delete subscriptions.

3.5.19 User Rights

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

- ♦ [“Contexts” on page 84](#)
- ♦ [“Privileges” on page 85](#)

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*.
- ♦ **Assign Policies:** Allow or deny the administrator the rights necessary to assign policies to users.
- ♦ **Assign Bundles:** Allow or deny the administrator the rights necessary to assign bundles to users.

3.5.20 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*.
- ♦ **Assign Policies:** Allow or deny the administrator the rights necessary to modify the list of policies contained in policy groups.
- ♦ **Assign Bundles:** Allow or deny the administrator the rights necessary to modify the list of bundles contained in policy groups.

3.5.21 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.

Modifying user sources includes adding, removing, or renaming user sources and assigning policies or bundles to user sources.

- ♦ **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.
- ♦ **Create/Delete Local Products:** Allow or deny the administrator the rights necessary to create or delete local software products in the ZENworks Knowledgebase used for asset inventory.
- ♦ **Manage FDE PBA Override:** Allow or deny the administrator the rights necessary to use the Pre-Boot Authentication Override tool (*Full Disk Encryption > Pre-Boot Authentication Override*). The Pre-Boot Authentication Override tool generates challenge/response data that a user can enter during the PBA login to override the PBA and access the device's encrypted drives (for example, in the case of a forgotten password).
- ♦ **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.

3.5.22 Inventory Report Rights

The Inventory Report Rights panel allows you to manage each administrator's rights for each folder and its reports.

Each report folder has rights associated with it, governing all the reports within that folder. For example, if you have full rights, you can edit a report; but with view/execute rights, you can only see the report and run it. With inventory report rights, you can limit who has access to certain reports and who can edit them. The report folder type, custom or standard, and the report name are listed along with the rights associated with the folder. The choices are *Remove All Rights*, *Assign View/Execute Rights*, and *Assign Full Rights*.

Available Tasks

You can perform the following tasks:

Task	Steps	Additional Details
Remove all rights	<ol style="list-style-type: none">1. Select the report folder.2. Click <i>Edit > Remove All Rights</i>.	This removes all rights to the folder, so the specified administrator cannot see it.
Assign view/execute rights	<ol style="list-style-type: none">1. Select the report folder.2. Click <i>Edit > Assign View/Execute Rights</i>.	This allows the specified administrator to view and execute a report in the specified folder, but not to edit, move, or delete a report in that folder.
Assign full rights	<ol style="list-style-type: none">1. Select the report folder.2. Click <i>Edit > Assign Full Rights</i>.	This gives the specified administrator full rights to create, edit, move, and delete reports. For standard reports, this setting is the same as <i>View/Execute</i> , because you cannot alter a standard report.

3.5.23 Asset Management Report Rights

The Asset Management Report Rights panel allows you to manage each administrator's rights for each folder and its reports.

Each report folder has rights associated with it, governing all the reports within that folder. For example, if you have full rights, you can edit a report; but with view/execute rights, you can only see the report and run it. With asset management report rights, you can limit who has access to certain reports and who can edit them. The report folder type, custom or standard, and the report name are listed along with the rights associated with the folder. The choices are *Remove All Rights*, *Assign View/Execute Rights*, and *Assign Full Rights*.

Available Tasks

You can perform the following tasks:

Task	Steps	Additional Details
Remove all rights	<ol style="list-style-type: none">1. Select the report folder.2. Click <i>Edit > Remove All Rights</i>.	This removes all rights to the folder, so the specified administrator cannot see it.
Assign view/execute rights	<ol style="list-style-type: none">1. Select the report folder.2. Click <i>Edit > Assign View/Execute Rights</i>.	This allows the specified administrator to view and execute a report in the specified folder, but not to edit, move, or delete a report in that folder.

Task	Steps	Additional Details
Assign full rights	<ol style="list-style-type: none"> 1. Select the report folder. 2. Click <i>Edit > Assign Full Rights</i>. 	This gives the specified administrator full rights to create, edit, move, and delete reports. For standard reports, this setting is the same as <i>View/Execute</i> , because you cannot alter a standard report.

3.6 Managing Administrator Roles

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

- ◆ [Section 3.6.1, “Understanding Administrator Roles,” on page 88](#)
- ◆ [Section 3.6.2, “Creating a Role,” on page 91](#)
- ◆ [Section 3.6.3, “Assigning Roles,” on page 92](#)
- ◆ [Section 3.6.4, “Editing a Role,” on page 96](#)
- ◆ [Section 3.6.5, “Renaming a Role,” on page 99](#)
- ◆ [Section 3.6.6, “Deleting a Role,” on page 99](#)

3.6.1 Understanding Administrator Roles

The roles feature allows Super Administrator 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. You must be logged-in as a Super Administrator to create and manage the roles.

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

- ◆ [“Roles Panel” on page 88](#)
- ◆ [“Role Settings Page” on page 89](#)
- ◆ [“Administrator or Administrator Groups Settings Page” on page 90](#)

Roles Panel

The Roles panel displays the following information:

Figure 3-1 Roles Panel

Roles				
New Edit ▾ Delete				
<input type="checkbox"/>	Name	Types	Allow	Deny
<input type="checkbox"/>	Administrator Rights	Administrator Rights	GR CD	
<input type="checkbox"/>	Bundles Role	Bundle Rights	M CD MG CDG MF CDF	MGM
<input type="checkbox"/>	Devices Role	Device Rights	M MG MGM MF MS AP AB	CD CDG CDF

1 - 2 of 2 items show 5 ▾ items

- ◆ **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 3-2 Role Settings Page

[Configuration](#) > Bundles Role

General ⤴

Object type: Role

GUID: f4ccf0bcf5b8ab9007540f078572101e

Description:

Rights ⤴

Add Edit Delete

<input type="checkbox"/>	Type	Allow	Deny
<input type="checkbox"/>	Administrator Rights	GR CD	
<input type="checkbox"/>	Bundle Rights	M CD MG CDG MF CDF	MGM

show 5 items

Assigned Administrators ⤴

Add Edit Delete

<input type="checkbox"/>	Administrator	Type	Context
<input type="checkbox"/>	Admin1	Administrator Rights Bundle Rights	Zone /Bundles

show 5 items

- ♦ **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 and administrator groups assigned to this role. You can add, edit, or delete the administrators in this panel.

Administrator or Administrator Groups Settings Page

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

Figure 3-3 Administrator Settings Page

General ⌵

Administrator Full Name:

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

<input type="checkbox"/>	Type	Context	Rights
No items available.			

Note: Every admin receives view rights and they are not removable.

Assigned Roles ⌵

Add Edit Delete

<input type="checkbox"/>	Role	Type	Context
<input type="checkbox"/>	Bundles Role	Administrator Rights Bundle Rights	Zone /Bundles

1 - 1 of 1 show 5 ▾ items

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

Figure 3-4 Administrator Groups Settings Page

Assigned Rights ⌵

Add ▾ Edit Delete

<input type="checkbox"/>	Type	Context	Rights
No items available.			

Note: Every admin receives view rights and they are not removable.

Assigned Roles ⌵

Add Edit Delete

<input type="checkbox"/>	Role	Type	Context
<input type="checkbox"/>	Bundles Role	Administrator Rights Bundle Rights	Zone /Bundles

1 - 1 of 1 show 5 ▾ items

- ◆ **General panel:** This panel is not displayed for an administrator group. 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.
- ◆ **Assigned 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.

3.6.2 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:

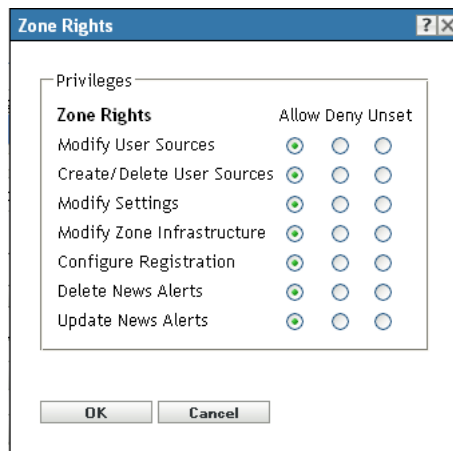
- 1 In ZENworks Control Center, click *Configuration* in the left pane.
- 2 In the Roles panel, click *New* to open the Add New Role dialog box:

The 'Add new Role' dialog box features a 'Name' field with an asterisk, a 'Description' text area, and a 'Rights' section. The 'Rights' section includes 'Add', 'Edit', and 'Delete' buttons, a table with columns 'Type', 'Allow', and 'Deny', and a 'No items available.' message. At the bottom are 'OK' and 'Cancel' buttons.

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

The 'Rights' dialog box shows the 'Add' button dropdown menu open, listing various rights types: Administrator Rights, Bundle Rights, Contract Management Rights, Credential Rights, Deployment Rights, Device Rights, Discovery Rights, Document Rights, Inventoried Device Rights, LDAP Import Rights, License Management Rights, Location Rights, Patch Management Rights, Policy Rights, Quick Task Rights, Remote Management Rights, Reporting Rights, Subscriptions Rights, User Rights, ZENworks User Group Rights, and Zone Rights.

- 5 In the following 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.

- 6 Click *OK* to continue.
- 7 To add another rights type to the role, repeat [Step 4](#) through [Step 6](#).
- 8 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 3.6.3, "Assigning Roles,"](#) on page 92.

3.6.3 Assigning Roles

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

- ♦ ["Assigning Roles to Administrators"](#) on page 92
- ♦ ["Assigning Administrators to Roles"](#) on page 94

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 or an administrator group name in the *Name* column and then click the *Rights* tab to open the administrator's settings page:

General

Administrator Full Name:

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

<input type="checkbox"/> Type	Context	Rights
No items available.		

Note: Every admin receives view rights and they are not removable.

Assigned Roles

Add Edit Delete

<input type="checkbox"/> Role	Type	Context
<input type="checkbox"/> Bundles Role	Administrator Rights Bundle Rights	Zone /Bundles

1 - 1 of 1 show 5 items

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

Select Role

Select a role

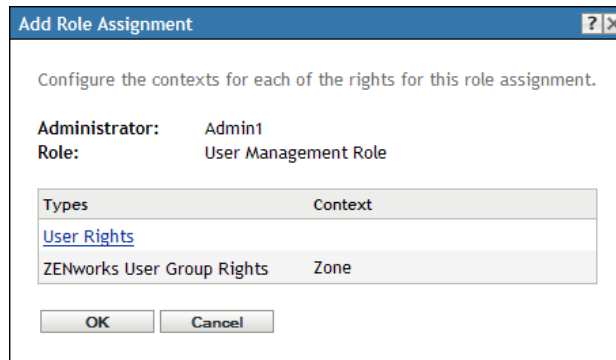
Look in:

Name filter: Items of type:

Name	Type
Asset Management Role	Role
User Management Role	Role

1 - 2 of 2 show 25 items

- 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:

General		
Object type:	Role	
GUID:	f4ccf0bcf5b8ab9007540f078572101e	
Description:	<input type="text" value="Role to restrict rights to Bundles."/>	

Rights		
Add Edit Delete		
<input type="checkbox"/>	Type	Allow Deny
<input type="checkbox"/>	Administrator Rights	GR CD
<input type="checkbox"/>	Bundle Rights	M CD MG CDG MF CDF MGM

Assigned Administrators		
Add Edit Delete		
<input type="checkbox"/>	Administrator	Type Context
<input type="checkbox"/>	Admin1	Administrator Rights Bundle Rights Zone /Bundles

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

Select Administrator [?] [X]

Select an administrator

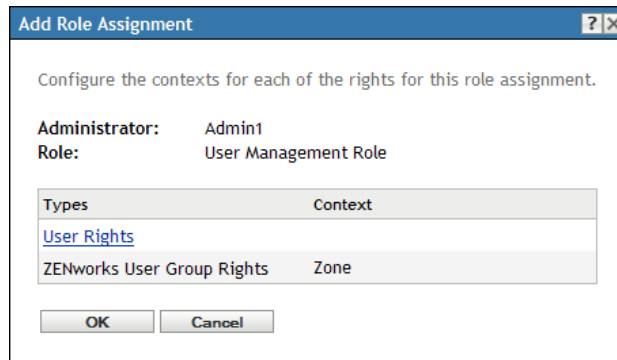
Look in: [v] [📁]

Name filter: Items of type: [v]

Name	Type
Admin1	Administrator
Admin2	Administrator

1 - 2 of 2 show 25 items

- 3 Browse for and select the administrators or administrator groups 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.

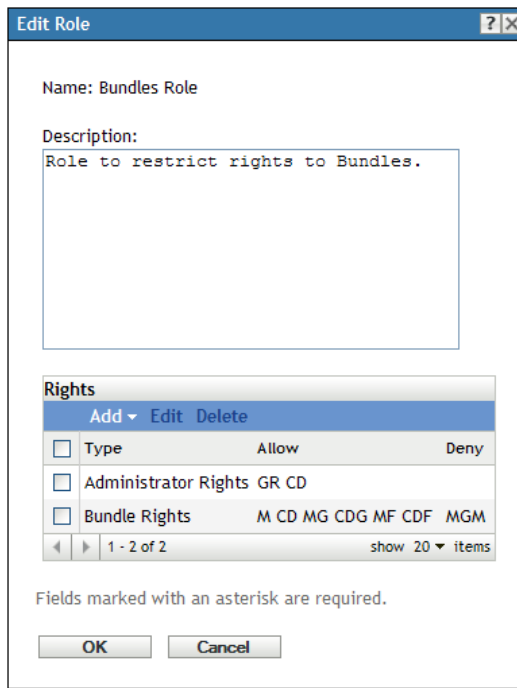
Role types that are designated with the *Zone* context are not clickable because they are generally available.
 - 4b In the subsequent Select Context dialog box, click *Add* and browse for a ZENworks Control Center context.

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.

3.6.4 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.
- 2 In the Roles panel, select the check box for the role to be edited and click *Edit* to open the Edit Role dialog box:

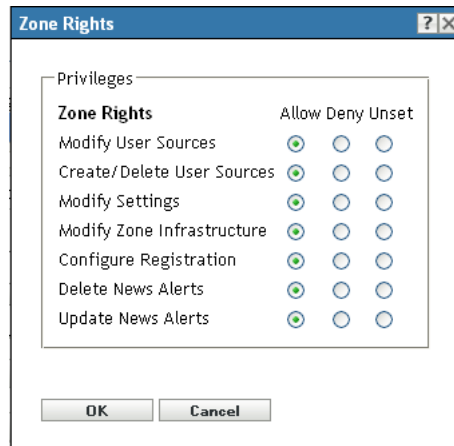


3 To edit the description, make the changes directly in the *Description* field.

4 To edit existing rights, do the following:

4a In the Rights panel, select the check box for a rights type, then click *Edit* to open the Rights dialog box.

For example, select Zone Rights to display the following dialog box:



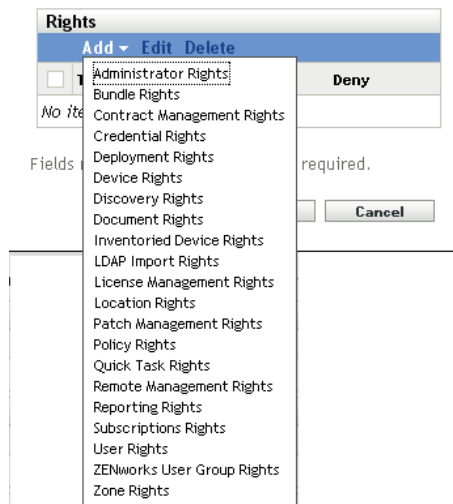
4b For each privilege, select whether it should be allowed, denied, or left unset.

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.

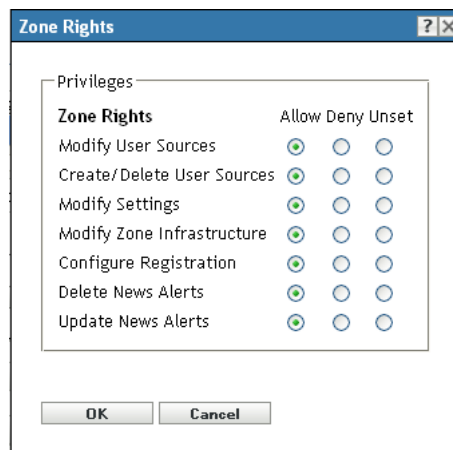
If you select the *Allow* option and the right has not been denied elsewhere in ZENworks, the administrator has that right for the role.

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

- 4c Click *OK* to continue.
- 4d To edit another existing role, repeat [Step 4a](#) through [Step 4c](#).
- 5 (Optional) To add new rights:
 - 5a In the Rights panel, click *Add*, then select one of the rights types from the drop-down list:



- 5b 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.

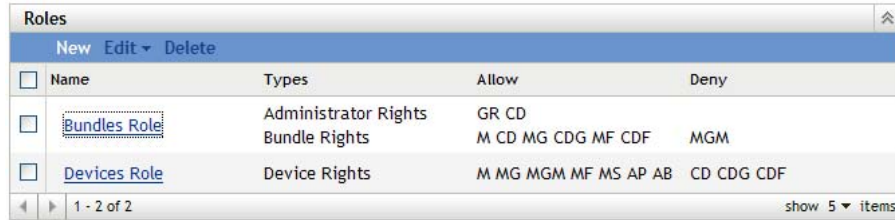
If you select the *Unset* option, the administrator is not granted the right for the role unless it is granted elsewhere in ZENworks.

- 5c Click *OK* to continue.
- 5d To add another rights type to the role, repeat [Step 5a](#) through [Step 5c](#).
- 6 To exit the dialog box and save your changes to the role, click *OK*.

3.6.5 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.



<input type="checkbox"/>	Name	Types	Allow	Deny
<input type="checkbox"/>	Bundles Role	Administrator Rights Bundle Rights	GR CD M CD MG CDG MF CDF	MGM
<input type="checkbox"/>	Devices Role	Device Rights	M MG MGM MF MS AP AB	CD CDG CDF

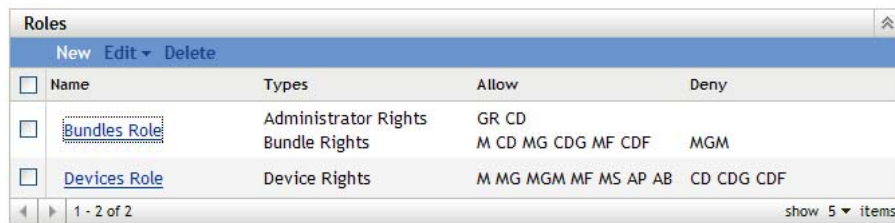
- 2 In the Roles panel, select the check box for the role to be renamed.
- 3 Click *Edit > Rename* to open the Rename Role dialog box:
- 4 Specify the new role name, then click *OK*.

3.6.6 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.
- 2 In the Roles panel, select the check box for the role to be deleted.



<input type="checkbox"/>	Name	Types	Allow	Deny
<input type="checkbox"/>	Bundles Role	Administrator Rights Bundle Rights	GR CD M CD MG CDG MF CDF	MGM
<input type="checkbox"/>	Devices Role	Device Rights	M MG MGM MF MS AP AB	CD CDG CDF

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

4 ZENworks News

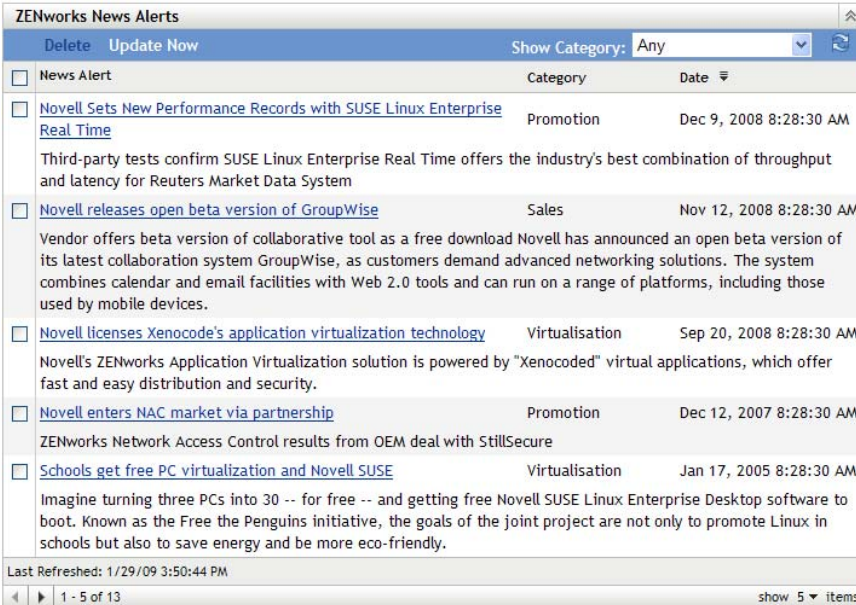
Novell ZENworks 11 displays information from Novell about current top issues, news updates, promotions, and so forth on the home page of ZENworks Control Center.

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 4.1, “Managing ZENworks News Alerts,” on page 101](#)
- ◆ [Section 4.2, “Configuring ZENworks News Settings,” on page 102](#)

4.1 Managing ZENworks News Alerts

Figure 4-1 ZENworks News Alerts



ZENworks News Alerts		
<input type="checkbox"/> Delete	<input type="checkbox"/> Update Now	Show Category: Any
<input type="checkbox"/> News Alert	Category	Date
<input type="checkbox"/> Novell Sets New Performance Records with SUSE Linux Enterprise Real Time Third-party tests confirm SUSE Linux Enterprise Real Time offers the industry's best combination of throughput and latency for Reuters Market Data System	Promotion	Dec 9, 2008 8:28:30 AM
<input type="checkbox"/> Novell releases open beta version of GroupWise Vendor offers beta version of collaborative tool as a free download Novell has announced an open beta version of its latest collaboration system GroupWise, as customers demand advanced networking solutions. The system combines calendar and email facilities with Web 2.0 tools and can run on a range of platforms, including those used by mobile devices.	Sales	Nov 12, 2008 8:28:30 AM
<input type="checkbox"/> Novell licenses Xenocode's application virtualization technology Novell's ZENworks Application Virtualization solution is powered by "Xenocoded" virtual applications, which offer fast and easy distribution and security.	Virtualisation	Sep 20, 2008 8:28:30 AM
<input type="checkbox"/> Novell enters NAC market via partnership ZENworks Network Access Control results from OEM deal with StillSecure	Promotion	Dec 12, 2007 8:28:30 AM
<input type="checkbox"/> Schools get free PC virtualization and Novell SUSE Imagine turning three PCs into 30 -- for free -- and getting free Novell SUSE Linux Enterprise Desktop software to boot. Known as the Free the Penguins initiative, the goals of the joint project are not only to promote Linux in schools but also to save energy and be more eco-friendly.	Virtualisation	Jan 17, 2005 8:28:30 AM

Last Refreshed: 1/29/09 3:50:44 PM
1 - 5 of 13 items

Review the following sections to manage the ZENworks News Alerts:

- ◆ [Section 4.1.1, “Deleting the News Alerts,” on page 102](#)
- ◆ [Section 4.1.2, “Updating the News Alerts,” on page 102](#)
- ◆ [Section 4.1.3, “Displaying the News Alerts Based on the Selected Category,” on page 102](#)
- ◆ [Section 4.1.4, “Viewing the News,” on page 102](#)
- ◆ [Section 4.1.5, “Sorting the News Alerts,” on page 102](#)

4.1.1 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*.

4.1.2 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.

4.1.3 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.

4.1.4 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.

4.1.5 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.

4.2 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 4-2 News Download Schedule



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

- ◆ [Section 4.2.1, “Dedicated News Server,” on page 103](#)
- ◆ [Section 4.2.2, “Schedule Type,” on page 104](#)

4.2.1 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” on page 103](#)
- ◆ [“Clearing a Dedicated News Server” on page 104](#)

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.

4.2.2 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 102](#).
- 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.

5 ZENworks 11 Product Licensing

The ZENworks 11 family of products include the following:

- ♦ ZENworks 11 Asset Management
- ♦ ZENworks 11 Configuration Management
- ♦ ZENworks 11 Endpoint Security Management
- ♦ ZENworks 11 Full Disk Encryption
- ♦ ZENworks 11 Patch Management
- ♦ Asset Inventory for UNIX/Linux
- ♦ ZENworks 11 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:

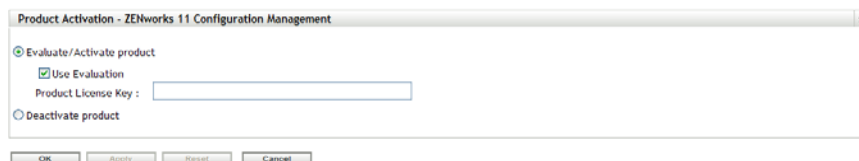
- ♦ [Section 5.1, “Evaluating a Product,” on page 107](#)
- ♦ [Section 5.2, “Extending the Evaluation Period of a Product,” on page 108](#)
- ♦ [Section 5.3, “Activating a Product,” on page 108](#)
- ♦ [Section 5.4, “Deactivating a Product,” on page 108](#)
- ♦ [Section 5.5, “Possible License State Changes,” on page 109](#)
- ♦ [Section 5.6, “Using ZENworks 11 Asset Management with ZENworks 7 Desktop Management,” on page 110](#)
- ♦ [Section 5.7, “Viewing the Predefined Reports,” on page 111](#)

For other actions that you can perform to view license information, see [“License Commands”](#) in the *ZENworks 11 Command Line Utilities Reference*.

For information on renewing Patch Management subscription licenses, see [“Patch Management”](#) in the *ZENworks 11 SP2 Administration Quick Start*.

5.1 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.

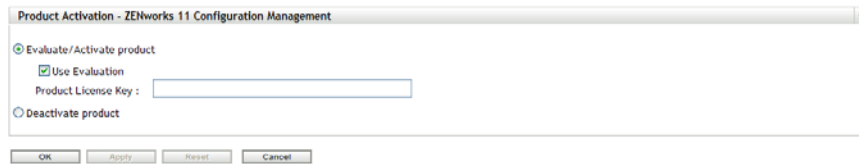


- 5 Select *Use Evaluation* option, then click *Apply*.
- 6 Click *OK*.

For more information on license state changes, see [Section 5.5, “Possible License State Changes,” on page 109](#).

5.2 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.

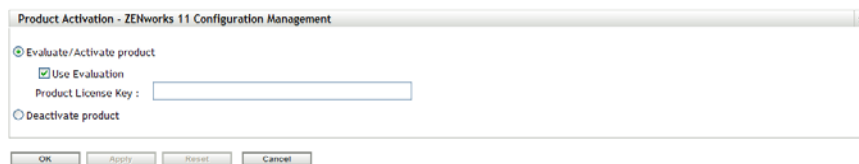


- 5 Specify the extended evaluation license key in *Product License Key*, then click *Apply*.
- 6 Click *OK*.

For more information on license state changes, see [Section 5.5, “Possible License State Changes,” on page 109](#).

5.3 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.



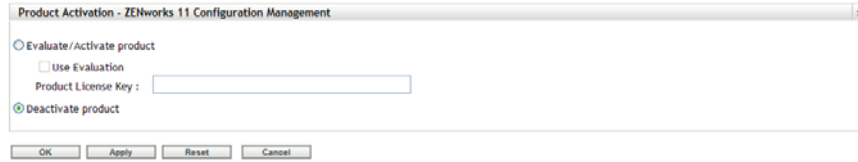
- 5 Specify the license key in *Product License Key*, click *Apply*.
- 6 Click *OK*.

For more information on license state changes, see [Section 5.5, “Possible License State Changes,” on page 109](#).

5.4 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 [Section 5.5, “Possible License State Changes,” on page 109](#).

5.5 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 5-1 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	

Previous License State	Current License State	New License State	Additional Information
Evaluation	Deactivated	Active	
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	

5.6 Using ZENworks 11 Asset Management with ZENworks 7 Desktop Management

You can use ZENworks 11 Asset Management with ZENworks 7 Desktop Management installed in your environment.

If you enable ZENworks 11 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 11 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.

5.7 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 11 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 11 System Reporting Reference](#) documentation.

6 System Variables

System variables let you define variables that can be used to replace paths, names, and so forth as you enter information in ZENworks Control Center.

You can define system variables at three levels:

- ♦ **Management Zone:** The system variables are inherited by all device folders, devices, and bundles.
- ♦ **Device Folder:** The system variables are inherited by all devices contained within the folder or its subfolders.
- ♦ **Device or Bundle:** The system variables apply only to the device or bundle for which they are configured.

The following sections contain more information:

- ♦ [Section 6.1, “Understanding System Variables,” on page 113](#)
- ♦ [Section 6.2, “Adding System Variables,” on page 114](#)
- ♦ [Section 6.3, “Removing System Variables,” on page 115](#)
- ♦ [Section 6.4, “Editing System Variables,” on page 115](#)
- ♦ [Section 6.5, “Using System Variables,” on page 115](#)

6.1 Understanding System Variables

The following examples illustrate some uses of system variables:

- ♦ **Specifying Paths and Filenames in Actions:** When you create an Edit INI File action, for example, you specify a `.ini` file and configure the changes to be performed on that file. During the creation process, you can specify the full path to the file (for example, `C:\Program Files\OpenOffice.org 2.0\program\setup.ini`).

Instead of specifying the entire path and filename, you can create a system variable. For example, the name of the variable can be `OpenOffice INI` and the value can be the full path to the file. Now, instead of specifying the full path and filename when you create the action, you can type `${OpenOffice INI}` in the *Filename* field.

An advantage of using a system variable rather than typing the full path and filename is that you can specify this particular `.ini` file in many different types of actions. Suppose that the location of the `.ini` file changes. Instead of editing the path in each action, you can edit the path in the system variable and all the actions still point to the correct path.

You can generalize the path even more by creating a system variable named `ProgramFiles` with the value of `C:\program files`. In the future, when you specify a path, you can type `${ProgramFiles}` and then specify the remaining path to the specific file. For example, `${ProgramFiles}\OpenOffice 2.0\program\setup.ini`. Again, if the path to the `C:\program files` directory changes in the future, you only need to change the path in the system variable, rather than in each bundle that uses that location in a path.

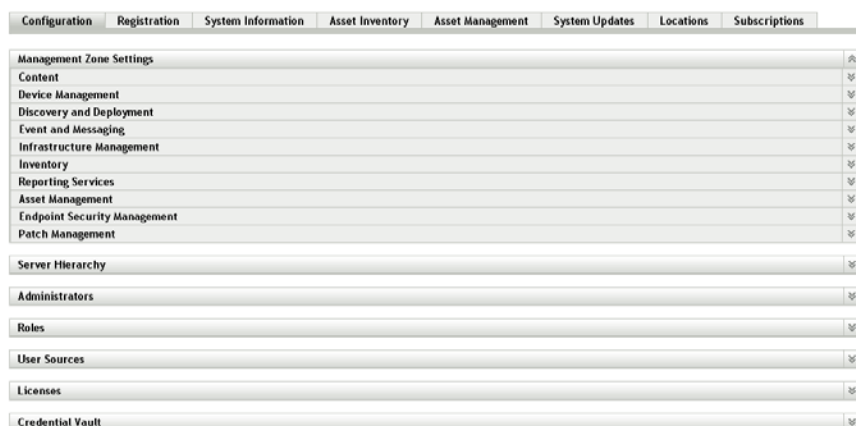
- ♦ **Overriding Inherited Settings:** When configuring system variables for a folder, device, or bundle, you can override an inherited variable by defining a new variable with the same name but a different value. For example, if `ProgramFiles=C:\` is defined at the Management Zone, you can override it by defining `ProgramFiles=D:\` at the device folder level or at the device or bundle.

You can use a system variable when creating a bundle. Depending on the location of the targeted device object in the folder hierarchy, the value can be different.

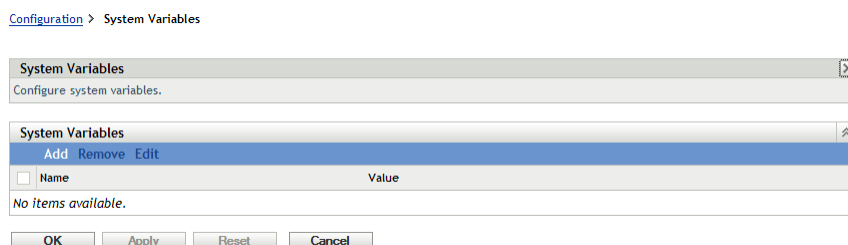
For example, suppose that all of your applications are installed in `C:\program files` except for specific applications used by the accounting department, which are installed in `D:\program files`. You define the `ProgramFiles` variable at the Management Zone level to point to `C:\program files`. For the accounting applications, you create a device folder called `Accounting Department` to contain the devices in the accounting department. You can set the value for the `ProgramFiles` variable to `D:\program files` on the `Accounting Department` device folder level. When the same bundle is applied to devices, the path to the program files directory is on the `C:\` drive for all targeted devices except for those contained in the `Accounting Department` device folder. For those devices, the program files directory points to the `D:\` drive.

6.2 Adding System Variables

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



- 2 In the Management Zone Settings list, click *Device Management*.
- 3 Click *System Variables*.



- 4 Click *Add*, provide the name and value for the variable, then click *OK*.

When configuring system variables for a folder, device, or bundle, you can override an inherited variable by defining a new variable with the same name but a different value. For example, if `Var1=c:\` is inherited, you can override it by defining `Var1=d:\`.

Variable names cannot include spaces and must be unique at the level where they are defined. For example, you cannot have two variables named `Var1` defined at the device level (unless one is inherited, in which case the device-level variable overrides the inherited variable).

Variable values cannot include the characters `&` and `<`.

- 5 Click *Apply*.

6.3 Removing System Variables

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the *Management Zone Settings* list, click *Device Management*.
- 3 Click *System Variables*.
- 4 Select the check box next to the variable (or variables).
- 5 Click *Remove*.
- 6 Click *Apply*.

6.4 Editing System Variables

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the *Management Zone Settings* list, click *Device Management*.
- 3 Click *System Variables*.
- 4 Select the check box next to the variable, then click *Edit*.
- 5 Modify the *Name* and *Value* fields as desired, then click *OK*.
- 6 Click *Apply*.

6.5 Using System Variables

- 1 Use the following syntax:

`${VAR_NAME}`

Replace `VAR_NAME` with the name of the variable.

7 Credential Vault

The Credential Vault stores the credentials used by Novell ZENworks 11 actions and tasks that require authentication to access a particular resource.

For example, if you want to create a third-party Imaging bundle by using the image files stored in a shared-network image repository that requires authentication, you can add a credential that includes the login name and password for the repository in the credential vault. During the creation of the third-party Imaging bundle, you can specify the credential name to access the repository.

ZENworks features like Third-party imaging, Intel AMT provisioning, Subscriptions download, and actions such as Copy Directory uses credentials that are stored in the credential vault.

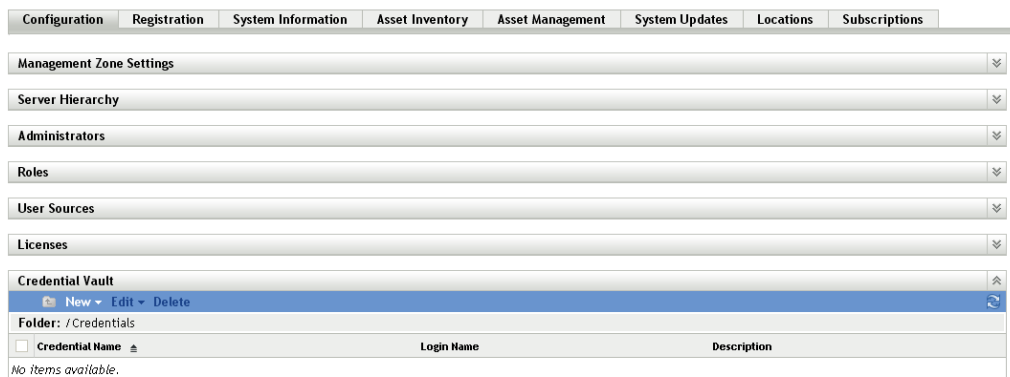
You can use ZENworks Control Center or the zman command line utility to manage credentials. The procedures in this section explain how to manage credentials by using ZENworks Control Center. If you prefer the zman command line utility, see “[Credential Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#).

The following sections contain information to help you manage credentials:


- [Section 7.1, “Creating a Folder for Credentials,” on page 117](#)
- [Section 7.2, “Assigning Credential Rights,” on page 118](#)
- [Section 7.3, “Renaming a Credential,” on page 119](#)
- [Section 7.4, “Moving a Credential to Another Folder,” on page 119](#)
- [Section 7.5, “Removing a Credential,” on page 119](#)

7.1 Creating a Folder for Credentials

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

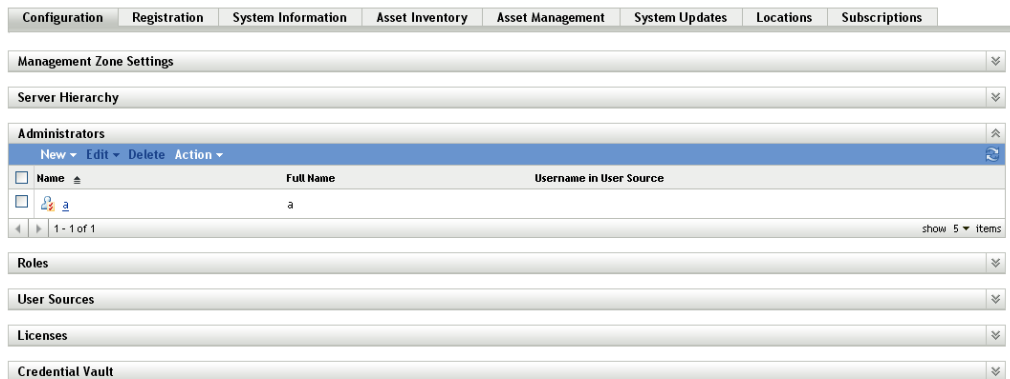


- 2 In the Credential Vault panel, click *New > Folder* to display the New Folder dialog box.

- 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.

7.2 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 Click the *Rights* tab.
- 4 In the *Assigned Rights* section, click *Add > Credential Rights*.


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

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

7.3 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*.

7.4 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*.

7.5 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*.

8 Message Logging

The Message Logger component of Novell ZENworks 11 lets the other ZENworks components such as zenloader, web services, ZENworks Management Daemon (ZMD), Remote Management, and Policy Enforcers 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 8.1, “Functionalities of Message Logger,” on page 121](#)
- ♦ [Section 8.2, “Message Severity,” on page 121](#)
- ♦ [Section 8.3, “Message Format,” on page 122](#)
- ♦ [Section 8.4, “Configuring Message Logger Settings,” on page 122](#)
- ♦ [Section 8.5, “Managing Messages,” on page 126](#)

8.1 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.

8.2 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.

8.3 Message Format

Messages are logged in different formats depending on the output targets. For more information on message formats see, [Section 8.5.1, “Understanding Message Formats,” on page 127.](#)

8.4 Configuring Message Logger Settings

The following sections provide information on configuring the settings of the Message Logger component of Novell ZENworks 11.

- ◆ [Section 8.4.1, “Configuring the Message Logger Settings at the Zone Level,” on page 122](#)
- ◆ [Section 8.4.2, “Configuring the Message Logger Settings at the Folder Level,” on page 125](#)
- ◆ [Section 8.4.3, “Configuring the Message Logger Settings at the Device Level,” on page 126](#)
- ◆ [Section 8.4.4, “Turning on the Debug Messages,” on page 126](#)

8.4.1 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:

- ◆ [“Local Device Logging” on page 122](#)
- ◆ [“Centralized Message Logging” on page 123](#)


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.

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 “E-Mail Format” on page 127.

- 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*.

8.4.2 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*.

8.4.3 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*.

8.4.4 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*.

8.5 Managing Messages

The Message Logger component lets you manage the messages logged by the other components of Novell ZENworks 11.

- ♦ [Section 8.5.1, "Understanding Message Formats," on page 127](#)
- ♦ [Section 8.5.2, "Viewing the Message Status," on page 129](#)
- ♦ [Section 8.5.3, "Viewing the Messages," on page 131](#)
- ♦ [Section 8.5.4, "Acknowledging Messages," on page 132](#)
- ♦ [Section 8.5.5, "Deleting Messages," on page 134](#)
- ♦ [Section 8.5.6, "Viewing the Predefined Reports," on page 136](#)

8.5.1 Understanding Message Formats

- ◆ “Local Log File Format” on page 127
- ◆ “E-Mail Format” on page 127
- ◆ “SNMP Message Format” on page 128
- ◆ “UDP Payload Format” on page 129

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.

Example 1: Error related to Policy Management.

```
[DEBUG] [7/22/2007 3:42:45 PM] [] [PolicyManager] [] [Name = RM_dev, Guid = 271414163524d000190dbc6fa94272aa, Type = remote management policy, Version = 2] [] []].
```

To troubleshoot this error, see the [ZENworks 11 Configuration Policies Reference](#).

Example 2: Error related to Remote Management.

```
[ERROR] [15-07-2007 12:44:16] [] [Remote Management] [RemoteManagement.VNCEVENT_CANNOT_OPEN_EVENT] [Unable to open the <ZRMUserLoginEvent> event] [] []].
```

To troubleshoot this error, see the [ZENworks 11 Remote Management Reference](#).

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)] [] []].

E-Mail Format

An e-mail message consists of the message header and the message body:

- ◆ “Message Header” on page 127
- ◆ “Message Body” on page 128

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.

SNMP Message Format

The SNMP messages consists of the following two parts:

- ♦ [“SNMP Message Header” on page 128](#)
- ♦ [“Protocol Data Unit \(PDU\)” on page 128](#)

SNMP Message Header

The following fields are contained in the header:

Version Number: Specifies the version of SNMP used. ZENworks 11 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 11 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 11, 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.

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.

8.5.2 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.

- ◆ [“Message Summary” on page 130](#)
- ◆ [“Device Hot List” on page 130](#)

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 8-1 Message Summary

Message Summary				
				Total
Servers	3	0	5	8
Workstations	9	1	1	11
Policies	3	0	17	20
Bundles	2	0	5	7

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.

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:

- In ZENworks Control Center, click the *Home* tab.

Device Hot List					
			Type	Item	
3	45	22		blr-nrm-r6a	
2	28	27		blr-nrm-r9a	
2	25	23		blr-nrm-r5v2	
2	0	0		blr-nrm-r3f	
1	52	1		blr-nrm-r11d	

1 - 5 of 15 items

- 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 of 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.

8.5.3 Viewing the Messages

In the ZENworks Control Center, you can view the logged messages as follows:

- ◆ [“Message Log” on page 131](#)
- ◆ [“System Message Log” on page 132](#)

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 8.5.4, “Acknowledging Messages,” on page 132](#), and for information on deleting messages, see [Section 8.5.5, “Deleting Messages,” on page 134](#).

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.

System Message Log				Advanced
Status	Message	Date	Source	
	POLICYHANDLERS.PrinterPolicy.LocalPrinterAddSuccess(http://164.9	10:24 AM	blr-nrm-r5v2	
	POLICYHANDLERS.PrinterPolicy.LocalPrinterAddSuccess(printerlocal)	10:23 AM	blr-nrm-r5v2	
	Printer \\164.99.154.214\share already exists for user , hence n	10:23 AM	blr-nrm-r5v2	
	The action printer policy (ID:printer policy) failed, but the ac	10:23 AM	blr-nrm-r5v2	
	IPrint client is already installed in the device, not reinstalli	10:23 AM	blr-nrm-r5v2	

1 - 5 of 820 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.

- 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 8.5.4, “Acknowledging Messages,” on page 132](#), for information on deleting messages, see [Section 8.5.5, “Deleting Messages,” on page 134](#).

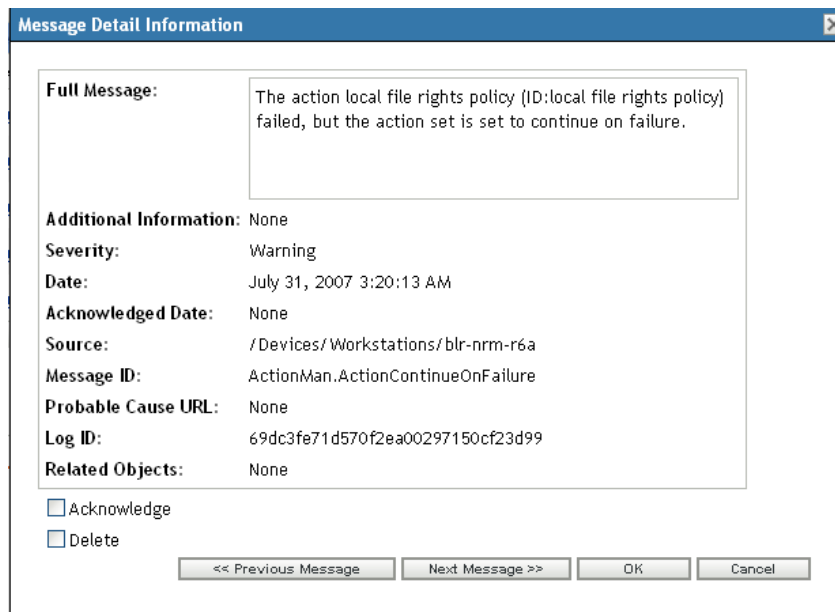
8.5.4 Acknowledging Messages

An acknowledged message is one that you have reviewed and marked as acknowledged ().

- ♦ [“Acknowledging a Message” on page 132](#)
- ♦ [“Acknowledging Multiple Messages” on page 133](#)
- ♦ [“Acknowledging Messages Logged During a Specified Time” on page 133](#)

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 (✓).

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*:

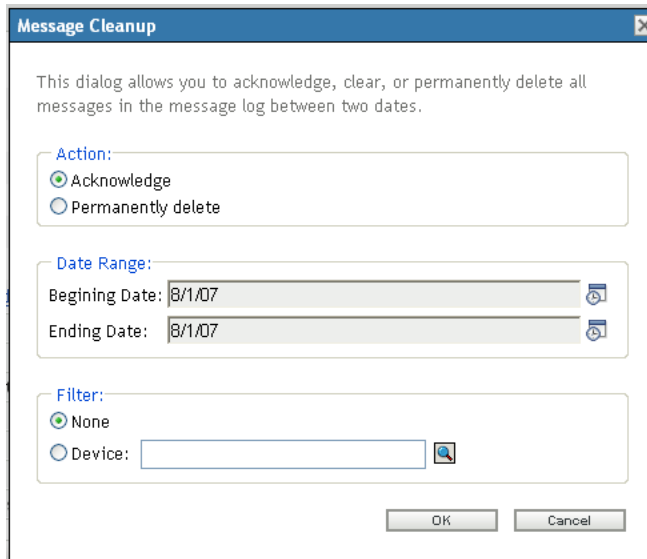
Acknowledge		Delete	
<input type="checkbox"/> Status	Message	Date	✓
<input type="checkbox"/>	The action local file rights policy (ID:local file rights policy)	7/31/07 5:20:32 AM	✓
<input type="checkbox"/>	The drive "d:" is not a local fixed drive. Files/folders on this	7/31/07 5:20:31 AM	✓
<input type="checkbox"/>	The action local file rights policy (ID:local file rights policy)	7/31/07 3:20:13 AM	
<input type="checkbox"/>	The drive "d:" is not a local fixed drive. Files/folders on this	7/31/07 3:20:12 AM	
<input type="checkbox"/>	The action local file rights policy (ID:local file rights policy)	7/31/07 3:14:39 AM	

1 - 5 of 93 show 5 items

The acknowledged messages are marked with a check mark (✓).

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 [“System Message Log” on page 132](#).

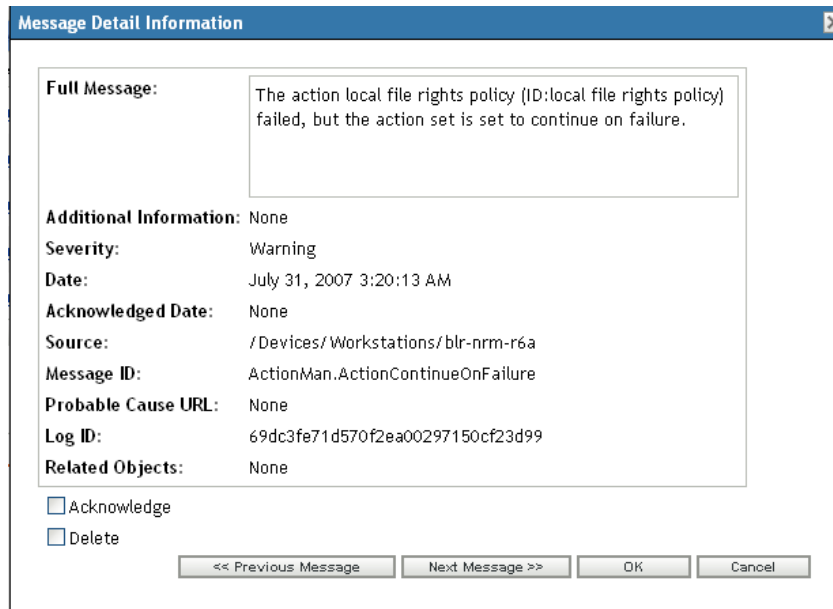
8.5.5 Deleting Messages

Deleting a message completely removes the message from your ZENworks system.

- ♦ [“Deleting a Message” on page 135](#)
- ♦ [“Deleting Multiple Messages” on page 135](#)
- ♦ [“Deleting Messages Logged During a Specified Time” on page 135](#)


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*:



Deleting Multiple Messages

- 1 In the Message Log panel or the System Message Log panel, click *Advanced* on the right corner of the panel.

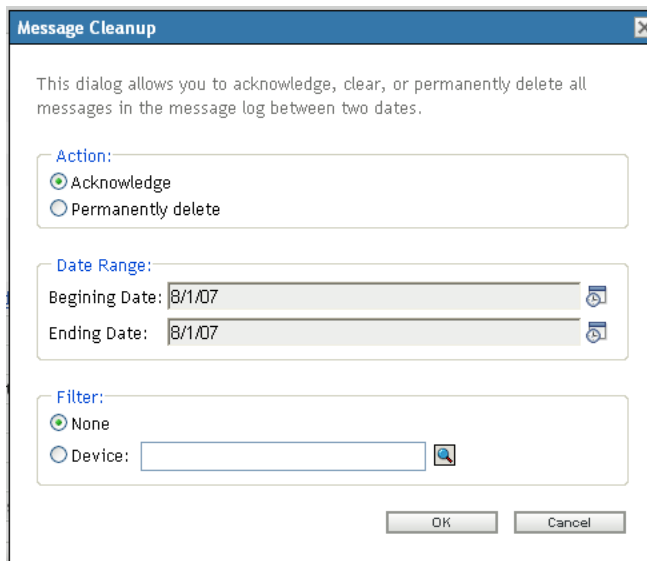
Acknowledge		Delete		
<input type="checkbox"/>	Status	Message	Date	
<input type="checkbox"/>		The action local file rights policy (ID:local file rights policy)	7/31/07 5:20:32 AM	✓
<input type="checkbox"/>		The drive "d:" is not a local fixed drive. Files/folders on this	7/31/07 5:20:31 AM	✓
<input type="checkbox"/>		The action local file rights policy (ID:local file rights policy)	7/31/07 3:20:13 AM	
<input type="checkbox"/>		The drive "d:" is not a local fixed drive. Files/folders on this	7/31/07 3:20:12 AM	
<input type="checkbox"/>		The action local file rights policy (ID:local file rights policy)	7/31/07 3:14:39 AM	

1 - 5 of 93 show 5 items

- 2 Select the messages to delete, then click *Delete*.

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, "[System Message Log](#)" on page 132.

8.5.6 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 11 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 11 System Reporting Reference](#) documentation.

|| ZENworks Servers and Satellites

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

- ◆ [Chapter 9, “ZENworks Server,” on page 139](#)
- ◆ [Chapter 10, “Satellites,” on page 149](#)
- ◆ [Chapter 11, “Server Hierarchy,” on page 165](#)
- ◆ [Chapter 12, “Location Awareness,” on page 169](#)
- ◆ [Chapter 13, “Content,” on page 197](#)

9 ZENworks Server

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 stores content to be delivered to devices and images to be used for imaging devices. It communicates with other ZENworks Servers and ZENworks Satellites to replicate or receive content, software and hardware inventory, and messages throughout the Management Zone.

The following sections provide additional information about the ZENworks Server:

- ◆ [Section 9.1, “ZENworks Services on a Windows Server,” on page 139](#)
- ◆ [Section 9.2, “ZENworks Services on a Linux Server,” on page 142](#)
- ◆ [Section 9.3, “Configuring Additional Access to a ZENworks Server,” on page 144](#)
- ◆ [Section 9.4, “Configuring Restricted Access to a ZENworks Server,” on page 146](#)
- ◆ [Section 9.5, “Determining the ZENworks Software Version Installed on Servers,” on page 146](#)
- ◆ [Section 9.6, “Uninstalling a ZENworks Server,” on page 146](#)
- ◆ [Section 9.7, “Deleting a ZENworks Primary Server,” on page 147](#)
- ◆ [Section 9.8, “ZENworks Server Reports,” on page 147](#)
- ◆ [Section 9.9, “Troubleshooting ZENworks Server,” on page 148](#)

9.1 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 11 products (Asset Management, Configuration Management, Endpoint Security Management, Patch Management and Full Disk Encryption) you have licensed and activated. If a service is not required for your product, it is disabled.

Table 9-1 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 Datastore		Embedded database used for storing ZENworks objects and resources.
ZENworks Endpoint Security Service	zesservice	Used to support location awareness in the ZENworks Agent.

Service	Service Name	Description
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.
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 (on Windows XP and Windows Server 2003) zisd (on Windows Vista, Windows Server 2008, Windows Server 2008 R2, Windows 7)	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 9.1.1, “Checking the Status of a ZENworks Service,” on page 140](#)
- ♦ [Section 9.1.2, “Starting the ZENworks Services,” on page 140](#)
- ♦ [Section 9.1.3, “Stopping the ZENworks Services,” on page 141](#)
- ♦ [Section 9.1.4, “Restarting the ZENworks Services,” on page 141](#)

9.1.1 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 9-1 on page 139](#).

9.1.2 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 9-1 on page 139](#)), then click *Start*.
- ◆ Start the ZENworks services from the command prompt:
 1. Execute the following command:


```
novell-zenworks-configure -c Start
```

 By default, all the services and the `Start` option are selected.
 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 11 Server Installation Guide](#).

9.1.3 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 9-1 on page 139](#)), then click *Stop*.
- ◆ Stop the ZENworks services from the command prompt:
 1. Execute the following command:


```
novell-zenworks-configure -c Stop
```
 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, specify the number next to the `Stop` action, then press Enter.

9.1.4 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 9-1 on page 139](#)), 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.

9.2 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 11 products (Configuration Management, Asset Management, Endpoint Security Management, and Patch Management) you have licensed and activated. If a service is not required for your product, it is disabled

Table 9-2 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-zenworks-xplatzmd	Used to enable the server as a managed device. Also used to support location awareness in the ZENworks Agent.
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-zenmnr	Used to monitor the status of the ZENworks services.
ZENworks Imaging Agent	novell-zislnx	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 9.2.1, “Checking the Status of a ZENworks Service,” on page 143](#)
- ◆ [Section 9.2.2, “Starting the ZENworks Services,” on page 143](#)
- ◆ [Section 9.2.3, “Stopping the ZENworks Services,” on page 143](#)
- ◆ [Section 9.2.4, “Restarting the ZENworks Services,” on page 144](#)

9.2.1 Checking the Status of a ZENworks Service

- 1 At the console prompt, enter the following command:

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

Replace *servicename* with the name of the service as listed in [Table 9-2 on page 142](#).

9.2.2 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 9-2 on page 142](#).
 - ◆ 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 11 Server Installation Guide](#).

9.2.3 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 9-2 on page 142](#).
 - ◆ 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.

9.2.4 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 [Table 9-2 on page 142](#).
 - ♦ 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.

9.3 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.

- ♦ [Section 9.3.1, “Addressing Non-Detectable IP Address Conditions,” on page 144](#)
- ♦ [Section 9.3.2, “Addressing Non-Detectable DNS Name Conditions,” on page 145](#)

9.3.1 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.

9.3.2 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.


9.4 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.

9.5 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), ZENworks Patch Management (ZPM), ZENworks Endpoint Security Management (ZESM) and ZENworks Full Disk Encryption (FDE) 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*, *ZENworks Patch Management Version*, *ZENworks Endpoint Security Management* and *ZENworks Full Disk Encryption* 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*, *ZPM Version*, *ZESM Version* and *FDE Version* columns for each server.

9.6 Uninstalling a ZENworks Server

Instructions for uninstalling a ZENworks Server are provided in “[Uninstalling ZENworks Software](#)” in the [ZENworks 11 Server Installation Guide](#).

9.7 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 11 Server Installation Guide*.

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

If you remove a Primary Server on which the Patch Management subscription service is configured to run, you must reset the Patch Management settings before deleting the server. For more information on how to reset the Patch Management settings, see “[Viewing Subscription Service Information](#)” in the *ZENworks 11 SP2 Patch Management Reference*.

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 11 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*.

9.8 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 11 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 11 System Reporting Reference](#) documentation.

9.9 Troubleshooting ZENworks Server

- ♦ [“The casa_atstd service on a Linux server fails to start” on page 148](#)

The casa_atstd service on a Linux server fails to start

Source: ZENworks 11; ZENworks Server

Explanation: On a Linux server, if you choose to manually start the `casa_atstd` service that is in the unused state, the service fails to start.

Action: If the `casaatsd.pid` file exists within the `/var/lib/CASA/authtoken/svc/` directory, delete the file and then restart the service.

10 Satellites

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 or Linux device (server or workstation), but not a Primary Server. For more information, see “[System Requirements](#)” in the *ZENworks 11 Server Installation Guide* and “[Deploying the ZENworks Adaptive Agent](#)” in the *ZENworks 11 Discovery, Deployment, and Retirement Reference*.

When you configure a Satellite, you specify which roles it performs (Authentication, Collection, Content, or Imaging). A Satellite can also perform roles that might be added by third-party products that are snap-ins to the ZENworks 11 framework.

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.

NOTE: For information about Satellites from the perspective of an end user using the ZENworks Adaptive Agent, see “[Satellite Roles](#)” in the [Overview](#).

The following sections contain more information:

- [Section 10.1, “Understanding the Satellite Roles,”](#) on page 149
- [Section 10.2, “Adding and Configuring Satellite Devices,”](#) on page 151
- [Section 10.3, “Refreshing a Satellite,”](#) on page 158
- [Section 10.4, “Removing the Roles from a Satellite,”](#) on page 158
- [Section 10.5, “Removing Satellites from the Server Hierarchy,”](#) on page 159
- [Section 10.6, “Specifying Content to be Hosted,”](#) on page 160
- [Section 10.7, “Manually Replicating Content from a Primary Server to Satellite Devices,”](#) on page 161
- [Section 10.8, “Moving a Satellite from One Primary Server to Another Primary Server,”](#) on page 161
- [Section 10.9, “Specifying a Different Repository for the Content Role Satellite \(Windows Only\),”](#) on page 161
- [Section 10.10, “Specifying a Different Repository for Content Role Satellite \(Linux Only\),”](#) on page 162
- [Section 10.11, “Troubleshooting Satellites,”](#) on page 163

10.1 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:

- [Section 10.1.1, “Understanding the Authentication Role,”](#) on page 150
- [Section 10.1.2, “Understanding the Collection Role,”](#) on page 150

- ♦ [Section 10.1.3, “Understanding the Content Role,” on page 151](#)
- ♦ [Section 10.1.4, “Understanding the Imaging Role,” on page 151](#)

10.1.1 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.

10.1.2 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, messages (errors, warning, informational, and so forth), and policy and bundle statuses, 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.

10.1.3 Understanding the Content Role

Content consists of bundles, policies, system updates (ZENworks Server and Adaptive Agent), and patches.

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.

10.1.4 Understanding the Imaging Role

The Imaging role installs the Imaging services and adds the Imaging role to the device. With this role, the device can be used as an Imaging server to perform all Imaging operations, such as taking an image and applying an image within or across subnets by using unicast or multicast imaging.

The Imaging role can be used to achieve load balancing for the Primary Server, and also to support cross-subnet imaging. The Satellite uses ZENworks Control Center to communicate with the Primary Server for Imaging operations in the Auto mode.

On the managed device, the Imaging module is inactive until you promote the managed device to be a Satellite with the Imaging role or until the Imaging role is added to an existing Satellite. This activates the Imaging services on the device, and enables you to perform the Imaging operations in auto and maintenance mode. The Imaging services installed on the device include TFTP, Preboot policy, pbserv, and proxy DHCP. All services, except for proxy DHCP, are automatically started. You can manually start or stop the proxy DHCP service from ZENworks Control Center.

10.2 Adding and Configuring Satellite Devices

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

Before promoting a managed device as a Satellite, ensure to review the following guidelines:

- ◆ The ZENworks version installed on the managed device must be same as that of the Primary Server.
- ◆ You cannot promote the following devices as a Satellite:
 - ◆ A managed device that has a previous version of ZENworks Adaptive Agent () installed.
 - ◆ A ZENworks 11 test device.
- ◆ You cannot change the Satellite roles and settings for the existing Satellites.

To add and configure Satellites:

- 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.

Parent primary server: *

/Devices/Servers/Windows/blr-srm-r12n

Device to promote: *

Satellite Server Roles

<input type="checkbox"/> Authentication	Configure
<input type="checkbox"/> Collection	Configure
<input type="checkbox"/> Content	Configure
<input type="checkbox"/> Imaging	Configure

Port for content and/or collection HTTP requests: *

80

Port for authentication Secure HTTPS requests: *

443

OK Cancel

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.

You can also use the `zman satellite-server-create (ssc)` command to add or configure roles for a Satellite. For more information, see “[Satellite Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#).

- 2 (Conditional) To remove Satellite roles from a device, deselect 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 11 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 10.2.1, "Authentication Role," on page 153](#)
- ◆ [Section 10.2.2, "Collection Role," on page 154](#)
- ◆ [Section 10.2.3, "Content Role," on page 155](#)
- ◆ [Section 10.2.4, "Imaging Role," on page 156](#)

- 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.

- 8 Specify the devices that need to use this Satellite for the Collection Roll-Up, Content, Authentication and Imaging roles.

- 9 To configure the Location Closest Server for this Satellite:

9a On the *Configuration* page, click the *Locations* tab.

9b In the *Locations* panel, click the location for which you want to configure the Closets Servers rules.

9c Click the *Severs* tab.

9d Configure the location closest servers.

10.2.1 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 153](#)
- ◆ ["Configuring the Authentication Role on a Satellite" on page 154](#)

Prerequisites to Configure the Authentication Role on a Satellite

If you have installed ZENworks 11 with external certificates, 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 private key.

For detailed information on how to create to an external certificate, see ["Creating an External Certificate"](#) in the *ZENworks 11 Server Installation Guide*.

2. Import the external certificate by using the `zac iac` command.

For more information about `zac`, view the `zac` man page (`man zac`) on the Satellite or see the *ZENworks 11 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 [Step 4 on page 153](#).

10.2.2 Collection Role

This role causes the device to collect inventory information, messages (errors, warning, informational, and so forth), and policy and bundle statuses, 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.

- 3 Click *OK*.
- 4 Continue with [Step 4 on page 153](#).

10.2.3 Content Role

This role enables the managed device to distribute content (bundles, policies, system updates, and patches) 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.

- 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*).

NOTE

If you choose *Imaging* as the *Content Type* and configure the settings to replicate the Imaging content, these settings are automatically reflected in the Configure Imaging Content Replication dialog box invoked while configuring the Imaging role to the device. Similarly, the Imaging content replication settings configured while configuring the Imaging role to a device are automatically reflected in the Configure Content Type Replication dialog box invoked while configuring the Content role with the Imaging content type to the device.

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 399](#).

NOTE

- ♦ We recommend you to set the schedule to 12 hours.
-

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 153](#).
- 4 (Optional) Specify the content to host on the Content Server. For more information, see [Section 13.2.4, “Including or Excluding Content,” on page 207](#).

If you want to specify the content that the Satellite hosts, you can include or exclude content from being replicated to it.

If you want to include content that its parent Primary Server does not have, you must first add the content to the parent Primary Server.

10.2.4 Imaging Role

Selecting this option installs the Imaging services and adds the Imaging role to the device. With this role, the device can be used as an Imaging server to perform all the Imaging operations, such as taking an image, applying an image, and multicasting an image. However, the ZENworks images are not replicated from the Primary Server to Imaging Satellites.

NOTE: The Imaging role is tied to the state of your ZENworks Configuration Management license. If your license state is deactivated, the Imaging role is disabled. For example, if you have a licensed copy of ZENworks Asset Management and you are evaluating ZENworks Configuration Management, the Imaging role is disabled if your ZENworks Configuration Management license expires. For more information, see [Section 5.5, “Possible License State Changes,” on page 109](#).

- 1 Select the check box next to *Imaging*, then click *Configure*.
- 2 (Conditional) Select the check box next to *Enable PXE Services* to automatically start the Proxy DHCP service on the device to which the Imaging Server role has been assigned.

To check whether the Proxy DHCP service has been started on the device, review the message log of the device (*Devices* tab > *Workstations* folder > click the workstation > *Summary* > Message Log panel).

- 3 (Conditional) Select the check box next to *Delete Image Files from the Server if Imaging Role is Removed* if you want the ZENworks image files to be automatically deleted from the device when the Imaging role is removed from the device.

The messages are logged in the Message Log panel if the severity level of the local file and the system log is set to *Information and Above* on the Local Device Logging page. (*Configuration* tab > *Device Management* > *Local Device Logging*).

This option is available only when you want to remove the Imaging Server role from the device.

- 4 Click *Options* next to *Configure Imaging Content Replication* to launch the Configure Imaging Content Replication dialog box.

The Configure Imaging Content dialog box lists a default configuration that applies to the imaging content, with a fixed interval schedule of every five minutes, no throttling, and a 60-minute content replication period.

5 Configure the Imaging content replication settings.

5a Select a throttle rate (in KB/sec). 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.

5b Select the duration of the content replication.

When you set the duration, be aware of the following:

- ◆ The *End Time* setting in all three scheduling options in the Recurring schedule type (*Days of the Week*, *Month*, and *Fixed Interval*) is not the end time when the content stops replicating. The start and end time settings specify the time period during which a replication can start.

If you select *Days of the Week* or *Month* and set a random start and end time, the replication starts between these times and continues for the specified duration. For example, if the *Duration* is set at the default of 60 minutes and replication starts 10 minutes before the specified end time, content is replicated 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 replicated for the entire 60 minutes.

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

5c Select a schedule (*No Schedule* or *Recurring*).

The Imaging Content Replication schedule determines how often the imaging content is sent down from the parent Primary Server to its child Satellite. Be aware that the cleanup action for content occurs every night at midnight.


If you do not set a schedule, the *<Default>* schedule applies to the Imaging content.

5d Click *OK* to save the changes.

NOTE: You can also configure the Imaging content replication settings while configuring the Content role to a device. These settings are automatically reflected in the Configure Imaging Content Replication dialog box invoked while configuring the Imaging role to the device. Similarly, the Imaging content replication settings configured while configuring the Imaging role to a device are automatically reflected in the Configure Content Type Replication dialog box invoked while configuring the Content role with Imaging content type to the device.

6 Click *OK*.

7 (Conditional) If you configure the Imaging role, the role is immediately added to the device. If the role is not immediately added, it is added only during the next device refresh schedule. If you want to immediately apply the role to the device, manually refresh the device in one of the following ways:

- ◆ In the ZENworks Control Center, click the *Configuration* tab > the *Server Hierarchy*, select the check box next to the devices you want to refresh, then click *Action* > *Refresh Device*.
- ◆ On a managed device, do one of the following:
 - ◆ Right-click the  icon, then click *Refresh*.
 - ◆ Execute the `zac ref` command from the console prompt.

To check whether the Proxy DHCP service has been started on the device, review the message log of the device (*Devices* tab > *Workstations* folder > click the workstation > *Summary* > Message Log panel or *Devices* tab > *Servers* folder > click the server > *Summary* > Message Log panel).

The messages are logged in the Message Log panel only if the severity level of the local file and the system log is set to *Information and Above* on the Local Device Logging page. (*Configuration* tab > *Device Management* > *Local Device Logging*).

- 8 (Conditional) If the Linux Satellite has the Imaging role configured, turn off the firewall on the device before performing imaging operations.

10.3 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.

10.4 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*.

NOTE: If your Management Zone consists of ZENworks 11 Primary Server and ZENworks Configuration Management 10.2.x/10.3.x Satellites, you cannot remove individual roles from the Satellites. You can only demote the Satellite to a managed device.

10.5 Removing Satellites from the Server Hierarchy

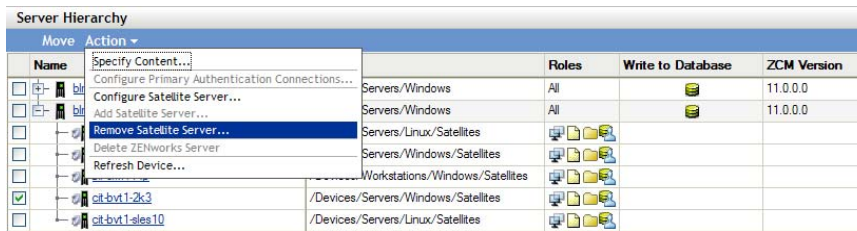
You can remove a Satellite from the Server Hierarchy listing when that device is no longer needed to perform Satellite functions. The Satellite can have any version of the ZENworks Adaptive Agent installed. The device's object isn't removed from ZENworks; it is just removed from the Server Hierarchy listing. The device is still a managed device in your ZENworks Management Zone. However, it will not contain the replicated content, imaging services and data, or the rolled-up collection-information.

When you remove a Satellite, the managed devices that used it must be reconfigured to use another server for content, collection, imaging and authentication purposes. For more information, see [Section 12.5, "Adding Closest Servers to Locations,"](#) on page 181.

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 authentication, content, imaging, or 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*.



Name	Roles	Write to Database	ZCM Version
Configure Primary Authentication Connections...	Servers/Windows	All	11.0.0.0
Configure Satellite Server...	Servers/Windows	All	11.0.0.0
Add Satellite Server...	Servers/Windows	All	11.0.0.0
Remove Satellite Server...	Servers/Linux/Satellites		
Delete ZENworks Server	Servers/Windows/Satellites		
Refresh Device...	Workstations/Windows/Satellites		
cit-bvt1-2k3	/Devices/Servers/Windows/Satellites		
cit-bvt1-sales10	/Devices/Servers/Linux/Satellites		

- 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.

For more information, see [Section 12.5, "Adding Closest Servers to Locations,"](#) on page 181.

- 7 (Conditional) The Imaging role is immediately removed from the device. If the role is not immediately removed, it is removed only during the next device refresh schedule. If you want to immediately remove the role from the device, manually refresh the device in one of the following ways:
 - ♦ In the ZENworks Control Center, click the *Configuration* tab > the *Server Hierarchy*, select the check box next to the devices you want to refresh, then click *Action > Refresh Device*.
 - ♦ On a managed device, do one of the following:
 - ♦ Right-click the  icon, then click *Refresh*.
 - ♦ Execute the `zac ref` command from the console prompt.

10.6 Specifying Content to be Hosted

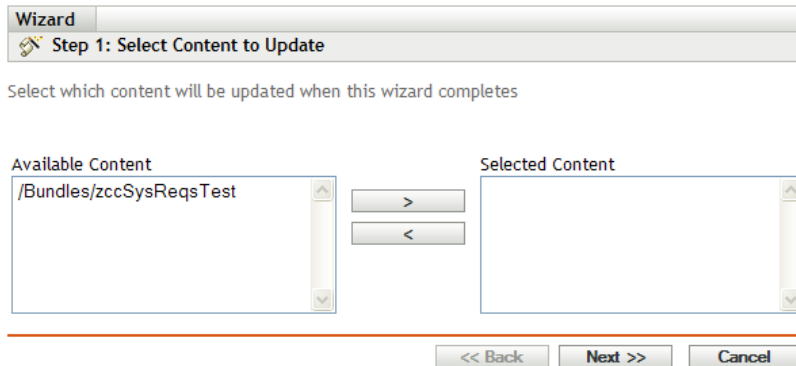
Because Content role devices retrieve their content from their parent Primary Servers, any content that you want hosted on a Satellite must also be hosted on its parent Primary Server.

When you create relationships between content and content servers (ZENworks Primary Servers and Satellites) by using the Select Content to Update Wizard, these relationships adds to any existing relationships. The selected content is hosted on the content server in addition to the content already existing on the server.

Consider the content for Bundle A and Policy B is hosted on Server 1 and not on Server 2. Select Bundle A and Policy B, then use the Select Content to Update Wizard to include the content on Server 2. During the next scheduled replication, Bundle A and Policy B are added to Server 2.

To specify the content to be hosted:

- 1 In ZENworks Control Center, click the *Configuration* tab. In the Server Hierarchy section, select the check boxes next to the Satellites with the Content role that you want to designate as the hosts for one or more pieces of content.
- 2 Click *Action* > *Specify Content* to launch the Select Content to Update Wizard.



- 3 In the *Available Content* list, select the desired content.
You can use Shift+click and Ctrl+click to select multiple bundles or policies.
- 4 Click to move the selected content to the *Selected Content* list.
- 5 Click *Next*.
- 6 Click *Finish* to create the relationships between the content and the content servers.

Depending on the relationships created, the content is replicated to or removed from content servers during the next scheduled replication.

10.7 Manually Replicating Content from a Primary Server to Satellite Devices

You can export content from a ZENworks Primary Server's content repository and then manually import that content into a Satellite device's content repository. This process is sometimes called offline content replication.

For more information about exporting content from the content repository, see the `zman satellite-server-export-content (ssec)` command under “[Satellite Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#). After you export the content, you can copy it to a network drive or to a storage device and then manually import the content into the Satellite device's content repository.

For more information about importing the content into a Satellite device's content repository, see the `zac cdp-import-content (cic)` command under “[Content Distribution Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#).

You cannot manually export content from one ZENworks Primary Server and then import that content into another Primary Server. For information about replicating content between Primary Servers, see [Section 13.2, “Content Replication,” on page 204](#).

10.8 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*.

Any content (bundles, policies, and patches) 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.

10.9 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.

10.10 Specifying a Different Repository for Content Role Satellite (Linux Only)

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

```
/var/opt/novell/zenworks/content-repo/
```

To change the default path to another location accessible to the server, use one of the following ways:

- ♦ If you want to move the content repository to a different location on a different device, create a NFS volume on the device, mount the `content-repo` directory on the volume, and make the root user as the owner of the directory with Read, Write, and Execute permissions.
- ♦ If you want to move the content repository to a different location on the same Linux Satellite, mount the repository on a different volume that has sufficient disk space by using Soft Link.
- ♦ If you want to move the content repository to a OES device, create a NSS volume (CIFS share) on the device, mount the `content-repo` directory on the volume, and make the root user as the owner of the directory with Read, Write, and Execute permissions.

For more information, see [Section 13.1.2, “Changing the Location of the Content Repository on a Linux Server,”](#) on page 199.

10.11 Troubleshooting Satellites

The following section provides solutions to the problems you might encounter while working with Satellites:

- ♦ “Unable to add a Satellite with the Imaging role to a Windows managed device by using the `zman ssc` command” on page 163
- ♦ “Unable to remove a Satellite with the Imaging role from a Windows device by using the `zman ssd` command” on page 163
- ♦ “The managed device is not promoted to the Imaging Satellite role even though the role has been assigned to it” on page 163
- ♦ “Updated Imaging statistics are not displayed on the ZENworks icon when a Windows Vista SP2 managed device is promoted to be a Satellite with the Imaging role” on page 164

Unable to add a Satellite with the Imaging role to a Windows managed device by using the `zman ssc` command

Source: ZENworks 11; Satellite.

Action: To promote a Windows managed device to be a Satellite with the Imaging role, use the `zman ssaimg` command.

For more information about the `zman ssaimg` command, view the `zman man` page (`man zman`) on the ZENworks Server or see “[Satellite Commands](#)” in the *ZENworks 11 Command Line Utilities Reference*.

Unable to remove a Satellite with the Imaging role from a Windows device by using the `zman ssd` command

Source: ZENworks 11; Satellite.

Action: To remove the Imaging Satellite role from a Windows managed device, use the `zman ssrimg` command.

This command does not remove other Satellite roles such as Content or Collection if they are assigned to the device.


For more information about the `zman ssrimg` command, view the `zman man` page (`man zman`) on the ZENworks Server or see “[Satellite Commands](#)” in the *ZENworks 11 Command Line Utilities Reference*.

The managed device is not promoted to the Imaging Satellite role even though the role has been assigned to it

Source: ZENworks 11; Satellite.


Possible Cause: The managed device is unable to contact the Primary Server because of the firewall settings configured on the managed device.

Action: Do the following on the managed device:

- 1 Disable the firewall settings.
- 2 Ping the Primary Server to make sure that the managed device can contact the server.
- 3 Refresh the information on the  icon by right-clicking the icon, then clicking *Refresh*.

Updated Imaging statistics are not displayed on the ZENworks icon when a Windows Vista SP2 managed device is promoted to be a Satellite with the Imaging role

Source: ZENworks 11; Satellite.

Explanation: When you promote a Windows Vista SP2 managed device to be a Satellite with the Imaging role, any updated Imaging statistics are not displayed on the  icon (*Show Properties > Satellite > Imaging*)

Action: To view the latest Imaging statistics on the Satellite:

- 1 At the console prompt, go to
`ZENworks_installation_directory\novell\zenworks\bin\preboot.`
- 2 Run the following command:

```
zmgmcast -status -i Satellite_IP_address
```

11 Server Hierarchy

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.

- ♦ [Section 11.1, "Primary Servers: Peer Versus Parent/Child Relationships," on page 165](#)
- ♦ [Section 11.2, "Satellite Role Relationships," on page 165](#)
- ♦ [Section 11.3, "Changing the Parent-Child Relationships of Primary Servers," on page 166](#)

11.1 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 (bundles, policies, system updates, and patches) 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 11.2, "Satellite Role Relationships," on page 165](#).

11.2 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 or Linux device (server or workstation), but not a Primary Server. The ZENworks version installed on the managed device must be same as that of the Primary Server. When you configure a Satellite, you specify which roles it performs (Authentication,

Collection, Content or Imaging). A Satellite can also perform roles that might be added by third-party products that are snap-ins to the ZENworks 11 framework. For more information about the tasks you can perform on Satellites, see [Chapter 10, “Satellites,” on page 149](#).

The following sections contain more information:

- ♦ [Section 11.2.1, “Authentication Role Server Relationships,” on page 166](#)
- ♦ [Section 11.2.2, “Content Role Server Relationships,” on page 166](#)
- ♦ [Section 11.2.3, “Collection Role Server Relationships,” on page 166](#)
- ♦ [Section 11.2.4, “Imaging Role Server Relationships,” on page 166](#)

11.2.1 Authentication Role Server 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.

11.2.2 Content Role Server Relationships

A Content role identifies a managed device that is able to distribute content (bundles, policies, system updates, and patches) 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.

11.2.3 Collection Role Server Relationships

A Collection role causes a managed device to collect inventory information, messages (errors, warning, informational, and so forth), and policy and bundle statuses, 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.

11.2.4 Imaging Role Server Relationships

An Imaging role causes a managed device to take and restore images within as well as across subnets by using unicast or multicast imaging.

11.3 Changing the Parent-Child Relationships of Primary Servers

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

- ♦ [Section 11.3.1, “Making a Primary Server a Child,” on page 166](#)
- ♦ [Section 11.3.2, “Making a Primary Server a Peer,” on page 167](#)

11.3.1 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*.

11.3.2 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*.

12 Location Awareness

Whether a user is a mobile employee who travels frequently, a corporate office employee, or a work-from-home employee, you want to ensure that the user is connecting to the right ZENworks server, that the correct applications are available, and that the appropriate security policies are being applied to protect the device in its current network environment. ZENworks 11 allows you to create locations that are used by ZENworks Adaptive Agent to determine what should be available or enforced on a managed device.

A location can represent a specific place, such as *Corporate Office Building A*, or a type of place, such as *Office*, depending on your configuration and security needs. A location is a collection of network environments. Each network environment definition identifies a set of conditions (gateways, DNS servers, wireless access points, and so on) that, when matched by a device's current network environment, associates the device to the location.

For example, assume that you have an office in New York and an office in Tokyo. Both offices have the same security requirements. You create an *Office* location and associate it with two network environments: *New York Office Network* and *Tokyo Office Network*. Each of these environments is explicitly defined by a set of wireless access point MAC addresses. Whenever the device determines that its current environment matches the *New York Office Network* or *Tokyo Office Network*, it sets its location to *Office* and applies the configuration and security settings associated with that location.

Administrators can create, delete, and modify locations and network environments only if the relevant locations rights have been assigned to them by the Super Administrator. By default, the administrators do not have the rights to create, delete, and modify locations and network environments. For more information about assigning rights to administrators, see [Section 3.2, "Managing Administrator Rights,"](#) on page 68.

- ♦ [Section 12.1, "Understanding Configuration and Security Locations,"](#) on page 169
- ♦ [Section 12.2, "Defining and Managing Network Environments,"](#) on page 170
- ♦ [Section 12.3, "Creating and Managing Locations,"](#) on page 172
- ♦ [Section 12.4, "Configuring the Closest Server Default Rule,"](#) on page 175
- ♦ [Section 12.5, "Adding Closest Servers to Locations,"](#) on page 181

12.1 Understanding Configuration and Security Locations

A device uses its current network environment to determine both its Configuration location and its Security location.

- ♦ **Configuration location:** The Configuration location is determined from the device's current network environment and cannot be changed. You can use this location to determine closest ZENworks servers and control availability of bundles and Configuration policies. The Configuration location applies to both Windows and Linux devices.
- ♦ **Security location:** This location is used only with ZENworks 11 Endpoint Security Management. Like the Configuration location, it is automatically assigned to a device based on the network environment discovered by the device's ZENworks Adaptive Agent. You can use this location to

determine availability of Security policies, Configuration policies, and Windows bundles. If you are using ZENworks Configuration Management, the Security location, like the Configuration location, can be used to control availability of bundles and policies.

However, whereas the Configuration location is determined from all defined locations (in ZENworks Control Center), the Security location is determined from a subset of those locations made available to the device through a Location Assignment policy. The security location is the location where the end point security component of the agent has determined you are. Because not all users may be allowed in all locations, the Security Location is determined by looking at a subset of all available locations configured in a Location Assignment Policy. The intent of the Security policy is to allow ZENworks Endpoint Security Policies, Windows Bundles, and ZENworks Configuration Policies to be enforced or made available only when the user is determined to be in allowed location. Security Location is currently calculated on Windows devices with the Endpoint Security Management agent components enabled.

12.2 Defining and Managing Network Environments

Network environment definitions are the building blocks for locations. You can define a network environment while you are creating a location, but we recommend that you define network environments first and then add them as you are creating locations.

- ♦ [Section 12.2.1, “Defining Network Environments,” on page 170](#)
- ♦ [Section 12.2.2, “Managing Network Environments,” on page 171](#)
- ♦ [Section 12.2.3, “Backing Up Network Environments,” on page 172](#)

12.2.1 Defining Network Environments

- 1 In ZENworks Control Center, click *Configuration > Locations*.
- 2 In the Network Environments panel, click *New* to launch the Create New Network Environment Wizard.
- 3 On the Define Details page, fill in the following fields, then click *Next*:

Network Environment Name: Provide a name for the network environment. Users never see the name; it displays only in ZENworks Control Center. The name must conform to ZENworks object naming conventions. For details, see [Section 1.8, “Naming Conventions in ZENworks Control Center,” on page 28](#).

Description: Provide optional information about the new environment. This is for your benefit. This information appears only in ZENworks Control Center.

Throttle Rate: Specify the bandwidth throttle rate for distributing content to devices located in this network environment. To maximize performance of your ZENworks Servers and network system, high bandwidth environments can use one set of throttle rates and low bandwidth environments a different set of throttle rates.

For every location or network environment an effective throttle rate can be set. Content that is being downloaded to a particular location should be downloaded with the set throttle rate. However, if content is being delivered to an end point from a content distribution satellite, the throttling rate set on the location or network environment is ineffective. The full bandwidth is being used for downloading the content.

The throttle rate can be overridden in a bundle so that high-priority patch and bundle content can be deployed quickly. If you do not specify a throttle rate, the network environment inherits the throttle rate assigned to the location.

- 4 On the Network Environment Details, fill in the following fields, then click *Next*.

Limit to Adapter Type: By default, the network services you define on this page are evaluated against a device's wired, wireless, and dial-up network adapters. If you want to limit the evaluation to a specific adapter type, select *Wired*, *Wireless*, or *Dial Up*.

Minimum Match: Specify the minimum number of defined network services that must be matched in order to select this network environment.

For example, if you define one gateway address, three DNS servers, and one DHCP server, you have a total of five services. You can specify that at least three of those services must match in order to select this network environment.

When specifying a minimum match number, keep the following in mind:

- ♦ The number cannot be less than the number of services marked as *Must Match*.
- ♦ The number should not exceed the total number of defined services. If so, the minimum match would never be reached, resulting in the network environment never being selected.

Network Services: The Network Services panel lets you define the network services that the Endpoint Security Agent evaluates to see if its current network environment matches this network environment. Select the tab for the network service you want to define, click *Add*, then fill in the required information. If a network service includes a *Must Match* option, select the option to require that the network service exist in order to match this network environment.

For detailed information about each service, click the *Help > Current Page*.

- 5 On the Summary page, click *Finish* to add the network environment definition to the list.

12.2.2 Managing Network Environments

- 1 In ZENworks Control Center, click *Configuration > Locations*.
- 2 In the Network Environments panel, perform the following tasks to manage network environments:

Task	Steps	Additional Details
Edit a network environment	<ol style="list-style-type: none"> 1. Click the environment name. 2. Modify the fields as desired. If you need help with the options, click the <i>Help</i> button. 3. Click <i>Apply</i>. 	If you choose to exclude the Closest Server Default Rule for a network environment that does not have any closest server rule configured, then the network environment is considered as a disconnected network environment.
Delete a network environment	<ol style="list-style-type: none"> 1. Select the check box in front of the network environment. 2. Click <i>Delete</i>. 	You cannot delete a network environment that has ZENworks objects associated. To delete a network environment that has ZENworks objects associated, you must first remove the association and then delete the network environment.
Rename a network environment	<ol style="list-style-type: none"> 1. Select the check box in front of the location. 2. Click <i>Rename</i> to display the Rename Network Environment dialog box. 3. Specify the new name in the <i>Name</i> field, then click <i>OK</i>. 	The name must conform to the ZENworks object naming conventions .

Task	Steps	Additional Details
View the list of locations that include a network environment	1. Click the number in the <i>Location Reference Count</i> column.	The Associated Locations dialog box displays all the locations to which this network environment is associated.
View the list of ZENworks Objects associated to a network environment	1. Click the number in the <i>Reference Count</i> column.	<p>The Relationships page displays the ZENworks objects such as policies and bundles that are associated to the network environment. A ZENworks object such as a bundle or policy is associated with a network environment only if it contains a reference to the network environment through system requirement or policy configuration.</p> <p>The list displays the following information:</p> <ul style="list-style-type: none"> ◆ Name of the associated policy or bundle. ◆ Type of the policy or bundle. ◆ Location of the associated policy or bundle.

12.2.3 Backing Up Network Environments

You can back up the network environments by using the following zman commands:

- ◆ **network-environment-export-to-file (neetf):** Exports a network environment's information to an XML-formatted file.
- ◆ **network-environment-create (nec):** Creates a network environment from the information contained in the specified XML file.

For more information about these commands and their usage, see "[Network Environment Commands](#)" in the *ZENworks 11 Command Line Utilities Reference*.

12.3 Creating and Managing Locations

Security requirements for a device can differ from location to location. You might, for example, have different personal firewall restrictions for a device located in an airport terminal than for a device located in an office inside your corporate firewall.

To make sure that a device's security requirements are appropriate for whatever location it is in, Endpoint Security Management supports both global policies and location-based policies. A global policy is applied regardless of the device's location. A location-based policy is applied only when the device's current location meets the criteria for a location associated with the policy. For example, if you create a location-based policy for your corporate office and assign it to a laptop, that policy is applied only when the laptop's location is the corporate office.

If you want to use location-based policies, you must first define the locations that make sense for your organization. A location is a place, or type of place, for which you have specific security requirements. For example, you might have different security requirements for when a device is used in the office, at home, or in an airport.

Locations are defined by network environments. Assume that you have an office in New York and an office in Tokyo. Both offices have the same security requirements. Therefore, you create an Office location and associate it with two network environments: New York Office Network and Tokyo Office Network. Each of these environments is explicitly defined by a set of gateway, DNS server, and wireless access point services. Whenever the Endpoint Security Agent determines that its current environment matches the New York Office Network or Tokyo Office Network, it sets its location to Office and applies the security policies associated with the Office location.

Unknown is the default location that is automatically created after you install ZENworks 11. If ZENworks Adaptive Agent is unable to find a location that matches its current environment, the managed device is associated with the Unknown location. You cannot delete or rename the Unknown location.

The following sections explain how to create locations:

- ♦ [Section 12.3.1, “Creating Locations,” on page 173](#)
- ♦ [Section 12.3.2, “Managing Locations,” on page 173](#)
- ♦ [Section 12.3.3, “Location and Network Environment Selection on a Managed Device,” on page 175](#)

12.3.1 Creating Locations

When you create a location, you provide a location name and then associate the desired network environments with the location.

- 1 In ZENworks Control Center, click *Configuration > Locations*.
- 2 In the Locations panel, click *New* to launch the Create New Location Wizard.
- 3 On the Define Details page, specify a name for the location, then click *Next*.
As you complete the wizard, if you need more information about any fields or options, click the *Help* button located in the upper-right corner of ZENworks Control Center.
- 4 On the Assign Network Environments page:
 - 4a Select *Assign existing network Environments to the Location*.
 - 4b Click *Add*, select the network environments you want to define the location, then click *OK* to add them to the list.
 - 4c Click *Next* when you are finished adding network environments.
- 5 On the summary page, click *Finish* to create the location and add it to the Locations list.

When you add a new location, the *Unknown* location is listed last, and its order cannot be changed.

For more information on how the location and the network environment are selected on a managed device, see [Section 12.3.3, “Location and Network Environment Selection on a Managed Device,” on page 175](#)

The following information is displayed for each location you add to the list:

- ♦ **Name:** The name assigned to the location.
- ♦ **Reference Count:** The number of ZENworks objects that are associated to a location.

12.3.2 Managing Locations

The following table lists the tasks you can perform to manage locations:

Task	Steps	Additional Details
Edit a location	<ol style="list-style-type: none"> 1. Click the location name. 2. Modify the fields as desired. If you need help with the options, click the <i>Help</i> button. 3. Click <i>Apply</i>. 	<p>For an <i>Unknown</i> location, you can edit only the throttle rate (in the <i>Details</i> tab) and the Location Closest Servers settings (in the <i>Servers</i> tab).</p> <p>If you choose to exclude the Closest Server default rule and do not configure Configuration and Authentication servers for a location, then the location is considered as a disconnected location. During the next general refresh of the managed device, the location is displayed as <i>Unknown</i> in the ZENworks icon properties page.</p>
Delete a location	<ol style="list-style-type: none"> 1. Select the check box in front of the location. 2. Click <i>Delete</i>. 	<p>You cannot delete the <i>Unknown</i> location.</p> <p>You cannot delete a location that has ZENworks objects associated. To delete a location that has ZENworks objects associated, you must first remove the association and then delete the location.</p>
Rename a location	<ol style="list-style-type: none"> 1. Select the check box in front of the location. 2. Click <i>Rename</i> to display the Rename Location dialog box. 3. Specify the new name in the <i>Name</i> field, then click <i>OK</i>. 	<p>The name must conform to the ZENworks object naming conventions. You cannot rename the <i>Unknown</i> location.</p> <p>IMPORTANT: If the location is referenced by a Location Assignment policy (one of the security policies used with Endpoint Security Management), the Location Assignment policy must be republished before the name change will be reflected on assigned devices. For information about republishing a security policy, see “Publishing Policies” in the <i>ZENworks 11 SP2 Endpoint Security Policies Reference</i>.</p>
Reorder the locations	<ol style="list-style-type: none"> 1. Select the check box next to the location you want to move. You can select multiple locations to move at one time. 2. Click <i>Move Up</i> or <i>Move Down</i> to reposition the location. 	<p>The order of the list determines which location is used if the Adaptive Agent matches multiple locations.</p> <p>For more information on how the location and the network environment are selected on a managed device, see Section 12.3.3, “Location and Network Environment Selection on a Managed Device,” on page 175</p> <p>When you add a new location, the <i>Unknown</i> location is listed last, and its order cannot be changed.</p>

Task	Steps	Additional Details
View the list of ZENworks Objects associated to a location	1. Click the number in the <i>Reference Count</i> column.	<p>The Relationships page displays the ZENworks objects such as policies and bundles that are associated to the location. A ZENworks object such as a bundle or policy is associated with a location only if it contains a reference to the location through system requirement or policy configuration.</p> <p>The list displays the following information:</p> <ul style="list-style-type: none"> ◆ Name of the associated policy or bundle. ◆ Type of the policy or bundle. ◆ Location of the associated policy or bundle.

12.3.3 Location and Network Environment Selection on a Managed Device

The network environments within L1 are listed in the following order: NE1, NE2, and NE4.

The network environments within L2 are listed in the following order: NE2, NE3, and NE4.

The Adaptive Agent on the managed device detects that NE2, NE3 and NE4 all match on the managed device.

12.4 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.

The Closest Server Default rule is applicable for ZENworks Configuration Management 10.2.x/10.3.x and ZENworks 11 devices. If you do not want the Closest Server Default Rule to be used to determine the closest servers for devices, you can create customized Closest Server rules. You can create the Closest Server rules for ZENworks Configuration 10.2.x/10.3.x devices at three levels: Management zone, device folder, and device. These settings are disabled when you baseline your Management Zone to ZENworks 11. For a ZENworks 11 device, the customized closest servers are configured on locations. For detailed information, see [Chapter 12, "Location Awareness," on page 169](#).

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*.

[Configuration](#) > Closest Server Default Rule ⌵

Closest Server Default Rule ✕

Configure the setting for how managed devices determine their closest server using the default rule.

Collection Servers:

Move Up Move Down Groups ▾ L4 Switch ▾

	Name
<input type="checkbox"/>	← /Devices/Servers/dmontrov2

Content Servers:

Move Up Move Down Groups ▾ L4 Switch ▾

	Name
<input type="checkbox"/>	← /Devices/Servers/dmontrov2

Configuration Servers:

Move Up Move Down Groups ▾ L4 Switch ▾

	Name
<input type="checkbox"/>	← /Devices/Servers/dmontrov2

Authentication Servers:

Move Up Move Down Groups ▾ L4 Switch ▾

	Name
<input type="checkbox"/>	← /Devices/Servers/dmontrov2

OK Apply Reset Cancel

- 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	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ◆ 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	<ol style="list-style-type: none"> 1. In the desired server list, select the check boxes for the servers you want to include in the group, then click <i>Groups > Create Group from Selection</i>. or If you want to create an empty group, click <i>Groups > Create Empty Group</i>. You can add servers to the empty group later using the <i>Groups > Add to Group</i> option. 2. Specify a name for the group, then click <i>OK</i> to add the group to the list. 3. Click <i>Apply</i> to make the change effective. 	
Add servers to a group	<ol style="list-style-type: none"> 1. In the desired server list, select the check boxes for the servers you want to add to the group. 2. Click <i>Groups > Add to Group</i>. 3. Do one of the following: <ul style="list-style-type: none"> ◆ To add the selected servers to a new group, select <i>Create New</i>, specify a group name, then click <i>OK</i>. ◆ To add the selected servers to an existing group, select a group from the list in the <i>Select Existing</i> field, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ◆ 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	<ol style="list-style-type: none"> 1. In the server list to which you want to copy a group, click <i>Groups > Copy Existing Group</i>. For example, to copy a group from the Collection Servers list to the Content Servers list, click <i>Groups > Copy Existing Group</i> in the Content Servers list. 2. Select the desired group from the list, then click <i>OK</i> to copy the group. 3. Click <i>Apply</i> to make the change effective. 	<p>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.</p>
Remove servers from a group	<ol style="list-style-type: none"> 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 <i>Groups > Remove from Group</i>, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	<p>The servers are not removed from the server list, only from the group.</p>
Remove a group	<ol style="list-style-type: none"> 1. In the server list, select the check box for the group you want to remove. 2. Click <i>Groups > Remove Group</i>, then click <i>OK</i>. 3. Click <i>Apply</i> to make the change effective. 	<p>The group's servers are not removed, only the group.</p>

- 2c** (Conditional) If you have ZENworks Servers 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	<ol style="list-style-type: none"> 1. In the server list, select the check boxes for the servers to include in the L4 switch definition, then click <i>L4 Switch > Create L4 Switch Definition from Selection</i>. or If you want to create an empty L4 switch definition, click <i>L4 Switch > Create Empty</i>. You can add servers to the empty definition later using the <i>L4 Switch > Add to L4 Switch Definition</i> option. 2. Specify the DNS name or the IP address of the L4 switch, then click <i>OK</i> to add the L4 switch to the list. 3. Click <i>Apply</i> to make the change effective. 	
Add servers to an L4 switch definition	<ol style="list-style-type: none"> 1. In the server list, select the check boxes for the servers you want to add to the L4 switch definition. 2. Click <i>L4 Switch > Add to L4 Switch Definition</i>. 3. Do one of the following: <ul style="list-style-type: none"> ◆ To add the selected servers to a new L4 switch definition, select <i>Create New</i> and specify the DNS name or IP address of the L4 switch, then click <i>OK</i>. ◆ To add the selected servers to an existing L4 switch definition, select an L4 switch definition from the list in the <i>Select Existing</i> field, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ♦ 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	<ol style="list-style-type: none"> 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 <i>L4 Switch > Remove from L4 Switch Definition</i>, then click <i>OK</i>. 4. Click <i>Apply</i> 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	<ol style="list-style-type: none"> 1. In the server list, click <i>L4 Switch > Remove L4 Switch Definition</i>, then click <i>OK</i>. 2. Click <i>Apply</i> 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.

12.5 Adding Closest Servers to Locations

When a ZENworks Management Zone includes more than one ZENworks Primary Server or Satellite (collectively referred to as servers), devices need to know which servers to contact for collection, content, configuration, and authentication purposes. These servers are referred to as *closest servers*.

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.

Closest servers can be configured on locations, network environments, and in the Closest Server Default Rule. The Closest servers for network environment override the Closest servers for locations. When a managed device requests its list of closest server, the ZENworks system combines the server lists from the location and default rule (in that order) or network environment and default rule (in that order), and passes the combined list to the device. The managed device contacts the first server in the list and continues down the list until it is able to connect. All of the Closest Server rules are received by the managed device and are cached locally. If the location of a managed device changes, the settings and closest servers rules associated with the new location are applied to the device.

For example, assume that the device detects that it is in NetworkEnvironment1, which is associated with Location1. The closest authentication servers for each of these are defined as follows:

- ◆ NetworkEnvironment1: Server4, Server5
- ◆ Location: Server4, Server3
- ◆ Default Rule: Server1, Server2, Server6

For authentication purposes, a device would receive the following server list. It would attempt to connect to the first one in the list, then the second, and so on until it successfully connected.

- ◆ Server4 (network environment)
- ◆ Server5 (network environment)
- ◆ Server1 (default rule)
- ◆ Server2 (default rule)
- ◆ Server6 (default rule)

ZENworks allows you to configure a location or network environment to be a disconnected location or network environment. If a managed device detects itself to be in a disconnected location or network environment, it does not contact any of the ZENworks servers or Satellites until the location or network environment of the device changes to a non-disconnected location. For example, if you do not want your laptop to contact any of the ZENworks servers or Satellites when you are using it from your house, define a home location as the disconnected location by performing the following tasks while configuring the location:

- ◆ Select the *Exclude the Closest Server Default Rule* option.
- ◆ Do not configure any Closest Server rules.

You can create Closest servers for locations and network environment in one of the following ways:

- ◆ **Using zman commands:** For detailed information on how to create Closest servers for locations by using zman commands, see “[Location Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#) or view the zman man page (`man zman`) on the server. For detailed information on how to create Closest servers for network environment by using zman commands, see “[Network Environment Commands](#)” in the [ZENworks 11 Command Line Utilities Reference](#) or view the zman man page (`man zman`) on the server.
- ◆ **Using ZENworks Control Center:** Review the following sections:
 - ◆ [Section 12.5.1, “Creating Closest Server Rules for a Location,”](#) on page 183
 - ◆ [Section 12.5.2, “Creating Closest Server Rules for a Network Environment,”](#) on page 189

12.5.1 Creating Closest Server Rules for a Location

The Location Closest Servers panel in ZENworks Control Center lets you assign ZENworks Primary Servers and Satellites to the location. When a device detects that it is within the location, it contacts the defined servers. By defining the closest servers for the location, you can reduce wide area network traffic and increase ZENworks performance.

- 1 In ZENworks Control Center, click *Configuration > Locations*.
- 2 In the Locations panel, click the location to display its details.
- 3 Click the *Servers* tab.
- 4 Click *Override* to override the closest server settings from the location.
- 5 (Conditional) If you do not want the Closest Server Default Rule to be used in determining closest servers, select the *Exclude the Closest Server Default Rule* option.

Closest servers can also be configured on network environments and in the Closest Server Default Rule. When a managed device requests its list of closest server, the ZENworks system combines the server lists from the network environment, location, and default rule (in that order) and passes the combined list to the device. The managed device contacts the first server in the list and continues down the list until it is able to connect.

NOTE: If you choose to exclude the Closest Server Default Rule for a location that does not have any closest server rule configured, then the location is considered as a disconnected location.

- 6 Configure the closest servers:
 - 6a Manage individual servers in any of the server lists (Collection, Content, Configuration, Imaging and Authentication):

Task	Steps	Additional Details
Add a server to a list	<ol style="list-style-type: none"> 1. In the desired server list (Collection, Content, Configuration, or Authentication), click <i>Add</i>. 2. Browse for and select one or more ZENworks Servers or Satellites. 3. Click <i>OK</i> to add the selected servers to the list. 	<p>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.</p> <p>Satellites, however, can be configured for specific roles (Collection, Content, Imaging, and Authentication). This has the following implications:</p> <ul style="list-style-type: none"> ◆ 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.
Reorder the list	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ◆ 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	<ol style="list-style-type: none"> In the server list, select the check box for the server you want to remove. Click <i>Remove</i>. 	

6b Manage server groups in any of the server lists (Collection, Content, Configuration, Imaging and Authentication).

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	<ol style="list-style-type: none"> In the desired server list, select the check boxes for the servers you want to include in the group, then click <i>Groups > Create Group from Selection</i>. <p>or</p> <p>If you want to create an empty group, click <i>Groups > Create Empty Group</i>.</p> <p>You can add servers to the empty group later using the <i>Groups > Add to Group</i> option. Specify a name for the group, then click <i>OK</i> to add the group to the list. Click <i>Apply</i> to make the change effective. </p>	

Task	Steps	Additional Details
Add servers to a group	<ol style="list-style-type: none"> In the desired server list, select the check boxes for the servers you want to add to the group. Click <i>Groups > Add to Group</i>. Do one of the following: <ul style="list-style-type: none"> To add the selected servers to a new group, select <i>Create New</i>, specify a group name, then click <i>OK</i>. To add the selected servers to an existing group, select a group from the list in the <i>Select Existing</i> field, then click <i>OK</i>. Click <i>Apply</i> to make the change effective. 	
Reorder the list	<ol style="list-style-type: none"> In the server list, select the check box for the server, group, or L4 switch you want to move. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ♦ 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	<ol style="list-style-type: none"> In the server list to which you want to copy a group, click <i>Groups > Copy Existing Group</i>. For example, to copy a group from the Collection Servers list to the Content Servers list, click <i>Groups > Copy Existing Group</i> in the Content Servers list. Select the desired group from the list, then click <i>OK</i> to copy the group. Click <i>Apply</i> to make the change effective. 	<p>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.</p>

Task	Steps	Additional Details
Remove servers from a group	<ol style="list-style-type: none"> 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 <i>Groups > Remove from Group</i>, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	The servers are not removed from the server list, only from the group.
Remove a group	<ol style="list-style-type: none"> 1. In the server list, select the check box for the group you want to remove. 2. Click <i>Groups > Remove Group</i>, then click <i>OK</i>. 3. Click <i>Apply</i> to make the change effective. 	The group's servers are not removed, only the group.

6c If you have ZENworks Servers 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.

Manage L4 switches in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Create an L4 switch definition	<ol style="list-style-type: none">1. In the server list, select the check boxes for the servers to include in the L4 switch definition, then click <i>L4 Switch > Create L4 Switch Definition from Selection</i>. or If you want to create an empty L4 switch definition, click <i>L4 Switch > Create Empty</i>. You can add servers to the empty definition later using the <i>L4 Switch > Add to L4 Switch Definition</i> option.2. Specify the DNS name or the IP address of the L4 switch, then click <i>OK</i> to add the L4 switch to the list.3. Click <i>Apply</i> to make the change effective.	
Add servers to an L4 switch definition	<ol style="list-style-type: none">1. In the server list, select the check boxes for the servers you want to add to the L4 switch definition.2. Click <i>L4 Switch > Add to L4 Switch Definition</i>.3. Do one of the following:<ul style="list-style-type: none">◆ To add the selected servers to a new L4 switch definition, select <i>Create New</i> and specify the DNS name or IP address of the L4 switch, then click <i>OK</i>.◆ To add the selected servers to an existing L4 switch definition, select an L4 switch definition from the list in the <i>Select Existing</i> field, then click <i>OK</i>.4. Click <i>Apply</i> to make the change effective.	

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ♦ 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	<ol style="list-style-type: none"> 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 <i>L4 Switch > Remove from L4 Switch Definition</i>, then click <i>OK</i>. 4. Click <i>Apply</i> 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	<ol style="list-style-type: none"> 1. In the server list, click <i>L4 Switch > Remove L4 Switch Definition</i>, then click <i>OK</i>. 2. Click <i>Apply</i> to make the change effective. 	The L4 switch definition's servers are not removed, only the definition.

7 Click *Apply* to save your changes.

12.5.2 Creating Closest Server Rules for a Network Environment

The Network Environment Closest Servers panel in ZENworks Control Center lets you assign ZENworks Primary Servers and Satellites to the network environment. When a device is located within the network environment, it contacts the defined servers. By defining the closest servers for the network environment, you can reduce wide area network traffic and increase ZENworks performance

- 1 In ZENworks Control Center, click *Configuration > Locations*.
- 2 In the Network Environments panel, click the network environment to display its details.
- 3 Click the *Servers* tab.

- 4 Click *Override* to override the closest server settings from the location. The resulting list includes only the servers defined for the network environment and for the Closest Server Default Rule.
- 5 (Conditional) If you do not want the Closest Server Default Rule to be used in determining closest servers, select the *Exclude the Closest Server Default Rule* option.

Closest servers can also be configured on locations and in the Closest Server Default Rule. When a managed device requests its list of closest server, the ZENworks system combines the server lists from the network environment, location, and default rule (in that order) and passes the combined list to the device. The managed device contacts the first server in the list and continues down the list until it is able to connect. This option excludes the default rule from being included in the server list.

NOTE: If you choose to exclude the Closest Server Default Rule for a network environment that does not have any closest server rule configured, then the network environment is considered as a disconnected network environment.

6 Configure the closest servers:

- 6a Manage individual servers in any of the server lists (Collection, Content, Configuration, Imaging and Authentication):

Task	Steps	Additional Details
Add a server to a list	<ol style="list-style-type: none"> 1. In the desired server list (Collection, Content, Configuration, or Authentication), click <i>Add</i>. 2. Browse for and select one or more ZENworks Servers or Satellites. 3. Click <i>OK</i> to add the selected servers to the list. 	<p>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.</p> <p>Satellites, however, can be configured for specific roles (Collection, Content, Imaging, and Authentication). This has the following implications:</p> <ul style="list-style-type: none"> ◆ 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. <p>Satellite roles are configured in the Server Hierarchy panel on the Configuration tab.</p>

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ◆ Collection Servers: Server1, Group1, Server3, L4Switch5 ◆ Content Servers: L4Switch5 ◆ Configuration Servers: Server3, Server2, Group1 ◆ Authentication Servers: Server1, Server2
Remove a server from a list	<ol style="list-style-type: none"> 1. In the server list, select the check box for the server you want to remove. 2. Click <i>Remove</i>. 	

6b Manage server groups in any of the server lists (Collection, Content, Configuration, and Authentication).

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.

Task	Steps	Additional Details
Create a server group	<ol style="list-style-type: none"> 1. In the desired server list, select the check boxes for the servers you want to include in the group, then click <i>Groups > Create Group from Selection</i>. or If you want to create an empty group, click <i>Groups > Create Empty Group</i>. You can add servers to the empty group later using the <i>Groups > Add to Group</i> option. 2. Specify a name for the group, then click <i>OK</i> to add the group to the list. 3. Click <i>Apply</i> to make the change effective. 	
Add servers to a group	<ol style="list-style-type: none"> 1. In the desired server list, select the check boxes for the servers you want to add to the group. 2. Click <i>Groups > Add to Group</i>. 3. Do one of the following: <ul style="list-style-type: none"> ◆ To add the selected servers to a new group, select <i>Create New</i>, specify a group name, then click <i>OK</i>. ◆ To add the selected servers to an existing group, select a group from the list in the <i>Select Existing</i> field, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ♦ 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	<ol style="list-style-type: none"> 1. In the server list to which you want to copy a group, click <i>Groups > Copy Existing Group</i>. For example, to copy a group from the Collection Servers list to the Content Servers list, click <i>Groups > Copy Existing Group</i> in the Content Servers list. 2. Select the desired group from the list, then click <i>OK</i> to copy the group. 3. Click <i>Apply</i> to make the change effective. 	<p>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.</p>
Remove servers from a group	<ol style="list-style-type: none"> 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 <i>Groups > Remove from Group</i>, then click <i>OK</i>. 4. Click <i>Apply</i> to make the change effective. 	<p>The servers are not removed from the server list, only from the group.</p>
Remove a group	<ol style="list-style-type: none"> 1. In the server list, select the check box for the group you want to remove. 2. Click <i>Groups > Remove Group</i>, then click <i>OK</i>. 3. Click <i>Apply</i> to make the change effective. 	<p>The group's servers are not removed, only the group.</p>

- 6c** If you have ZENworks Servers 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.

Manage L4 switches in any of the server lists (Collection, Content, Configuration, and Authentication):

Task	Steps	Additional Details
Create an L4 switch definition	<ol style="list-style-type: none"><li data-bbox="638 310 1019 449">1. In the server list, select the check boxes for the servers to include in the L4 switch definition, then click <i>L4 Switch > Create L4 Switch Definition from Selection</i>. or If you want to create an empty L4 switch definition, click <i>L4 Switch > Create Empty</i>. You can add servers to the empty definition later using the <i>L4 Switch > Add to L4 Switch Definition</i> option.<li data-bbox="638 737 1019 842">2. Specify the DNS name or the IP address of the L4 switch, then click <i>OK</i> to add the L4 switch to the list.<li data-bbox="638 863 1019 915">3. Click <i>Apply</i> to make the change effective.	
Add servers to an L4 switch definition	<ol style="list-style-type: none"><li data-bbox="638 947 1019 1020">1. In the server list, select the check boxes for the servers you want to add to the L4 switch definition.<li data-bbox="638 1041 1019 1094">2. Click <i>L4 Switch > Add to L4 Switch Definition</i>.<li data-bbox="638 1115 1019 1524">3. Do one of the following:<ul style="list-style-type: none"><li data-bbox="699 1157 1019 1325">◆ To add the selected servers to a new L4 switch definition, select <i>Create New</i> and specify the DNS name or IP address of the L4 switch, then click <i>OK</i>.<li data-bbox="699 1346 1019 1514">◆ To add the selected servers to an existing L4 switch definition, select an L4 switch definition from the list in the <i>Select Existing</i> field, then click <i>OK</i>.<li data-bbox="638 1535 1019 1587">4. Click <i>Apply</i> to make the change effective.	

Task	Steps	Additional Details
Reorder the list	<ol style="list-style-type: none"> 1. In the desired server list, select the check box for the server, group, or L4 switch you want to move. 2. Click <i>Move Up</i> or <i>Move Down</i> as necessary to change its order in the list. 3. Repeat as necessary to order the list. 	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ♦ 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	<ol style="list-style-type: none"> 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 <i>L4 Switch > Remove from L4 Switch Definition</i>, then click <i>OK</i>. 4. Click <i>Apply</i> 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	<ol style="list-style-type: none"> 1. In the server list, click <i>L4 Switch > Remove L4 Switch Definition</i>, then click <i>OK</i>. 2. Click <i>Apply</i> to make the change effective. 	The L4 switch definition's servers are not removed, only the definition.

7 Click *Apply* to save your changes.

13 Content

ZENworks replicates and distributes content among Primary Servers, Satellites, and managed devices. This includes the following content:

- ♦ **Bundles:** The files, configuration settings, installation instructions, and so forth required to deploy and manage an application or files on a device. Used in ZENworks Configuration Management and ZENworks Patch Management.
- ♦ **Policies:** The set of rules that control a range of hardware and software configuration settings on managed devices. Used in ZENworks Configuration Management.
- ♦ **Patches:** The files and instructions required to update existing software on a managed device. Used in ZENworks Patch Management.
- ♦ **System Updates:** The software updates for ZENworks system components. Used in ZENworks Configuration Management, ZENworks Asset Management, ZENworks Patch Management, ZENworks Endpoint Security Management and ZENworks Full Disk Encryption.
- ♦ [Section 13.1, “Content Repository,” on page 197](#)
- ♦ [Section 13.2, “Content Replication,” on page 204](#)
- ♦ [Section 13.3, “Content Delivery,” on page 210](#)

13.1 Content Repository

Each ZENworks Server contains a content repository. The content repository stores all bundle, policy, patch management and system update content that has been replicated to the server and any images that have been captured and stored to the server.

ZENworks 11 supports any filesystem to host the content repository, although each filesystem has advantages and limitations. For example, the XFS filesystem handles very large files, which can be an advantage, depending on the nature of the content in the repository.

A single content repository cannot be shared by multiple Primary Servers. Each server must use its own content repository.

The content repository is self-maintaining. Whenever you add a bundle or policy, the bundle or policy content is added to the appropriate content repositories based upon the replication settings. Whenever you remove a bundle or policy or change which servers host its content, the bundle or policy content is also removed from the appropriate servers.

If necessary, you can move the content repository to a different location. The following sections provide instructions:

- ♦ [Section 13.1.1, “Changing the Location of the Content Repository on a Windows Server,” on page 198](#)
- ♦ [Section 13.1.2, “Changing the Location of the Content Repository on a Linux Server,” on page 199](#)
- ♦ [Section 13.1.3, “Mounting the Content Repository on a Linux Server to an NSS Volume,” on page 201](#)

- ♦ [Section 13.1.4, “Changing the Location of the Temporary Location on a Windows Server,” on page 202](#)
- ♦ [Section 13.1.5, “Changing the Location of the Temporary Location on a Linux Server,” on page 203](#)

13.1.1 Changing the Location of the Content Repository on a Windows Server

The content repository is found in the following location on a Windows server:

```
installation_path\zenworks\work\content-repo
```

You can specify a different disk drive to be your content repository. In Windows, this is done by “mounting” the drive. Mounting is simply pointing an existing path to a hard drive partition without the use of mapped drive letters.

In the following steps, you mount the default content repository location to a disk drive partition, which becomes the new content repository:

- 1 Make sure that the disk drive you want to use is attached to the server and is properly formatted as NTFS.

This disk drive can be an existing or new one for the machine. The hardware must be recognized by the server. However, do not specify a drive letter if you are adding a new disk drive to the machine. Windows does not allow mounting to a drive letter.

- 2 Stop all ZENworks Services.

- 3 Because an empty `content-repo` directory must exist in the default location (`installation_path\zenworks\work\content-repo`) to be the pointer to the new content repository location, do one of the following to make sure that there is no content in the default location:
 - ♦ If you need to save the content that is now in this directory, rename the existing directory and create a new directory named `content-repo`.

You can later copy the content from this renamed directory to the new content repository location (see [Step 11](#)).

- ♦ If you do not need any of the content in the existing `content-repo` directory, delete the directory and re-create it.
 - ♦ If the `content-repo` directory is not present in the path given above, create the path and directory.
- 4 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.
 - 5 Select *Disk Management* under the *Storage* section in the left pane.
The disk drive you selected in [Step 1](#) should be displayed in the right pane.
 - 6 (Conditional) If a driver letter is associated with the partition that you want to use as the new content repository location, do the following:
 - 6a In the Computer Management dialog box, right-click the drive’s partition.
 - 6b Select *Change Drive Letter and Paths*.
 - 6c Select the drive letter.
 - 6d Click *Remove*, then select *Yes* to confirm.

- 7 Right-click the partition of the disk drive that you want to use as your content repository, then select *Change Driver Letter and Paths*.
This is the disk drive that you will mount to the `content-repo` directory in [Step 9](#).
- 8 Click *Add*.
This displays the Add Drive Letter or Path dialog box.
- 9 Select *Mount in the Following Empty NTFS Folder*, browse for and select the default `content-repo` directory, then click *Next*.
The default directory is `installation_path\zenworks\work\content-repo`.
This mounts the default path to the hard drive partition that you selected in [Step 7](#).
If necessary, format the drive as NTFS using the Computer Management feature in Windows.
- 10 Click the buttons as necessary to exit and save the configuration change.
- 11 (Conditional; see [Step 3](#)) Copy the files from the old renamed `content-repo` directory to the new `content-repo` directory.
- 12 Start all ZENworks Services.

From this point on, all ZENworks 11 data is written directly to the new content repository location on the selected hard drive partition.

13.1.2 Changing the Location of the Content Repository on a Linux Server

You can store your data on a local mount or on a network share such as NFS, SMB, or CIFS and mount the share in your `content-repo` directory to access your data.

You can also create a symbolic link on your local hard drive if you want to store your data elsewhere on your local device. However, the existing `content-repo` directory must be deleted.

- 1 (Optional) Run the following command to move the content from the `content-repo` directory to a new directory on the disk to which you want to create the symbolic link:

```
mv /var/opt/novell/zenworks/content-repo/* another-local-directory-on-device
```

- 2 Run the following command to delete the `content-repo` directory:

```
rm -rf /var/opt/novell/zenworks/content-repo/
```

- 3 Run the following command to create the symbolic link to the new directory where you want to store the data:

```
ln -s another-local-directory-on-device /var/opt/novell/zenworks/content-repo
```

See the `ln(1)` man page for more information about how to symbolically link directories.

NOTE: You do not need to perform [Step 4](#) if you are trying to configure the content repository on a Linux Satellite Server.

- 4 ZENworks requires that the ZENworks user has complete ownership rights on the directory to which you have created the symbolic link. Run the following command to make the ZENworks user the owner of this directory:

```
chown zenworks:zenworks -R /var/opt/novell/zenworks/content-repo/
```

See the `chown(1)` man page for more information about how to change ownership of directories.

The following sections provide information on managing content repository locations on Linux.

- ♦ [“Mounting a Share” on page 200](#)
- ♦ [“Unmounting a Share” on page 200](#)
- ♦ [“Creating a Permanent Mount” on page 200](#)
- ♦ [“Moving Existing Content to the New Repository” on page 201](#)

Mounting a Share

After configuring a share on a remote machine, you can mount it from `/var/opt/novell/zenworks/content-repo`. Stop all ZENworks Services before mounting the share.

Use the following command to mount the share:

```
mount -t cifs -o username=username //example.machine.com/share_name /var/opt/novell/zenworks/content-repo
```

In the command, `//example.machine.com/share_name` is the share to mount and `/var/opt/novell/zenworks/content-repo` is the mount point.

If you only need to store the data from part of your content repository on another share, you can also do that. For example, if you need to store your ZENworks image files on another share, you can use the following command:

```
mount -t cifs -o username=username //example.machine.com/share_name /var/opt/novell/zenworks/content-repo/images
```

Or, to store bundle and policy content on another share, you can use the following command:

```
mount -t cifs -o username=username //example.machine.com/share_name /var/opt/novell/zenworks/content-repo/content
```

Start all ZENworks Services after the share is mounted.

Unmounting a Share

The mount that you created in [“Mounting a Share” on page 200](#) is temporary; the share is unmounted when the operating system is shut down or rebooted. You can also use the following command to manually unmount the share:

```
umount /var/opt/novell/zenworks/content-repo
```

Stop all ZENworks Services before unmounting the share and start all ZENworks Service after the share is unmounted.

Creating a Permanent Mount

Stop all ZENworks Services before creating a permanent mount and start all ZENworks Service after the permanent mount is created.

To ensure that the mount occurs each time the Linux server starts, you must add the following entry to your `/etc/fstab` configuration file:

```
//example.machine.com/share_name /var/opt/novell/zenworks/content-repo cifs credentials=path_to_credentials_file 0 0
```

The credentials file listed in the command contains a username and password. For more information, see the `mount.cifs(8)` man page. The format of the credentials file is:


```
username=value
```

```
password=value
```

Moving Existing Content to the New Repository

After you change the location of a content repository by mounting a new share, any content in the old location is no longer available. To make it available, you must move it to the new repository. Stop all ZENworks Services before moving existing content to the new repository and start all ZENworks Service after the existing content is moved.

13.1.3 Mounting the Content Repository on a Linux Server to an NSS Volume

You can mount the `content-repo` directory on a Linux server on to an NSS Volume.

Before you begin, ensure that the following prerequisites are met:

- ♦ The NSS volume is set up and mounted in the `/media/nss/NSSVOL/` directory of the server.
- ♦ The Samba service is installed and configured to run as `root` on the server. To verify this, run the following command and ensure that the value in UID column is `root`, especially for the processes with PPID = 1.

```
ps -Alf | grep samba
```

To mount the `content-repo` directory:

- 1 Go to the `/etc/init.d/` directory and stop the `novell-zenserver`, `novell-zenloader`, and `novell-zenmntr` services.

- 2 Run the following command to move the content from the `content-repo` directory to a temporary directory on the disk so that the `content-repo` directory is empty:

```
mv /var/opt/novell/zenworks/content-repo/* another-local-directory-on-device
```

- 3 Go to the `/media/nss/NSSVOL` directory, and create a `zencontent` subdirectory within it.

- 4 Use YaST to add the newly created subdirectory to the list of Samba shares (for example, `zenshare`) on the server.

- 5 Restart the Samba service.

- 6 (Conditional) Run the following command to add a Samba `root` user if the Samba `root` user does not already exist:

```
smbpasswd -a root
```

For security reasons, you must specify a `root` password that is different from the login password.

- 7 (Optional) To test if the newly created share is accessible over the Samba protocol, access the share from a Windows device by providing the Samba `root` user credentials

- 8 Run the following command to mount the `zenshare` share:

```
mount //localhost/zenshare /var/opt/novell/zenworks/content-repo -t cifs -o username=root
```

- 9 Restore the backed-up content to the `/var/opt/novell/zenworks/content-repo` directory. The content is now stored on the NSS volume.

- 10 Go to the `/etc/init.d/` directory and restart the `novell-zenserver`, `novell-zenloader`, and `novell-zenmntr` services.

- 11 (Conditional) To ensure that the share is automatically mounted every time the server reboots, add the following line in the `/etc/fstab` file:

```
//localhost/zenshare /var/opt/novell/zenworks/content-repo cifs
username=root,password=rootpass 0 0
```

13.1.4 Changing the Location of the Temporary Location on a Windows Server

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

When the bundle is created in ZENworks Control Center, the temporary files are stored in the `installation_path\zenworks_home\share\tomcat\temp` location.

If the space on the default temporary location is insufficient, you can specify a different disk drive to be the location of temporary files. In Windows, this is done by “mounting” the drive. Mounting is simply pointing an existing path to a hard drive partition without the use of mapped drive letters.

In the following steps, you mount the default temporary location to a disk drive partition, which becomes the new temporary location:

- 1 Make sure that the disk drive you want to use is attached to the server and is properly formatted as NTFS.

This disk drive can be an existing or new one for the machine. The hardware must be recognized by the server. However, do not specify a drive letter if you are adding a new disk drive to the machine. Windows does not allow mounting to a drive letter.

- 2 Stop all ZENworks Services.
- 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 in the right pane.

- 5 (Conditional) If a driver letter is associated with the partition that you want to use as the new content repository location, do the following:

- 5a In the Computer Management dialog box, right-click the drive’s partition.

- 5b Select *Change Drive Letter and Paths*.

- 5c Select the drive letter.

- 5d Click *Remove*, then select *Yes* to confirm.

- 6 Right-click the partition of the disk drive that you want to use as your temporary location, then select *Change Driver Letter and Paths*.

This is the disk drive that you will mount to the `temporary location` directory in [Step 9](#).

- 7 Click *Add*.

This displays the Add Drive Letter or Path dialog box.

- 8 Select *Mount in the Following Empty NTFS Folder*, browse for and select the default `temporary location` directory, then click *Next*.

The default directory is `installation_path\zenworks_home\share\tomcat\temp`.

This mounts the default path to the hard drive partition that you selected in [Step 7](#).

If necessary, format the drive as NTFS using the Computer Management feature in Windows.

- 9 Click the buttons as necessary to exit and save the configuration change.
- 10 Start all ZENworks Services.

From this point on, all ZENworks 11 data is written directly to the new temporary location on the selected hard drive partition.

13.1.5 Changing the Location of the Temporary Location on a Linux Server

You can store your data on a local mount or on a network share such as NFS, SMB, or CIFS and mount the share in your `temporary` directory to access your data.

You can also create a symbolic link on your local hard drive if you want to store your data elsewhere on your local device. However, the existing temporary location directory must be deleted.

- 1 Run the following command to create the symbolic link to the new directory where you want to store the data:

```
ln -s another-temporary-directory-on-device /var/temp/
```

See the `ln(1)` man page for more information about how to symbolically link directories.

- 2 ZENworks requires that the ZENworks user has complete ownership rights on the directory to which you have created the symbolic link. Run the following command to make the ZENworks user the owner of this directory:

```
chown zenworks:zenworks -R /var/temp/
```

See the `chown(1)` man page for more information about how to change ownership of directories.

The following sections provide information on managing content repository locations on Linux.

- ♦ [“Mounting a Share” on page 203](#)
- ♦ [“Unmounting a Share” on page 203](#)
- ♦ [“Creating a Permanent Mount” on page 204](#)

Mounting a Share

After configuring a share on a remote machine, you can mount it from `/var/temp/`. Stop all ZENworks Services before mounting the share

Use the following command to mount the share:

```
mount -t cifs -o username=username //example.machine.com/share_name /var/temp/
```

In the command, `//example.machine.com/share-name` is the share to mount and `/var/temp/` is the mount point.

Start all ZENworks Services after the share is mounted.

Unmounting a Share

The mount that you created in [“Mounting a Share” on page 200](#) is temporary; the share is unmounted when the operating system is shut down or rebooted. You can also use the following command to manually unmount the share:

```
umount /var/temp/
```

Stop all ZENworks Services before unmounting the share and start all ZENworks Service after the share is unmounted.

Creating a Permanent Mount

Stop all ZENworks Services before creating a permanent mount and start all ZENworks Service after the permanent mount is created.

To ensure that the mount occurs each time the Linux server starts, you must add the following entry to your `/etc/fstab` configuration file:

```
//example.machine.com/share_name /var/temp/ cifs  
credentials=path_to_credentials_file 0 0
```

The credentials file listed in the command contains a username and password. For more information, see the `mount.cifs(8)` man page. The format of the credentials file is:

```
username=value
```

```
password=value
```

13.2 Content Replication

When you add a bundle or policy that contains files, the files are uploaded to the content repository on the ZENworks Server. In addition, the ZENworks database is updated to reflect the addition of the bundle or policy and its content.

ZENworks Servers and Satellite devices, collectively referred to as content servers, periodically read the ZENworks database to discover new bundles and policies. Each content server that does not have the bundle or policy content retrieves it from the content server where it resides.

There are a variety of settings you can use to control how content is replicated among content servers in your zone.

Content Replication settings can be inherited from the following locations:

- ♦ **(System):** The bundle is inheriting the setting established for the Management Zone (*Configuration* tab > *Management Zone Settings* > *Content* > *Content Replication*).
- ♦ **Folder:** The bundle is inheriting the setting established for one of its parent folders.
- ♦ **Bundle:** The bundle is not inheriting the setting, but the setting is configured directly on the bundle.
- ♦ **---**: The bundle is not inheriting the setting and the setting is not configured directly on the bundle. In other words, the setting is not configured at the system level, the folder level, or the bundle level.

If the settings are configured at the system or folder level, click *Override settings* to enable you to configure the setting at the bundle or policy level.

If you are configuring settings on a bundle folder or policy folder, you can click *Force Inheritance* in the *Folder Task* list in the left navigation pane to ensure that all children (all subfolders as well as individual bundles and policies) inherit the settings.

Content replication settings let you:

- ♦ Specify whether content is replicated to new content servers by default.

- ♦ Manually include content on or exclude content from content servers.
- ♦ Schedule how often replication occurs.
- ♦ Set a limit, or throttle, on the maximum amount of content that is replicated per second from one content server to another.
- ♦ Specify whether you want the ZENworks Agent on managed devices or Satellite devices to use checksum comparison to help ensure that no errors were introduced during content replication and that the content was not altered.

For information about performing these tasks, see the following sections:

- ♦ [Section 13.2.1, “Configuring Content Replication at the Management Zone Level,” on page 205](#)
- ♦ [Section 13.2.2, “Replicating Content to New Content Servers,” on page 206](#)
- ♦ [Section 13.2.3, “Manually Replicating Content from a Primary Server to Satellite Devices,” on page 207](#)
- ♦ [Section 13.2.4, “Including or Excluding Content,” on page 207](#)

13.2.1 Configuring Content Replication at the Management Zone Level

- 1 In ZENworks Control Center, click the *Configuration* tab.
- 2 In the Management Zone Settings panel, click *Content > Content Replication*.
- 3 Fill in the fields:

Primary Server Recurring Content Replication Schedule: Use the *Days*, *Hours*, and *Minutes* fields to set the schedule.

You can use any combination of the fields. For example, to specify every 30 hours, you can enter 30 hours or 1 day, 6 hours.

NOTE:

- ♦ We recommend you to set the schedule to 12 hours.
- ♦ If a Satellite device is at the end of a very slow link (for example, a 128K WAN), you might want to disable the content replication schedule so that content can be manually replicated by using the `zac wake-cdp (cdp)` command. For more information about the `zac wake-cdp` command, see [“Content Distribution Commands in the ZENworks 11 Command Line Utilities Reference”](#).

To disable the content replication schedule on a Satellite device set the Schedule Type to No Schedule. For more information on setting the schedule type, see [Section 10.2.3, “Content Role,” on page 155](#).

Primary Server Output Throttling in KB/Sec: Select the throttling rate you want to use.

This rate applies to all ZENworks Servers in your zone. You cannot set individual throttling rates.

The content replication throttling rate determines the maximum amount of content (in kilobytes per second) that a ZENworks Server transfers when replicating content to other content servers or when distributing content to managed devices.

By default, no throttling rate is imposed, which means that a ZENworks Server uses all available bandwidth.

Agent Content Checksum: Specify whether the ZENworks Agent on managed devices computes the checksum of downloaded content and compares that checksum to the stored checksum for that content on the ZENworks Primary Server.

Comparing checksums helps to ensure that no errors were introduced during the downloading of the content and that the content was not altered.

Under normal conditions, you should use the default of *On*. If your ZENworks System has serious performance issues, you can set this setting to *Off* to increase performance.

Satellite Content Checksum: Specify whether the ZENworks Agent on Satellite devices computes the checksum of downloaded content and compares that checksum to the stored checksum for that content on the ZENworks Primary Server.

Comparing checksums helps to ensure that no errors were introduced during content replication and that the content was not altered.

Under normal conditions, you should use the default of *On*. If your ZENworks System has serious performance issues, you can set this setting to *Off* to increase performance.

- 4 Click *Apply* or *OK* to save the changes.

Manually Configuring the Web Service Timeout Advanced Content Replication Setting

You can adjust the Web Service Timeout value to suit your needs. For example, if a Satellite device is across a slow WAN link and there is missing content, the default 240-second timeout value might not be long enough to make the Web service call.

To modify the Web Service Timeout on a Satellite device:

For Windows, create the following string value in the registry on the Satellite device:

`HKEY-LOCAL-MACHINE\SOFTWARE\Novell\Zenworks\CDPWebCallWaitTimeout` and set the value to the desired number of milliseconds.

For Linux, in the `/etc/opt/novell/zenworks/conf/xplatzmd.properties` file on the Satellite device, add the following line:

```
CDPWebCallWaitTimeout=xxx
```

where *xxx* is the desired timeout value in milliseconds.

13.2.2 Replicating Content to New Content Servers

By default, when a new ZENworks server is added to the zone, all bundle and policy content is replicated to that ZENworks server. You can, however, choose not to replicate a specific bundle or content policy. If a new content Satellite Server is added to the zone, no content is replicated on the satellite server, unless specified.

For example, assume that you have a bundle for Microsoft Office. You've included it on specific content servers and don't want it replicated to additional servers. To keep this from happening, you modify the Microsoft Office bundle's replication settings to exclude replication to new content servers.

- 1 In ZENworks Control Center, go to the details page for the object (bundle, policy, or folder) whose replication setting you want to modify, then click the *Settings* tab.
- 2 To configure the settings on a bundle, click *Bundle Management*, then click *Primary Server Replication* or *Satellite Server Replication*.

or

To configure the settings on a policy, click *Policy Management*, then click *Primary Server Replication* or *Satellite Server Replication*.

or

To configure the settings on a bundle or policy folder, click *Content*, then click *Primary Server Replication* or *Satellite Server Replication*.

- 3 In the Primary Server Replication Status section, click the appropriate buttons to include or exclude new Primary Servers from hosting the content.
- 4 In the Satellite Server Replication Status section, click the appropriate buttons to include or exclude new Satellite Servers from hosting the content.
- 5 (Optional) If you are configuring settings on a bundle folder or policy folder, click *Force Inheritance* in the *Folder Task* list in the left navigation pane to ensure that all children (all subfolders as well as individual bundles and policies) inherit the settings. Be aware that settings configured on children are lost and that this action cannot be undone.
- 6 Click *OK* to save the changes.

13.2.3 Manually Replicating Content from a Primary Server to Satellite Devices

You can export content from a ZENworks Primary Server's content repository and then manually import that content into a Satellite device's content repository. This process is sometimes called offline content replication.

For more information about exporting content from the content repository, see the `zman satellite-server-export-content (ssec)` command under "[Satellite Commands](#)" in the [ZENworks 11 Command Line Utilities Reference](#). After you export the content, you can copy it to a network drive or to a storage device and then manually import the content into the Satellite device's content repository.

For more information about importing the content into a Satellite device's content repository, see the `zac cdp-import-content (cic)` command under "[Content Distribution Commands](#)" in the [ZENworks 11 Command Line Utilities Reference](#).

You cannot manually export content from one ZENworks Primary Server and then import that content into another Primary Server.

13.2.4 Including or Excluding Content

The default replication setting determines whether content is automatically replicated to new content servers (see [Section 13.2.2, "Replicating Content to New Content Servers," on page 206](#)). You configure the setting for each bundle, policy, or folder. If you choose to include a bundle's or policy's content on new content servers, it is replicated to all new servers; likewise, if you choose to exclude the content, it is not replicated to any new servers.

In some cases, the default replication settings might not give you the desired replication scope for your content, or the scope might change. If this occurs, you can manually include content on or exclude it from specific content servers. There are three ways to do this:

- ♦ "[Managing a Single Piece of Content on Multiple Content Servers](#)" on page 208
- ♦ "[Managing Content on the Folder Level](#)" on page 208
- ♦ "[Managing Multiple Pieces of Content on a Single Content Server](#)" on page 209
- ♦ "[Managing Multiple Pieces of Content on Multiple Content Servers](#)" on page 209

Managing a Single Piece of Content on Multiple Content Servers

This section provides instructions for managing the replication of a single bundle's or policy's content to multiple content servers.

- 1 In ZENworks Control Center, go to the details page for the bundle or policy whose content replication you want to manage.
- 2 Click the *Settings* tab, click *Bundle Management* or *Policy Management*, then click *Primary Server Replication* or *Satellite Server Replication*.

The *Primary Server Replication Status* panel and the *Satellite Server Replication Status* panel display all content servers in the zone. If the bundle or policy content is included on a content server, the *Included* column displays a ✓ icon.

- 3 To change the replication status for a content server, select the check box next to the server, then click *Include* to include the content on the server, or click *Exclude* to exclude the content from the server.

As you include or exclude content servers, be aware of the following replication rules:

- ◆ If a ZENworks Server is the parent server for one or more Satellite devices, you can't exclude the content from the ZENworks Server without first excluding it from the Satellite devices.
- ◆ If you have only one ZENworks Server in your Management Zone, you can't exclude the content from it.
- ◆ You can't include a Satellite devices without first including the Satellite devices's parent ZENworks Server.

- 4 Click *Apply*, then click *OK*.

Managing Content on the Folder Level

This section provides instructions for managing the replication of the content in a bundle or policy folder.

- 1 In ZENworks Control Center, go to the details page for the bundle or policy folder whose content replication you want to manage.
- 2 Click the *Settings* tab, then click *Content*.
- 3 Click *Primary Server Replication* or *Satellite Server Replication*.

The *Primary Server Replication Status* panel and the *Satellite Server Replication Status* panel display all content servers in the zone. If the bundle or policy content is included on a content server, the *Included* column displays a ✓ icon.

- 4 To change the replication status for a content server, select the check box next to the server, then click *Include* to include the content on the server, or click *Exclude* to exclude the content from the server.

As you include or exclude content servers, be aware of the following replication rules:

- ◆ If a ZENworks Server is the parent server for one or more Satellite devices, you can't exclude the content from the ZENworks Server without first excluding it from the Satellite devices.
- ◆ If you have only one ZENworks Server in your Management Zone, you can't exclude the content from it.
- ◆ You can't include a Satellite devices without first including the Satellite devices's parent ZENworks Server.

- 5 (Optional) Click *Force Inheritance* in the *Folder Task* list in the left navigation pane to ensure that all children (all subfolders as well as individual bundles and policies) inherit the settings.
- 6 Click *Apply*, then click *OK*.

Managing Multiple Pieces of Content on a Single Content Server

This section provides instructions for managing the replication of the content for multiple bundles or policies to a single content servers.

- 1 In ZENworks Control Center, go to the details page for the content server whose content replication you want to manage.
- 2 Click the *Content* tab.
The Replication Settings panel displays all bundles and policies in the zone. If the bundle or policy content is included on the content server, the *Included* column displays a ✓ icon.
- 3 To change the replication status for a bundle or policy, select the check box next to the bundle or policy, then click *Include* to include its content on the server, or click *Exclude* to exclude its content from the server.

As you include or exclude content from the server, be aware of the following replication rules:

- ♦ If a ZENworks Server is the parent server for one or more Satellite devices, you can't exclude the content from the ZENworks Server without first excluding it from the Satellite devices.
 - ♦ If you have only one ZENworks Server in your Management Zone, you can't exclude the content from it.
 - ♦ You can't include a Satellite devices without first including the Satellite devices's parent ZENworks Server.
- 4 Click *Apply*, then click *OK*.

Managing Multiple Pieces of Content on Multiple Content Servers

You can use the Specify Content Wizard to include multiple pieces of content on multiple content servers. For example, you might have four bundles that you want included on two of your four content servers. Rather than managing the replication for the individual bundles (see [“Managing a Single Piece of Content on Multiple Content Servers” on page 208](#)) or the individual content servers (see [“Managing Multiple Pieces of Content on a Single Content Server” on page 209](#)), you can use the wizard to manage the replication for all four bundles and content servers at one time.

- 1 In ZENworks Control Center, click the *Devices* tab, then click the *Servers* folder to open it.
- 2 Select one or more servers on which you want to manage the content.
- 3 Click Action > *Specify Content*.
or
In the *Server Tasks* list in the left navigation pane, click *Specify Content* to launch the wizard.
- 4 On the Select Content to Update page, select the content and move it from the Available Content list to the Selected Content list.
- 5 Click *Finish*.

You can also launch the Specify Content Wizard from the following location: *Configuration page*> *Server Hierarchy* panel.

If you need more information about a wizard page, click the *Help* button.

13.3 Content Delivery

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

There are a variety of settings you can use to determine how content is delivered to managed devices, such as setting up Closest Server rules, setting delivery blackout dates for when content can't be downloaded, and setting how often you want managed devices to look for new content to download.

For information about performing these tasks, see the following sections:

- ◆ [Section 13.3.1, "Setting Up Location Closest Server Rules," on page 210](#)
- ◆ [Section 13.3.2, "Scheduling Delivery Blackout Dates," on page 210](#)
- ◆ [Section 13.3.3, "Setting the Device Refresh Schedule," on page 211](#)

13.3.1 Setting Up Location Closest Server Rules

When you have multiple content servers, you can use the Closest Server rules to determine which content server a managed device uses to download content. The Location Closest Server rules let you map devices to content servers based on many network parameters (DNS names, IP addresses, Gateways etc).

For more information, see [Section 12.5, "Adding Closest Servers to Locations," on page 181](#).

13.3.2 Scheduling Delivery Blackout Dates

If there are times when you don't want managed devices to download content, you can create a content blackout schedule. Schedules can be defined at the following levels:

- ◆ **Management Zone:** The schedule is inherited by all devices.
- ◆ **Device Folder:** The schedule is inherited by all devices within the folder and its subfolders. It overrides the Management Zone blackout schedule.
- ◆ **Device:** The schedule applies only to the device for which it is defined. It overrides any schedules set at the Management Zone and folder levels.

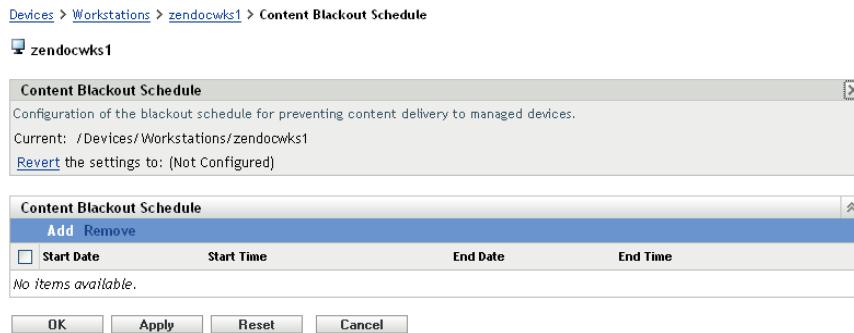
A blackout schedule can include one or more time periods.

NOTE: The Content Blackout Schedule setting lets you prevent managed devices from downloading content from a content source during the blackout period. This setting, however, does not affect content replication. For this reason, a Satellite device with the Content role can still replicate content from its parent primary server during the blackout period.

To create a content blackout schedule:

- 1 Launch ZENworks Control Center.
- 2 Do one of the following:
 - ◆ To create a content blackout schedule for your Management Zone, click the *Configuration* tab, then click *Content* (in the Management Zone Settings panel) > *Content Blackout Schedule*.

- ◆ To create a content blackout schedule for a device folder, open the folder's details page, then click *Settings > Content* (in the Settings panel) > *Content Blackout Schedule*.
- ◆ To create a content blackout schedule for a device, open the device's details page, click *Settings > Content* (in the Settings panel) > *Content Blackout Schedule*.



- 3 If you are creating content blackout schedules for a device or device folder, click *Override settings* to activate the Content Blackout Schedule panel.
- 4 Click *Add* to display the Specify Blackout Time Period dialog box, then fill in the following fields:
 - Start Date:** Select the first date you want to include in the schedule.
 - End Date:** Select the last date you want to include in the schedule. The blackout time period (specified by the start and end times) occurs on each day from the start date to the end date.
 - Start Time:** Select the hour you want the blackout time period to start each day.
 - End Time:** Select the hour you want the blackout time period to end each day. If you want the blackout time period to extend for 24 hours, select the same time as the start time.
- 5 Click *OK* to save the blackout period.
- 6 Repeat [Step 4](#) to create additional blackout periods.
- 7 When you are finished, click *OK* or *Apply* to save the schedule.

13.3.3 Setting the Device Refresh Schedule

At device startup, the ZENworks Adaptive Agent on a device contacts a ZENworks Server to refresh its information. If information changes after startup, the Adaptive Agent must refresh its information again before the changes can show up on the device.

If the refreshed information indicates that there is new content to be downloaded, the Adaptive Agent contacts its content server and begins the download process.

You can use the device refresh schedule to determine how often a device contacts a ZENworks Server to update bundle, policy, configuration, and registration information. Schedules can be defined at the following levels:

- ◆ **Management Zone:** The schedule is inherited by all devices.
- ◆ **Device Folder:** The schedule is inherited by all devices within the folder and its subfolders. It overrides the Management Zone schedule.
- ◆ **Device:** The schedule applies only to the device for which it is defined. It overrides any schedules set at the Management Zone and folder levels.

To create a device refresh schedule:

- 1 Launch ZENworks Control Center.
- 2 Do one of the following:
 - ◆ To create a device refresh schedule for your Management Zone, click the *Configuration* tab, then click *Device Management* (in the Management Zone Settings panel) > *Device Refresh Schedule*.
 - ◆ To create a device refresh schedule for a device folder, open the folder's details page, then click *Settings* > *Device Management* (in the Settings panel) > *Device Refresh Schedule*.
 - ◆ To create a device refresh schedule for a device, open the device's details page, then click *Settings* > *Content* (in the Settings panel) > *Device Refresh Schedule*.

Devices > Workstations > zendocwks1 > Device Refresh Schedule

zendocwks1

Device Refresh Schedule

Configure the refresh interval for this device.
Current: /Devices/Workstations/zendocwks1
[Revert](#) the settings to: (System)

Device Refresh Schedule

Manual Refresh
Device won't get refreshed until the user manually does so

Timed Refresh

Full Refresh Schedule
Refresh everything: Policies, Bundles, Settings, Registration, etc.

0 Days 12 Hours 0 Minutes

Random Time to Wait
Minimum: 300 Seconds Maximum: 360 Seconds

Partial Refresh Schedule
Only perform Policies, Settings, and Registration refresh

0 Days 2 Hours 0 Minutes

OK Apply Reset Cancel

- 3 If you are creating a device refresh schedule for a device or device folder, click *Override settings* to activate the Device Refresh Schedule panel, then choose from the following schedules:

Manual Refresh: If you want a device refreshed only when its user manually initiates the refresh, select *Manual Refresh*, then click *Apply*. Users can initiate a refresh by clicking the ZENworks icon located in the desktop's notification area (system tray).

Timed Refresh: Select *Timed Refresh* if you want to establish a refresh schedule. You can use a Full Refresh Schedule or a Partial Refresh Schedule:

- ◆ **Full Refresh Schedule:** Defines how often you want a device to update all of its information from the ZENworks Server, including bundle, policy, setting, and registration information. Use the following fields to create the full refresh schedule:
 - ◆ **Days, Hours, Minutes:** Specifies the amount of time between refreshes. For example, to set a refresh interval of 8.5 hours, you would specify 0 Days, 8 Hours, 30 Minutes. The default is 12 hours.
 - ◆ **Random Time to Wait:** Select this option to ensure that multiple devices with the same refresh schedule do not all initiate their refresh at the same time. For example, if you have 1000 devices with the same refresh schedule, you might overburden your

ZENworks Server. By selecting this option, the device waits a randomly generated amount of time before initiating its refresh. Use the *Minimum* and *Maximum* fields to specify the range (in seconds) for the randomly generated time.

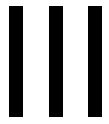
- ◆ **Partial Refresh Schedule:** Defines how often you want a device to update its policy, configuration setting, and registration information from the ZENworks Server. Bundle information is not updated.

In the *Days*, *Hours*, and *Minutes* fields, specify the amount of time between refreshes. For example, to set a refresh interval of 3 hours, you would specify 0 Days, 3 Hours, 0 Minutes. The default is 2 hours.

The *Timed Refresh* setting is applicable to both the full and partial refreshes.

The refresh interval is not reset until the device refresh is complete. For example, assume you set a refresh interval of 8 hours. The device's first refresh occurs at 6:00 p.m. and takes 13 seconds to complete. The second refresh occurs at 2:00:13 a.m. (8 hours after the refresh was completed at 6:00:13). If the second refresh takes 15 seconds to complete, the third refresh occurs at 10:00:28 a.m.

- 4 When you are finished, click *OK* or *Apply* to save the schedule.



ZENworks System Updates

The System Updates feature allows you to obtain updates to the Novell ZENworks 11 software on a timely basis, and also allows you to schedule automatic downloads of the updates.

- ◆ [Chapter 14, “Configuring Updates,” on page 217](#)
- ◆ [Chapter 15, “Managing Update Downloads,” on page 233](#)
- ◆ [Chapter 16, “Deploying Updates,” on page 239](#)
- ◆ [Chapter 17, “Deleting Updates,” on page 253](#)
- ◆ [Chapter 18, “Reviewing the Content of an Update,” on page 255](#)
- ◆ [Chapter 19, “Update Statuses,” on page 259](#)
- ◆ [Chapter 20, “Configuring the System Update Behavior of the ZENworks Adaptive Agent,” on page 261](#)

14 Configuring Updates

Perform the following tasks to configure your update process:

- ◆ Section 14.1, “Configuring System Update Settings,” on page 217
- ◆ Section 14.2, “Creating Deployment Stages,” on page 225

14.1 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:

- ◆ Section 14.1.1, “System Update Entitlement,” on page 217
- ◆ Section 14.1.2, “Check for Updates Schedule,” on page 218
- ◆ Section 14.1.3, “Download Schedule,” on page 219
- ◆ Section 14.1.4, “E-Mail Notification,” on page 220
- ◆ Section 14.1.5, “Proxy Server Settings,” on page 221
- ◆ Section 14.1.6, “Dedicated Server Settings,” on page 222
- ◆ Section 14.1.7, “Stage Timeout Settings,” on page 223
- ◆ Section 14.1.8, “Reboot Behavior,” on page 224

14.1.1 System Update Entitlement

In ZENworks 11 or later, you need to activate the System Update entitlement to obtain updates to the ZENworks 11 software on a timely basis. Before activating the entitlement, ensure that the Primary Server you want to use to activate the entitlement can communicate with the **NCC server** (<https://secure-www.novell.com>).

The System Update Entitlement panel displays the System Update entitlement status and allows you to activate the System Update entitlement for the ZENworks 11 software in the Management Zone to receive the latest version of ZENworks System Updates and Product Recognition Updates (PRUs) from the Novell Customer Center (NCC) server.

To activate the entitlement:

- 1 In ZCC, click *Configuration*, in the left pane.
- 2 In the *Configuration* page, click *Infrastructure Management > System Update Settings*.
- 3 Configure the following settings:
 - ◆ **Email Address:** Specify a valid e-mail address to be used for communication from Novell. We recommended that you specify the e-mail address used to purchase the System Update Maintenance Entitlement.
 - ◆ **Activation Code:** Specify the System Update entitlement activation code. For more information on how to locate your System Update entitlement activation code, see **TID 7007955** (<http://www.novell.com/support/>).

To purchase the System Update Maintenance Entitlement, contact an authorized Novell Sales representative or a Certified Novell Partner.

4 Click *Activate*.

The specified information is validated with the NCC server, and subsequently the entitlement is created for the Management Zone in the NCC server.

14.1.2 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 219](#)).

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 235](#).

- 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.

14.1.3 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 218).

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 15.2, “Downloading Updates,”](#) on page 234.

- 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*.
- 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.

14.1.4 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.
 - 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.

14.1.5 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.

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.

14.1.6 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 222](#)
- ◆ [“Clearing a Dedicated Update Server” on page 223](#)

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.

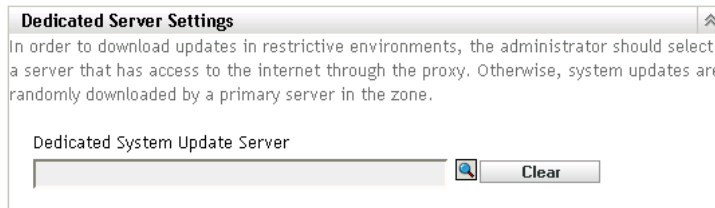
5 Either click *OK* to close the page, or continue with [another configuration task](#).

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*.

14.1.7 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 228](#).

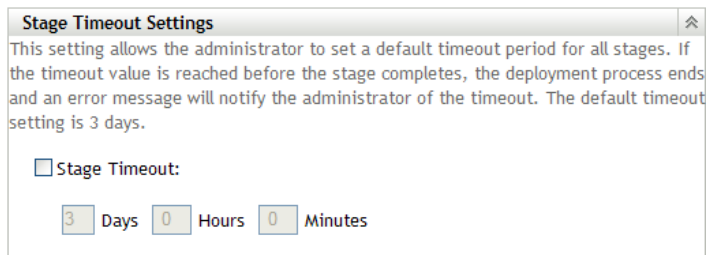
Set this value to be long enough to accommodate updating all of the devices you plan to update.

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.



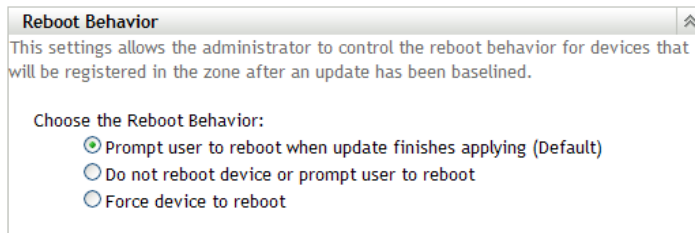
- 3 Select the *Stage Timeout* check box, then specify the days, hours, and minutes desired.
- 4 Click *Apply* to make the changes effective.
- 5 Either click *OK* to close the page, or continue with [another configuration task](#).
If you did not click *Apply* to make your changes effective, clicking *OK* does so. Clicking *Cancel* also closes the page, but loses your unapplied changes.

14.1.8 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:



- 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.

14.2 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:

- ◆ [Section 14.2.1, “Understanding Stages,” on page 225](#)
- ◆ [Section 14.2.2, “Creating and Populating a Deployment Stage,” on page 227](#)
- ◆ [Section 14.2.3, “Modifying the Stage Timeout,” on page 228](#)
- ◆ [Section 14.2.4, “Modifying Staging Behavior,” on page 229](#)
- ◆ [Section 14.2.5, “Modifying Reboot Behavior,” on page 230](#)
- ◆ [Section 14.2.6, “Modifying the Membership of a Deployment Stage,” on page 230](#)
- ◆ [Section 14.2.7, “Renaming a Deployment Stage,” on page 231](#)
- ◆ [Section 14.2.8, “Deleting a Deployment Stage,” on page 232](#)
- ◆ [Section 14.2.9, “Rearranging the Order in Which Stages Start,” on page 232](#)

14.2.1 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 14-1 *The Deployment Stages Panel*

Ordinal	Stage Name	Stage Members	Staging Behavior	Reboot Behavior	Stage Timeout
1	Deployment Stage: Test	View/Modify Members	Advance Through Stage Automatically	Prompt User	3 days 0 hours 0 minutes
2	Deployment Stage: Production	View/Modify Members	Advance Through Stage Automatically	Prompt User	3 days 0 hours 0 minutes

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 14-1 *Deployment Stages column descriptions.*

Column Heading	Explanation
<i>Ordinal</i>	<p>Displays the order in which the stages run. You can rearrange the staging order by using the <i>Move Up</i> and <i>Move Down</i> options. For more information, see “Rearranging the Order in Which Stages Start” on page 232.</p> <p>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.</p>
<i>Stage Name</i>	<p>Name of the stage, which you specify when creating the stage by using the <i>Action > Add Stage</i> option.</p> <p>Make this name descriptive enough to indicate its purpose.</p>
<i>Stage Members</i>	<p>This column contains the <i>View/Modify Members</i> 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.</p> <p>Stage membership can include individual devices and groups that contain devices.</p> <p>For more information, see “Modifying the Membership of a Deployment Stage” on page 230.</p>
<i>Staging Behavior</i>	<p>Displays the current behavior for each stage, which you can change by using the <i>Action > Modify Staging Behavior</i> option. For more information, see “Modifying Staging Behavior” on page 229.</p>

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 230](#).

Stage Timeout Displays the stage timeout, 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 223](#). 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 228](#).

14.2.2 Creating and Populating a Deployment Stage

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

Action	Rename	Delete	Move Up	Move Down		
<input type="checkbox"/>	Ordinal	Stage Name	Stage Members	Staging Behavior	Reboot Behavior	Stage Timeout
<input type="checkbox"/>	1	Deployment Stage: Test	View/Modify Members	Advance Through Stage Automatically	Prompt User	3 days 0 hours 0 minutes
<input type="checkbox"/>	2	Deployment Stage: Production	View/Modify Members	Advance Through Stage Automatically	Prompt User	3 days 0 hours 0 minutes

- 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.

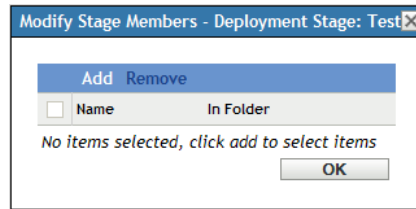
You might want to include something like “Deployment Stage” at the beginning of the name to sort the groups in the devices listing in ZENworks Control Center.

For information about naming in ZENworks Control Center, see [Section 1.8, “Naming Conventions in ZENworks Control Center,” on page 28](#).

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.

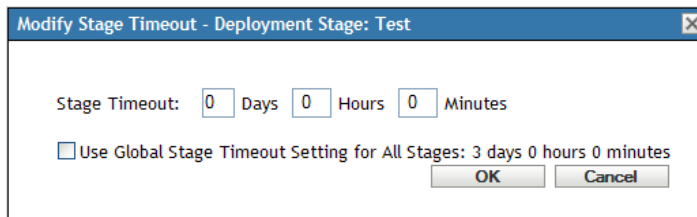
14.2.3 Modifying the Stage Timeout

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 223](#).

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).

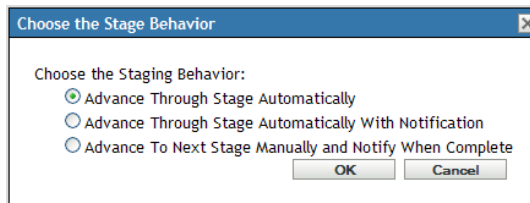
For more information, see “[Stage Timeout Settings](#)” on page 223.

5 Click *OK*.

14.2.4 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*.

14.2.5 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:

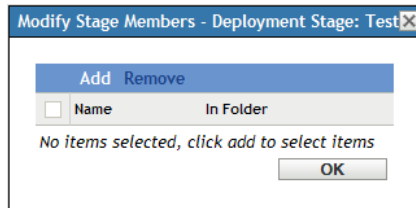
- 1 In ZENworks Control Center, click *Configuration* in the left pane, then click the *System Updates* tab.
- 2 In the Deployment Stages panel, select the check box for one or more the deployment stages, click *Action*, then click *Modify Reboot Behavior*.



- 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*.

14.2.6 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.

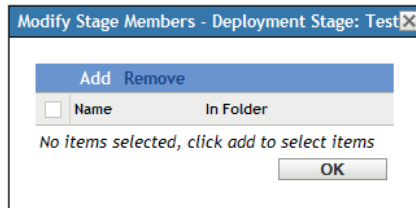
You must update your Primary Servers before updating any of the other managed servers and especially before updating any managed workstations.

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.

14.2.7 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 [Section 1.8, "Naming Conventions in ZENworks Control Center,"](#) on page 28.

14.2.8 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.

14.2.9 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.

15 Managing Update Downloads

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 218.

The following sections contain more information:

- ◆ [Section 15.1, “Understanding Available Updates,”](#) on page 233
- ◆ [Section 15.2, “Downloading Updates,”](#) on page 234
- ◆ [Section 15.3, “Downloading and Installing the PRU,”](#) on page 236
- ◆ [Section 15.4, “Canceling or Deleting a System Update,”](#) on page 236

15.1 Understanding Available Updates

The following figure illustrates the Available System Updates panel:

Figure 15-1 Available System Updates Panel

Action	Update Name	Release Date	Download Date	Applied Date	Status	Importance	Target Type	Auto Refresh
<input type="checkbox"/>	ZCM Update 10.0.5	Mar 7, 2008			Error	Optional	ZENworks Servers	
<input type="checkbox"/>	ZCM Update 10.0.4	Jan 1, 2008			Available	Optional	All Devices	
<input type="checkbox"/>	ZCM Update 10.0.3	Dec 25, 2007			Available	Optional	All Devices	
<input type="checkbox"/>	ZCM Update 10.0.2	Oct 31, 2007			Available	Optional	ZENworks Servers	
<input type="checkbox"/>	ZCM 10.0.2 (SU 1)	Oct 12, 2007			Baselined	Mandatory	ZENworks Servers	

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 15-1 Available System Updates column descriptions.

Column Heading or List	Explanation
<i>Update Name</i>	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 18, “Reviewing the Content of an Update,” on page 255.
<i>Release Date</i>	Displays the date that Novell created the update.
<i>Download Date</i>	Displays the date that you downloaded the update.
<i>Applied Date</i>	Displays the date that you applied the update.

Column Heading or List	Explanation
<i>Status</i>	Displays the current status of the update, which is automatically updated every 15 seconds. For more information on the individual statuses, see Chapter 19, "Update Statuses," on page 259.
<i>Importance</i>	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.
<i>Target Type</i>	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.
<i>Auto Refresh</i>	Click <i>Auto Refresh</i> (the menu item on the right side of the panel, above <i>Target Type</i>), then select one of the following: <ul style="list-style-type: none"> ◆ No Auto Refresh ◆ 15-second Refresh ◆ 30-second Refresh ◆ 60-second Refresh <p>By default the panel view is not automatically refreshed. However, you can manually refresh the view by clicking the <i>System Updates</i> tab.</p>

15.2 Downloading Updates

You can schedule the downloads, or download them manually:

- ◆ [Section 15.2.1, "Scheduling Update Downloads,"](#) on page 234
- ◆ [Section 15.2.2, "Manually Checking for Updates,"](#) on page 235
- ◆ [Section 15.2.3, "Manually Downloading Updates,"](#) on page 235
- ◆ [Section 15.2.4, "Manually Importing Updates to Servers without Internet Connectivity,"](#) on page 235

15.2.1 Scheduling Update Downloads

You can schedule both checking for updates and downloading them:

- ◆ ["Check for Updates Schedule"](#) on page 218
- ◆ ["Download Schedule"](#) on page 219

15.2.2 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.

15.2.3 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 16, "Deploying Updates,"](#) on page 239 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 16, "Deploying Updates,"](#) on page 239.

15.2.4 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 \(http://download.novell.com\)](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 16, "Deploying Updates,"](#) on page 239 to deploy the update to managed devices.

15.3 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.

15.4 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 sudo --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.

16 Deploying Updates

- ◆ [Section 16.1, “Understanding Deploying Updates,” on page 239](#)
- ◆ [Section 16.2, “Deploying Updates,” on page 242](#)
- ◆ [Section 16.3, “Starting a Pending Stage,” on page 247](#)
- ◆ [Section 16.4, “Rescheduling a Deployment,” on page 247](#)
- ◆ [Section 16.5, “Bypassing Staging,” on page 248](#)
- ◆ [Section 16.6, “Canceling a Deployment,” on page 248](#)
- ◆ [Section 16.7, “Clearing an Error to Retry a Deployment,” on page 248](#)
- ◆ [Section 16.8, “System Update Fails on the Device with an Error Code,” on page 248](#)
- ◆ [Section 16.9, “Viewing Status by Device,” on page 249](#)

16.1 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 16-1 Deploying System Updates Panel

Deploying System Updates								
Action ▾								
<input type="checkbox"/>	Update Name	Start Schedule	Reboot Behavior	Stage	Status	Pending	Successful	Failed
<input type="checkbox"/>	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 16-1 Deploying System Updates column descriptions

Column Heading	Explanation
<i>Update Name</i>	<p>Displays the name of the update, which is created by Novell.</p> <p>Click the name to access the Status by Device page. You can also click the underlined number in the <i>Pending</i>, <i>Successful</i>, or <i>Failed</i> columns to view the appropriate Status by Device page, filtered to display devices with that status.</p>
<i>Start Schedule</i>	<p>Displays the current schedule, if any has been set. Use the Reschedule Deployment action to reschedule the update. For more information, see Section 16.4, "Rescheduling a Deployment," on page 247.</p> <p>Each device can have its own schedule.</p>
<i>Reboot Behavior</i>	<p>Displays the reboot behavior of devices after the update is deployed.</p> <p>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.</p> <p>You have the following reboot options:</p> <ul style="list-style-type: none"> ◆ 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
<i>Stage</i>	<p>Indicates the deployment state. The possible entries are:</p> <p>stage_name: The update is being deployed to the managed devices that are members of the current stage that is listed.</p> <p>Selected Devices Stage: The update is being deployed to selected managed devices without the use of stages.</p> <p>All Devices Stage: The update is being deployed to all managed devices in the Management Zone without the use of stages.</p> <p><i>All Devices Stage</i> 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.</p> <p>If stages are being used, click a stage name to view the device status for each stage member. For more information, see Section 16.9, "Viewing Status by Device," on page 249.</p>
<i>Status</i>	<p>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 19, "Update Statuses," on page 259.</p> <p>Click an item in the <i>Status</i> column to view a message explaining the current status.</p> <p>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 16.9, "Viewing Status by Device," on page 249.</p>
<i>Pending</i>	<p>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.</p> <p>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 16.9, "Viewing Status by Device," on page 249.</p>
<i>Successful</i>	<p>Displays the number of devices for which the update deployment process is complete.</p> <p>Click the number to view the Status by Device page, which displays the devices that successfully received the update. For more information, see Section 16.9, "Viewing Status by Device," on page 249.</p>
<i>Failed</i>	<p>Number of devices for which the update deployment process has failed.</p> <p>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 16.9, "Viewing Status by Device," on page 249.</p> <p>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.</p>

16.2 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 11 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 14.2, “Creating Deployment Stages,” on page 225](#).
- 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:

Available System Updates							
Action	Update Name	Release Date	Download Date	Applied Date	Status	Importance	Target Type
<input type="checkbox"/>	ZCM Update 10.0.5	Mar 7, 2008			Available	Optional	ZENworks Servers
<input type="checkbox"/>	ZCM Update 10.0.4	Jan 1, 2008			Available	Optional	All Devices
<input type="checkbox"/>	ZCM Update 10.0.3	Dec 25, 2007			Available	Optional	All Devices
<input type="checkbox"/>	ZCM Update 10.0.2	Oct 31, 2007			Available	Optional	ZENworks Servers
<input type="checkbox"/>	ZCM 10.0.2 (SU 1)	Oct 12, 2007			Baselined	Mandatory	ZENworks Servers
<input type="checkbox"/>	ZCM 10.0.1 (PMR)	Jul 12, 2007			Baselined	Mandatory	ZENworks Servers
<input type="checkbox"/>	Update for ZCM 10.0.8	Apr 8, 2008	Apr 11, 2008		Aborted	Optional	All Devices
<input type="checkbox"/>	Update for ZCM 10.0.7	Apr 7, 2008			Available	Optional	All Devices
<input type="checkbox"/>	Update for ZCM 10.0.6	Apr 7, 2008	Apr 10, 2008	Apr 10, 2008	Baselined	Optional	All Devices
<input type="checkbox"/>	20 content files	Aug 19, 2006	Apr 10, 2008		Downloaded	Optional	All Devices

- 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 18, “Reviewing the Content of an Update,” on page 255](#).

- 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:

Available System Updates							
Action	Update Name	Release Date	Download Date	Applied Date	Status	Importance	Target Type
<input type="checkbox"/>	ZCM Update 10.0.5	Mar 7, 2008			Error	Optional	ZENworks Servers
<input type="checkbox"/>	ZCM Update 10.0.4	Jan 1, 2008			Available	Optional	All Devices
<input type="checkbox"/>	ZCM Update 10.0.3	Dec 25, 2007			Available	Optional	All Devices
<input type="checkbox"/>	ZCM Update 10.0.2	Oct 31, 2007	Apr 12, 2008		In Process	Optional	ZENworks Servers
<input type="checkbox"/>	ZCM 10.0.2 (SU 1)	Oct 12, 2007			Baselined	Mandatory	ZENworks Servers

- 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 18, “Reviewing the Content of an Update,” on page 255](#) 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.

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.

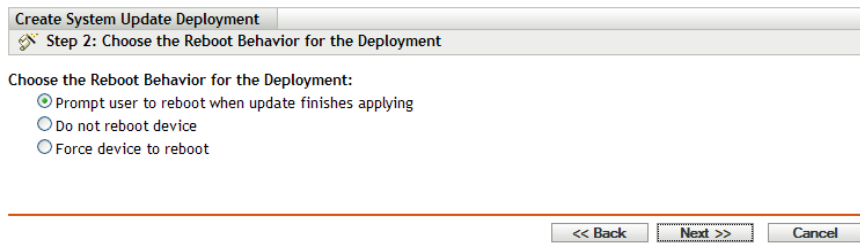
In a production environment, we recommend that you use the *Deploy System Updates to Selected Devices in the Management Zone* option to update the first Primary Server, update the remaining Primary Servers, and then update the managed devices. Or you should use the *Deploy System Updates Using Stages 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 [Step 9e](#). 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 14.2, "Creating Deployment Stages," on page 225](#).

- 9b** Click *Next* to display the following page:



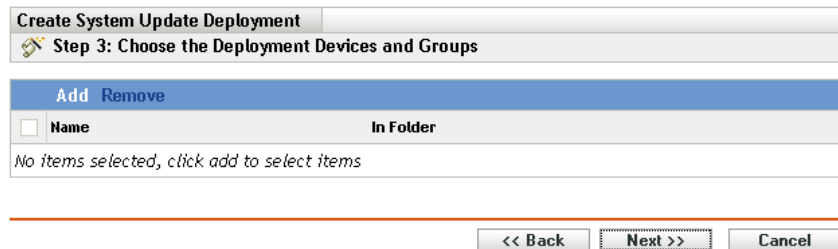
9c Select one of the following options:

- ♦ **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:



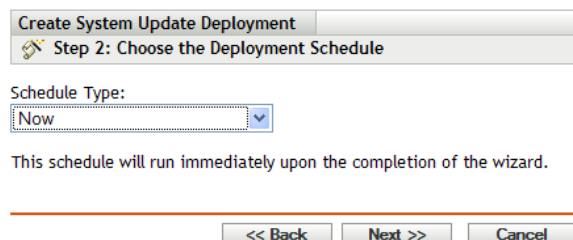
9f To add devices or groups to the deployment configuration, click *Add*, browse for and select the devices or device groups to include in the update deployment, then click *OK*.

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.

- 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.
- 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`
- 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](#).

16.3 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*.

16.4 Rescheduling a Deployment

You cannot reschedule a deployment after it starts:

- [Section 16.4.1, “Rescheduling a Deployment for the All Stages Status,” on page 247](#)
- [Section 16.4.2, “Rescheduling a Deployment for the Other Statuses,” on page 247](#)

16.4.1 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*.

16.4.2 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*.

16.5 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*.

16.6 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.

16.7 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:

- 1 Click *Action > Clear Error and Continue*.

16.8 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.

16.9 Viewing Status by Device

The following sections contain more information:

- ◆ Section 16.9.1, “Understanding Device Statuses,” on page 249
- ◆ Section 16.9.2, “Viewing a Device’s Properties,” on page 250
- ◆ Section 16.9.3, “Viewing Information on a Device’s Status,” on page 250
- ◆ Section 16.9.4, “Toggling Ignored Devices,” on page 251
- ◆ Section 16.9.5, “Redeploying Updates to Devices,” on page 251
- ◆ Section 16.9.6, “Rescheduling Updates to Devices,” on page 252
- ◆ Section 16.9.7, “Refreshing Devices,” on page 252

16.9.1 Understanding Device Statuses

The following graphic illustrates the Deploying System Updates panel on the System Updates page:

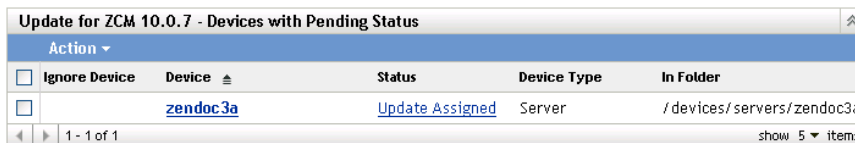
Figure 16-2 Deploying System Updates Panel



Deploying System Updates								
Action ▾								
<input type="checkbox"/>	Update Name	Start Schedule	Reboot Behavior	Stage	Status	Pending	Successful	Failed
<input type="checkbox"/>	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 16-3 Device by Status Page for Devices with Pending Status



Update for ZCM 10.0.7 - Devices with Pending Status					
Action ▾					
<input type="checkbox"/>	Ignore Device	Device ▲	Status	Device Type	In Folder
<input type="checkbox"/>		zendoc3a	Update Assigned	Server	/devices/servers/zendoc3a

1 - 1 of 1 items 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
<i>Device</i>	The device's name. Click it to display the device's properties page in ZENworks Control Center.
<i>Status</i>	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 19, "Update Statuses," on page 259.
<i>Device Type</i>	Whether the device is a server or workstation.
<i>In Folder</i>	Displays the ZENworks Control Center folder where the device's ZENworks object resides.

16.9.2 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:

Update for ZCM 10.0.7 - Devices with Pending Status				
Action	Device	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/ devices/ servers/ zendoc3a

- 3 Click the underlined link in the *Device* column to display the device's properties.

16.9.3 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:

Update for ZCM 10.0.7 - Devices with Pending Status				
Action	Device	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/ devices/ servers/ zendoc3a

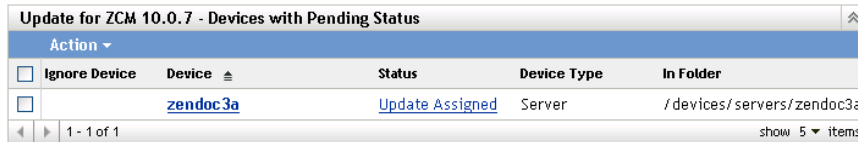
- 3 Click the underlined link in the *Status* column to display status information about the device.

16.9.4 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:



Update for ZCM 10.0.7 - Devices with Pending Status				
Action ▾				
<input type="checkbox"/> Ignore Device	Device	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/devices/servers/zendoc3a

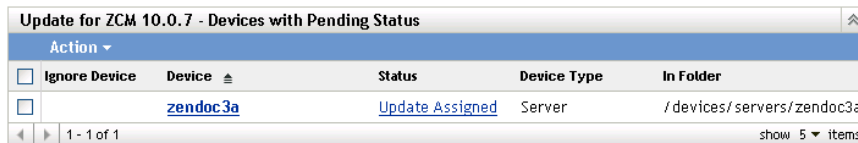
- 3 Click the check box next to one or more devices.
- 4 Click *Action > Toggle Ignored Devices*.

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.

16.9.5 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:



Update for ZCM 10.0.7 - Devices with Pending Status				
Action ▾				
<input type="checkbox"/> Ignore Device	Device	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/devices/servers/zendoc3a

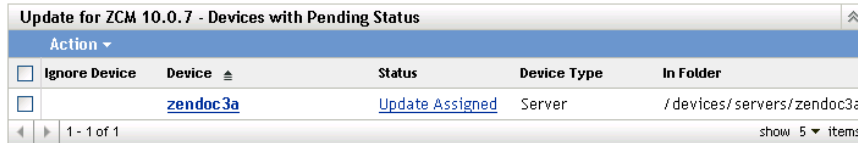
- 3 Select the check box next to one or more devices.
- 4 Click *Action > Redeploy Update to Devices*.

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.

16.9.6 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:



Update for ZCM 10.0.7 - Devices with Pending Status				
Action ▾				
<input type="checkbox"/> Ignore Device	Device <small>↕</small>	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/ devices/ servers/ zendoc3a

- 3 Select the check box next to one or more devices.
- 4 Click *Action > Reschedule Devices*.

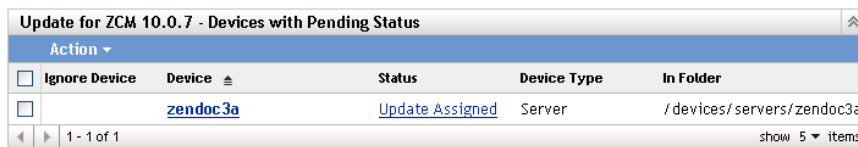
The options available from the *Action* menu vary, depending on whether you are viewing the All Assigned Devices Status panel, the Devices with Pending Status panel, or the Devices with Failed Status panel. If you are viewing the Devices with Success Status panel, no options are available.

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.

16.9.7 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:



Update for ZCM 10.0.7 - Devices with Pending Status				
Action ▾				
<input type="checkbox"/> Ignore Device	Device <small>↕</small>	Status	Device Type	In Folder
<input type="checkbox"/>	zendoc3a	Update Assigned	Server	/ devices/ servers/ zendoc3a

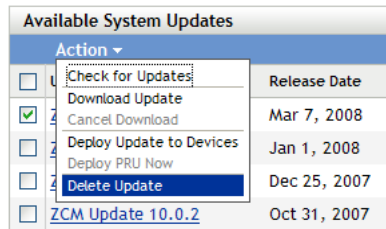
- 3 Select the check box next to one or more devices.
- 4 Click *Action > Refresh Device*.

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.

17 Deleting Updates

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*.



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.

18 Reviewing the Content of an Update

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 18.1, “Viewing the Release Details Page,” on page 255](#)
- ♦ [Section 18.2, “Update Release Details,” on page 255](#)
- ♦ [Section 18.3, “Deployment History,” on page 256](#)

18.1 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:.

18.2 Update Release Details

Table 18-1 Information from the System Update Release Details Panel

Column Heading	Explanation
<i>Update Name</i>	The name of the update, which is created by Novell.
<i>Update GUID</i>	The update's GUID.
<i>Release Date</i>	The date the update was released by Novell.
<i>Download Date</i>	The date you downloaded the content of the update, including all files necessary to install the update.
<i>Priority Level</i>	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.
<i>Description</i>	Brief information about the purpose of the update and its content.
<i>Targets</i>	Indicates whether the target devices are Primary Servers only, all managed devices, or servers with ZENworks roles.
<i>Product Version</i>	The version of ZENworks in this update.

Column Heading	Explanation
<i>Prerequisite Updates</i>	Any updates that are required for this update.
<i>Superseded Updates</i>	Any updates that the current update supersedes.
<i>Update Notes</i>	Brief information about important issues related to the update.
<i>Update Readme</i>	Information pertinent to deploying the update, such as last-minute instructions. Click this entry to open the Readme.
<i>Updated Files</i>	Lists all of the files contained in the update that will be applied to update your ZENworks software.
Content Replication Status	Displays the content replication status of the current update on Primary Servers and Content Satellite Servers. It is advisable to deploy the update to managed devices only after all the servers have 100% replication.

18.3 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 18.3.1, “Understanding Deployment History Details,” on page 256](#)
- ◆ [Section 18.3.2, “Performing Deployment History Tasks,” on page 257](#)

18.3.1 Understanding Deployment History Details

Table 18-2 Columns for the Deployment History Details Panel

Column Heading	Explanation
<i>Stage</i>	<p>Indicates the deployment method used. The possible entries are:</p> <p>stage_name: The update was deployed to the managed devices that are members of the stage that is listed.</p> <p>Selected Devices Stage: The update was deployed to selected managed devices in the Management Zone that are not members of a stage.</p> <p>All Devices Stage: The update was deployed to all managed devices in the Management Zone that are not members of a stage.</p>
<i>Status</i>	<p>Indicates the status of the update that was successfully deployed, such as <i>Applied</i> or <i>Baselined</i>.</p> <p>In Process: The update is currently being deployed to the members of the stage.</p> <p>For more information on the individual statuses, see Chapter 19, “Update Statuses,” on page 259.</p>

Column Heading	Explanation
<i>Pending</i>	<p>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.</p> <p>Click the number to view the Status by Device page, which displays the devices that have the deployment of the update pending.</p>
<i>Successful</i>	<p>Displays the number of devices for which the update deployment process has completed.</p> <p>Click the number to view the Status by Device page, with the devices displayed that successfully received the update.</p>
<i>Failed</i>	<p>Displays the number of devices for which the update deployment process has failed.</p> <p>Click the number to view the Status by Device page, which displays the devices that failed to receive the update.</p> <p>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.</p>

18.3.2 Performing Deployment History Tasks

Table 18-3 Tasks for Evaluating an Update's Deployment History

Task	Steps	Additional Details
View which devices have their deployment pending	<ol style="list-style-type: none"> 1. In the Deployment Stages panel, click the number in the <i>Pending</i> 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	<ol style="list-style-type: none"> 1. In the Deployment Stages panel, click the number in the <i>Successful</i> 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	<ol style="list-style-type: none"> 1. In the Deployment Stages panel, click the number in the <i>Failed</i> column. 2. On the Status by Device page, review the information. 	<p>Displays devices where the update deployment failed.</p> <p>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.</p>

19 Update Statuses

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 16, "Deploying Updates," on page 239](#) 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 16, "Deploying Updates," on page 239](#) 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 16, “Deploying Updates,” on page 239](#) 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.

Superseded: 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.

20 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.

- 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.

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.

Permission Prompt Max Wait Time To prevent the user from continuing to postpone the update without any feedback being given to the ZENworks system, this setting specifies the maximum number of minutes that an update waits for permission before giving up and reporting the update as canceled by the user.

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.

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 is 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*.

IV ZENworks Adaptive Agent

The ZENworks Adaptive Agent is part of the Novell ZENworks 11 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 software, patches, and system updates to devices.
- ♦ Manage policies that determine the behavior of devices.
- ♦ Take inventory of device hardware and software.
- ♦ Access devices from a remote location to troubleshoot and fix problems with hardware and software.
- ♦ Act as a Satellite to help distribute content, image devices, 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.

For information on how to deploy ZENworks Adaptive Agent, see [“ZENworks Adaptive Agent Deployment”](#) in the *ZENworks 11 Discovery, Deployment, and Retirement Reference*

The following sections contain more information:

- ♦ [Chapter 21, “Viewing the Version of the Adaptive Agent Software and Modules on a Device,”](#) on page 265
- ♦ [Chapter 22, “Searching for Devices that Have a Specified Version of the Adaptive Agent,”](#) on page 267
- ♦ [Chapter 23, “Configuring Adaptive Agent Settings after Deployment,”](#) on page 269
- ♦ [Chapter 24, “Configuring ZENworks Explorer,”](#) on page 279
- ♦ [Chapter 25, “Removing the ZENworks Pre-Agent from a Device,”](#) on page 283
- ♦ [Chapter 26, “Configuring the System Update Behavior of the ZENworks Adaptive Agent,”](#) on page 285
- ♦ [Chapter 27, “Customizing the Look and Feel of the ZENworks Icon,”](#) on page 287
- ♦ [Chapter 28, “Troubleshooting the Adaptive Agent,”](#) on page 289

21 Viewing the Version of the Adaptive Agent Software and Modules on a Device

- 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 271](#).

22 Searching for Devices that Have a Specified Version of the Adaptive Agent

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*.

23 Configuring Adaptive Agent Settings after Deployment

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. The User Management feature is only supported on Windows managed devices across all the ZENworks products.

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 23.1, “Configuring Agent Settings on the Management Zone Level,” on page 269](#)
- ♦ [Section 23.2, “Configuring Agent Settings on the Device Folder Level,” on page 270](#)
- ♦ [Section 23.3, “Configuring Agent Settings on the Device Level,” on page 270](#)
- ♦ [Section 23.4, “ZENworks Agent Settings,” on page 271](#)

23.1 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	Locations	Subscriptions
Management Zone Settings							
Content							
Device Management							
Category		Description					
Local Device Logging		Enable and configure local logging of warnings and errors encountered by managed devices.					
Device Refresh and Removal Schedule		Configure the device refresh interval.					
ZENworks Agent		ZENworks Agent Configuration.					
System Update Agent		Configure system update behavior on ZENworks Agents.					
Registration		Configure registration settings.					
ZENworks Explorer Configuration		Configure the behavior of the ZENworks Explorer on managed devices.					
System Variables		Configure system variables.					
Preboot Services		Configure Preboot Services.					
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.					
Power Management Settings		Configure the schedule for the power management of Intel AMT devices.					
Remote Management		Enable and configure remote management.					
Discovery and Deployment							
Event and Messaging							
Infrastructure Management							
Inventory							
Reporting Services							
Endpoint Security Management							
Asset Management							
Patch Management							

- 3 Click *ZENworks Agent*.
- 4 Fill in the fields. For more information, see [Section 23.4, “ZENworks Agent Settings,” on page 271](#).
- 5 Click *OK* to apply the changes.

23.2 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 23.4, “ZENworks Agent Settings,” on page 271](#).
- 6 Click *OK* to apply the changes.

23.3 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 23.4, “ZENworks Agent Settings,” on page 271](#).
- 6 Click *OK* to apply the changes.

23.4 ZENworks Agent Settings

The following sections provide details about the configuration settings available for the ZENworks Adaptive Agent. Each section assumes that you have accessed the settings at the level ([zone](#), [device folder](#), or [device](#)) where you want the settings applied.

- ◆ [Section 23.4.1, “Agent Features,” on page 271](#)
- ◆ [Section 23.4.2, “Agent Preferences,” on page 277](#)

23.4.1 Agent Features

The ZENworks Adaptive Agent uses modules to perform the following functions on managed devices:

- ◆ Asset Management
- ◆ Bundle Management
- ◆ Endpoint Security Management
- ◆ Image Management
- ◆ Patch Management
- ◆ Policy Management
- ◆ Remote 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.

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.

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.

6 (Conditional) If you install the Remote Management or Image Management module on a device, reboot the device for the install to be effective.

To understand the effects of enabling, disabling, or uninstalling the modules, see the following tables:

- ◆ [Table 23-1, "Bundle Management," on page 273](#)
- ◆ [Table 23-2, "Image Management," on page 274](#)
- ◆ [Table 23-3, "Patch Management," on page 275](#)
- ◆ [Table 23-4, "Policy Management," on page 276](#)
- ◆ [Table 23-5, "Remote Management," on page 277](#)

Table 23-1 Bundle Management




Installed and Enabled	Installed and Disabled	Uninstalled	Additional Details
<ul style="list-style-type: none"> ◆ The Bundle Management service is running on the device. ◆ The  icon properties page displays the Bundle Management status as <i>Running</i> 	<ul style="list-style-type: none"> ◆ The Bundle Management service is stopped and disabled on the device. ◆ The  icon properties page displays the Bundle Management status as <i>Disabled</i>. ◆ The Windows bundle, File bundle, or Directive bundle that are assigned to the device are not displayed in the NAL window or in the shortcut locations such as Desktop, Start Menu, Quick Launch, or System Tray of the device. ◆ You cannot execute Windows bundle, File bundle, or Directive bundle related zac commands. ◆ If you disable the Bundle Management module when a bundle is being applied to the device, the module is disabled after the bundle is applied and the device is refreshed. 	<ul style="list-style-type: none"> ◆ The Bundle Management service is uninstalled from the device. ◆ The  icon properties page does not display an entry for the Bundle Management status in the Agent Status panel ◆ Bundles with content such as Windows bundle, File bundle, or Directive bundle that are assigned to the device but are not yet installed on the device are deleted from the device. 	<ul style="list-style-type: none"> ◆ If the ZENworks license expires, you cannot create, edit, enable, or disable bundles. However, you can view the existing bundles in ZENworks Control Center or by using zman commands. ◆ If the ZENworks license is deactivated, then the Bundles tab is no longer displayed in the left navigation pane of the ZENworks Control Center and you cannot use bundles related zman commands.

Table 23-2 Image Management





Installed and Enabled	Installed and Disabled	Uninstalled	Additional Details
<ul style="list-style-type: none"> ◆ novell-ziswin is installed and enabled on Windows XP and Windows 2003 managed devices. ◆ novell-ziswin is installed but disabled on Windows Vista, Windows 2008, Windows 7, and Windows 2008 R2 managed devices. ◆ novell-zidservice is installed and enabled on the Windows Vista, Windows 2008, Windows 7, and Windows 2008 R2 managed devices. ◆ The Image Management Agent is installed and enabled. ◆ The  icon properties page displays the status of Image Management as <i>Running</i>. 	<ul style="list-style-type: none"> ◆ novell-ziswin is only disabled but it is not uninstalled on all the Windows XP and Windows 2003 managed devices. ◆ novell-zidservice is only disabled but it is not uninstalled on the Windows Vista, Windows 2008, Windows 7, and Windows 2008 R2 managed devices. ◆ The  icon properties page displays the status of Image Management as <i>Disabled</i>. 	<ul style="list-style-type: none"> ◆ novell-ziswin is uninstalled on all the Windows XP and Windows 2003 managed devices. ◆ novell-zidservice is uninstalled on the Windows Vista, Windows 2008, Windows 7, and Windows 2008 R2 managed devices. ◆ The Image Management Agent is additionally uninstalled from the device. ◆ The  icon properties page does not display an entry for the Image Management in the Agent Status panel. 	<p>When the ZENworks 11 Configuration Management license expires:</p> <ul style="list-style-type: none"> ◆ On the ZENworks Server: You cannot install the agent with Image Management module on any new device. Also, you cannot enable or disable the Image Management module for the existing devices. ◆ On the Managed Device: novell-ziswin and the novell-zidservice are disabled but are not uninstalled. Also, the  icon properties page displays the status of Image Management as <i>Disabled</i>.

Table 23-3 Patch Management




Installed and Enabled	Installed and Disabled	Uninstalled	Additional Details
<ul style="list-style-type: none"> ◆ The Patch Management service is running on the device. ◆ The  icon properties page displays the Patch Management status as <i>Running</i> 	<ul style="list-style-type: none"> ◆ The Patch Management service is stopped and disabled on the device. ◆ The  icon properties page displays the Patch Management status as <i>Disabled</i> ◆ The patch bundles that are assigned to the device are not displayed in the NAL window or in the shortcut locations such as Desktop, Start Menu, Quick Launch, or System Tray of the device. ◆ You cannot execute patch bundle related zac commands. 	<ul style="list-style-type: none"> ◆ The Patch Management service is uninstalled from the device. ◆ The  icon properties page does not display an entry for the Patch Management status in the Agent Status panel. ◆ Patch bundles that are assigned to the device but are not yet installed on the device are deleted from the device. 	<ul style="list-style-type: none"> ◆ If the ZENworks license is deactivated, you cannot download any new patch bundles. However, the existing patches can be used for assignments.

Table 23-4 Policy Management







Installed and Enabled	Installed and Disabled	Uninstalled	Additional Details
<ul style="list-style-type: none"> ◆ The Policy Management service is running on the device. ◆ The  icon properties page displays the Policy Management status as <i>Running</i>. 	<ul style="list-style-type: none"> ◆ The Policy Management service is stopped and disabled on the device. ◆ The  icon properties page displays the Policy Management status as <i>Disabled</i>. ◆ All the policies assigned to the device are unenforced from the device. ◆ You can use ZENworks Control Center to assign policies to a device. However, the policies are not enforced on the device until the Policy Management feature is enabled. ◆ You cannot execute policy related <code>zac</code> commands. ◆ If you disable the Policy Management module on a device that is running a Dynamic Local User (DLU) policy, the module is disabled after the device is rebooted 	<ul style="list-style-type: none"> ◆ The Policy Management service is uninstalled from the device. ◆ The  icon properties page does not display an entry for the Policy Management status in the Agent Status panel. ◆ All the policies assigned to the device are unenforced from the device. ◆ If you uninstall the Policy Management module on a device that is running a Dynamic Local User (DLU) policy, the module is uninstalled after the device is rebooted. 	<ul style="list-style-type: none"> ◆ If the ZENworks license expires, you cannot create, edit, enable, or disable policies. However, the policies that are already enforced and enabled on a device continue to work on the device. ◆ If the User Management is disabled: <ul style="list-style-type: none"> ◆ The Roaming Profile policy and the DLU policy is not enforced on a device even if the user to whom the policy is assigned has logged in to the device ◆ The Windows Group Policy with user configuration settings is not enforced on the managed device even if the policy is assigned to the device.

Table 23-5 Remote Management

Installed and Enabled	Installed and Disabled	Uninstalled	Additional Details
<ul style="list-style-type: none"> ◆ The Remote Management service is running on the device. ◆ The  icon properties page displays the Remote Management status as <i>Running</i>. ◆ The device can be remotely managed. 	<ul style="list-style-type: none"> ◆ The Remote Management service is stopped and disabled on the device. ◆ The  icon properties page displays the Remote Management status as <i>Disabled</i>. ◆ The Remote Management policy is unenforced from the device. ◆ The device cannot be remotely managed. 	<ul style="list-style-type: none"> ◆ The Remote Management service is uninstalled from the device. ◆ The  icon properties page does not display an entry for the Remote Management status in the Agent Status panel ◆ The Remote Management policy is unenforced from the device. ◆ The device cannot be remotely managed. 	<p>If the ZENworks license expires, the Remote Management service continues to run and the device can be remotely managed.</p>

23.4.2 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 277](#)
- ◆ [“Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Linux Managed Device” on page 278](#)

Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Windows Managed Device

- 1 On a Windows managed device, create the `StatusSenderConfig.xml` file in `<CONF_DIR>`.
- 2 Open `<CONF_DIR>/StatusSenderConfig.xml` in a text editor.
- 3 Provide the following values:

```
<configuration>
<StatusSender>
  <Parameter Name="SleepTime" Value="milliseconds"/>
</StatusSender>
</configuration>
```

Changing the Default Status Upload Frequency of the ZENworks Adaptive Agent on a Linux Managed Device

1 On a Linux managed device, create the `StatusSenderConfig.conf` file in `/etc/opt/novell/zenworks/StatusSenderConfig.conf`.

2 Add the `SleepTime` parameter as: `SleepTime=<nnn>`

Where `nn` is the interval frequency (in minutes) which Status Sender will rollup the status messages.

24 Configuring ZENworks Explorer

You can configure common settings at three levels for the ZENworks Explorer component of the ZENworks Adaptive Agent:

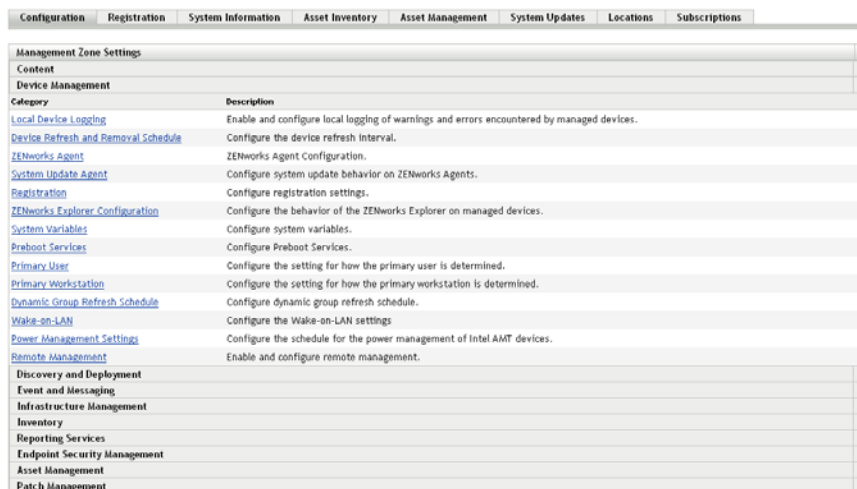
- ♦ **Management Zone:** The settings are inherited by all device folders and devices.
- ♦ **Device Folder:** The bundle settings are inherited by all devices contained within the folder or its subfolders.
- ♦ **Device:** The bundle settings apply only to the device for which they are configured.

The following sections contain more information:

- ♦ [Section 24.1, “Configuring ZENworks Explorer Settings on the Management Zone Level,”](#) on page 279
- ♦ [Section 24.2, “Configuring ZENworks Explorer Settings on the Device Folder Level,”](#) on page 280
- ♦ [Section 24.3, “Configuring ZENworks Explorer Settings on the Device Level,”](#) on page 281
- ♦ [Section 24.4, “ZENworks Explorer General Settings,”](#) on page 281

24.1 Configuring ZENworks Explorer Settings on the Management Zone Level

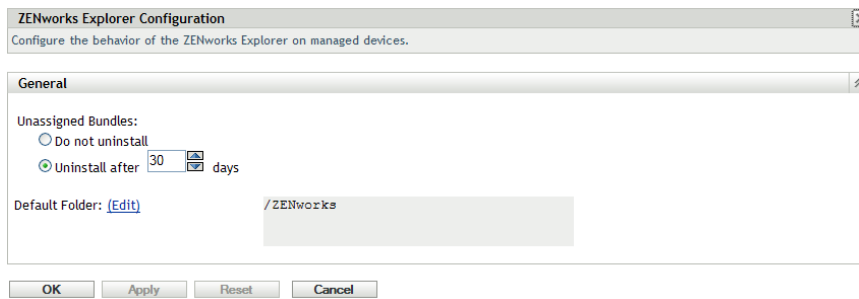
- 1 In ZENworks Control Center, click the *Configuration* tab.



The screenshot shows the ZENworks Control Center interface with the Configuration tab selected. The Management Zone Settings section is expanded, displaying a list of configuration categories and their descriptions.

Category	Description
Local Device Logging	Enable and configure local logging of warnings and errors encountered by managed devices.
Device Refresh and Removal Schedule	Configure the device refresh interval.
ZENworks Agent	ZENworks Agent Configuration.
System Update Agent	Configure system update behavior on ZENworks Agents.
Registration	Configure registration settings.
ZENworks Explorer Configuration	Configure the behavior of the ZENworks Explorer on managed devices.
System Variables	Configure system variables.
Preboot Services	Configure Preboot Services.
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.
Power Management Settings	Configure the schedule for the power management of Intel AMT devices.
Remote Management	Enable and configure remote management.
Discovery and Deployment	
Event and Messaging	
Infrastructure Management	
Inventory	
Reporting Services	
Endpoint Security Management	
Asset Management	
Patch Management	

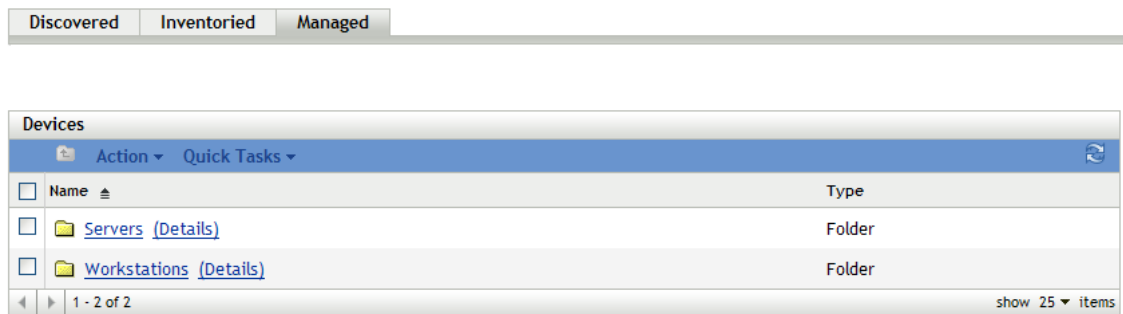
- 2 Click the *Device Management* tab.
- 3 Click *ZENworks Explorer Configuration*.



- 4 Fill in the fields. For more information, see [Section 24.4, “ZENworks Explorer General Settings,” on page 281](#).
- 5 Click *OK* to apply the changes.

24.2 Configuring ZENworks Explorer 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 *Content*, then click *ZENworks Explorer Configuration*.



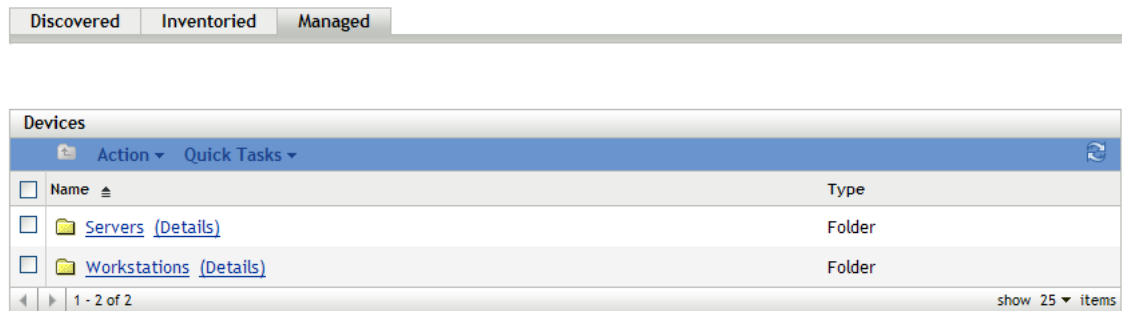
- 5 Click *Override Settings*.

If you are configuring the settings on a device folder or a device, you need to click *Override Settings* before you can select any of the settings.

- 6 Fill in the fields. For more information, see [Section 24.4, “ZENworks Explorer General Settings,” on page 281](#).
- 7 Click *OK* to apply the changes.

24.3 Configuring ZENworks Explorer Settings on the Device Level

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



- 2 Click *(Details)* against the *Servers* or *Workstations* folder.
- 3 Click the device for which you want to configure settings.
- 4 Click the *Settings* tab, click *Device Management*, and then click *ZENworks Explorer Configuration*.
- 5 Click *Override Settings*.
If you are configuring the settings on a device folder or a device, you need to click *Override Settings* before you can select any of the settings.
- 6 Fill in the fields. For more information, see [Section 24.4, “ZENworks Explorer General Settings,” on page 281](#).
- 7 Click *OK* to apply the changes.




24.4 ZENworks Explorer General Settings

You can use the ZENworks Explorer General panel to configure ZENworks Explorer to uninstall a bundle that is no longer assigned to the device, specify the number of days to wait before uninstalling the bundle, and specify the default folder that ZENworks Explorer uses:

- ♦ **Unassigned Bundles:** Select whether or not you want a bundle to be uninstalled after it is no longer assigned to a device or the device’s user.

If you choose to uninstall the bundle, select the number of days to wait before uninstalling the application. Specify 0 if you want the application to be uninstalled as soon as it is no longer assigned to the device or user.
- ♦ **Default Folder:** ZENworks Explorer displays a default folder (ZENworks) in Windows Explorer, on the Windows Start menu and in the ZENworks Window. Bundles are placed in the default folder unless you override the default folder by specifying a folder on a bundle’s Summary page.

The default folder can be renamed to meet the needs of your organization. Click *Edit* to change the folder name.

- ◆ **Disable Icon Overlays:** Select this option to disable both the status indicator overlay and the red ZENworks icon overlay from a bundles icon. For example, you can choose to remove the status indicator overlay  and the ZENworks icon overlay  from the bundle icon .

NOTE: After choosing to disable the icon overlays, you must do the following on a Windows device for the bundle icon changes to be effective on the device:

- ◆ **For the Desktop, System Tray, Start Menu, and Quick Launch bundle icons:** Logout and log into the device again.
 - ◆ **For the ZENworks Application Window bundle icons:** Close the ZENworks Application Window and launch it again.
-

25 Removing the ZENworks Pre-Agent from a Device

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.

26 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. This includes if a dialog box displays on the managed devices prompting users to allow the system update or a required boot after a system update is applied. Users can either postpone the update or reboot. You can also provide custom text in the prompts that you choose to display.

For more information, see [Chapter 20, “Configuring the System Update Behavior of the ZENworks Adaptive Agent,”](#) on page 261.

27 Customizing the Look and Feel of the ZENworks Icon

The ZENworks Icon  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.

As part of our initiative to make the icons and user interfaces consistent across all Novell Products, the ZENworks icons have been modified in ZENworks 11 Configuration Management. However, you can continue using the ZENworks 10 Configuration Management icons. For more information, search for the *Replacing the ZENworks 11 Icons with the ZENworks 10.x Icons* article at the [ZENworks Cool Solutions Community](http://www.novell.com/communities/coolsolutions/zenworks) (<http://www.novell.com/communities/coolsolutions/zenworks>).

ZENworks 11 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.

- [Section 27.1, “Replacing the Default ZENworks Icons with the New Customized Icons,” on page 287](#)
- [Section 27.2, “Replacing the Customized Icons with the Default ZENworks Icons,” on page 288](#)

27.1 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 \(http://support.microsoft.com/kb/75041\)](http://support.microsoft.com/kb/75041).

27.2 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`.


28 Troubleshooting the Adaptive Agent


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 289
- ♦ “Unable to use rights-based authentication to remotely manage a device” on page 289
- ♦ “Unable to launch a terminal session with a Citrix Server that has ZENworks Adaptive Agent installed” on page 290
- ♦ “The ZENworks Adaptive Agent Policies page does not display the correct status for the DLU policy” on page 290
- ♦ “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 291
- ♦ “The general refresh of a managed device might take considerable time if the device is unable to contact the Primary Server” on page 291
- ♦ “Agents may fail to connect to the Servers on slow links” on page 291
- ♦ “By default, the general refresh on a Windows device refreshes both the device and user sessions.” on page 292
- ♦ “If you perform a Remote Desktop access to a Windows 2008 device and keep the console idle, the Remote Desktop connection gets disconnected after 20 seconds.” on page 292
- ♦ “The zislnx functionality does not work when the agent is installed through YUM on RHEL6.1 devices and the agent does not read or write the Device GUID and Device Data from or to the Image-safe data on the device.” on page 292
- ♦ “Unable to restart a Windows 7 device when using the Reboot quicktask in the ZENworks Control Center.” on page 293
- ♦ “Some garbage characters are displayed on the Mac console, while uninstalling agent from a Mac device.” on page 293

Satellite menu is not displayed in the left navigation pane of the ZENworks Adaptive Agent page

Source: ZENworks 11; 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 11; 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 in [ZENworks 11 SP2 Administration Quick Start](#).

Unable to launch a terminal session with a Citrix Server that has ZENworks Adaptive Agent installed

Source: ZENworks 11; 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 11; 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 11; 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 11 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.

Agents may fail to connect to the Servers on slow links

Source: ZENworks 11; ZENworks Adaptive Agent

Explanation: On slow links, agents may fail to connect to the servers. This can be observed by the connection timeout errors in the agent log file. To address this, the connection-timeout and socket-timeout settings must be increased to a suitable value above the default value of 100000. This value is in milliseconds.

Action: To change the default values for connection-timeout and socket-timeout on a Linux or a Macintosh managed device.:

- 1 Open `/etc/opt/novell/zenworks/conf/xplat/md.properties` in a text editor.
- 2 Add the connection-timeout parameter as `connection-timeout=200000` and socket-timeout parameter as `socket-timeout=200000`.

By default, the general refresh on a Windows device refreshes both the device and user sessions.

Source: ZENworks 11; ZENworks Adaptive Agent.

Explanation: The general refresh on a Windows device from the ZENworks icon or the `zac` command utility refreshes both the device and user sessions. You can disable the general refresh for the device session by setting the value of the `ManualDeviceRefresh` registry key to `Disabled`.

Action: To disable the general refresh for the device session, perform the following steps:

- 1 Open the Registry Editor.
- 2 Go to `HKLM\Software\Novell\ZCM\`.
- 3 Set the `ManualDeviceRefresh` registry key value to `Disabled`.

If you perform a Remote Desktop access to a Windows 2008 device and keep the console idle, the Remote Desktop connection gets disconnected after 20 seconds.

Source: ZENworks 11; ZENworks Adaptive Agent.

Explanation: When you perform a Remote Desktop access to a Windows 2008 device by using the `mstsc` command and keep the console idle, the Remote Desktop connection gets disconnected after 20 seconds.

Action: After connecting to a Remote Desktop, keep the console active until the desktop screen appears.

The `zislx` functionality does not work when the agent is installed through YUM on RHEL6.1 devices and the agent does not read or write the Device GUID and Device Data from or to the Image-safe data on the device.

Source: ZENworks 11; ZENworks Adaptive Agent.

Actions: Manually download the Adaptive Agent deployment package from the server and install the Agent. For more information on installing an Agent, see [“Deploying the ZENworks Adaptive Agent”](#) in the *ZENworks 11 Discovery, Deployment, and Retirement Reference*.

Unable to restart a Windows 7 device when using the Reboot quicktask in the ZENworks Control Center.

Source: ZENworks 11; ZENworks Adaptive Agent.

Action: Manually restart the Windows 7 device for the Reboot quicktask to work.

Some garbage characters are displayed on the Mac console, while uninstalling agent from a Mac device.

Source: ZENworks 11; ZENworks Adaptive Agent.

Explanation: While uninstalling the ZENworks Adaptive Agent from a Mac device, some garbage characters are displayed on the Mac console. This is observed in some localized languages such as Chinese.

Action: Uninstallation is done by a root user. Hence, the root user's locale needs to be set. The terminal settings, which include the user locale settings needs to be done along with the Operating System settings to support localization.

V Database Management

Novell ZENworks 11 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 32, “Backing Up and Restoring the ZENworks Server and Certificate Authority,” on page 357](#).

ZENworks 11 also allows you to migrate the data from the Sybase SQL Anywhere database to an Oracle database or to an MSSQL database.

Review the following sections for detailed information:

- ♦ [Chapter 29, “Embedded Database Maintenance,” on page 297](#)
- ♦ [Chapter 30, “External Database Maintenance,” on page 321](#)
- ♦ [Chapter 31, “Database Management - Best Practices, Tips, Troubleshooting,” on page 345](#)

29 Embedded Database Maintenance

- ♦ Section 29.1, “Retrieving and Storing the Credentials of the Embedded Sybase SQL Anywhere Database,” on page 297
- ♦ Section 29.2, “Changing the Ports Used by the Embedded Sybase SQL Anywhere Database,” on page 297
- ♦ Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,” on page 299
- ♦ Section 29.4, “Restoring the Embedded Sybase SQL Anywhere Database,” on page 306
- ♦ Section 29.5, “Moving the Internal Sybase Database from One Primary Server to Another Primary Server,” on page 308
- ♦ Section 29.6, “Moving the Data from an Embedded Sybase Database to an External Sybase Database,” on page 312
- ♦ Section 29.7, “Migrating the Data from an Internal Sybase Database to an External Oracle Database,” on page 314

29.1 Retrieving and Storing the Credentials of the Embedded Sybase SQL Anywhere Database

If you have installed ZENworks 11 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 11 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.

29.2 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 \(http://www.ianywhere.com/developer/product_manuals/sqlanywhere/1001/en/html/dbdaen10/daserverport-network-conparm.html\)](http://www.ianywhere.com/developer/product_manuals/sqlanywhere/1001/en/html/dbdaen10/daserverport-network-conparm.html).

29.3 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.

- ♦ [Section 29.3.1, “Backing Up the Embedded Sybase SQL Anywhere Database on a Windows or Linux Server,” on page 299](#)
- ♦ [Section 29.3.2, “Backing up the Embedded Sybase SQL Anywhere Database Running on a Windows Server to a Network Location on a Remote Windows Machine,” on page 301](#)
- ♦ [Section 29.3.3, “Backing up the Embedded Sybase SQL Anywhere Database Running on a Linux Server to a Network Location on a Remote Linux Machine,” on page 303](#)

29.3.1 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. Enter the number next to the `Stop` 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 `Stop` action.

- 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. Enter the number next to the Start 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 Start action.

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\database 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 11 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 349
- ♦ [“Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup”](#) on page 349

29.3.2 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 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 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 Stop
```

3a2 Enter the number next to the Stop action.

- 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 Enter the number next to the Start action.

- 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 11 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 349
- ♦ [“Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup”](#) on page 349

29.3.3 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`
- ♦ `writable = 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 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 Enter the number next to the `Stop` action.

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 Enter the number next to the `Start` action.

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 11 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 349
- ♦ “Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup” on page 349

29.4 Restoring the Embedded Sybase SQL Anywhere Database

The following sections provide information on restoring the backed-up embedded Sybase SQL Anywhere database:

- ♦ [Section 29.4.1, “Restoring the Embedded Sybase SQL Anywhere Database on a Windows Server,” on page 306](#)
- ♦ [Section 29.4.2, “Restoring the Embedded Sybase SQL Anywhere Database on a Linux Server,” on page 307](#)

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 32, “Backing Up and Restoring the ZENworks Server and Certificate Authority,” on page 357](#).

29.4.1 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. Enter the number next to the `Stop` 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 `Stop` action.

- 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. Enter the number next to the *Start* 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 *Start* action.

29.4.2 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. Enter the number next to the *Stop* 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 *Stop* action.

- 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. Enter the number next to the `Start` 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 `Start` action.

29.5 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-12.0.0.2601.msi/rpm` and `novell-zenworks-sybase-libs-*/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-12.0.0.2601.msi`, `novell-zenworks-sybase-libs-12.0.0.2601.msi` and `novell-zenworks-sybase-libs-12.0.0.2601.x86_64.msi` for Windows and `sybase-asa-12.0.0-2624.i586.rpm`, `novell-zenworks-sybase-libs-12.0.0-2624.i586.rpm` and `novell-zenworks-sybase-libs-12.0.0-2624.x86_64.rpm` for Linux from PSDB1 to the temporary location that you created on PSDB2 (in [Step 4a on page 309](#)). 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.

5 Install `sybase-asa-12.0.0.2601.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-  
12.0.0.2601.msi TARGETDIR="%ZENWORKS_HOME%\share" ALLUSERS=2
```

For example:

```
msiexec /i c:\sybase\sybase-asa-12.0.0.2601.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-12.0.0-2624.i586.rpm
```

For example:

```
rpm -Uvh /tmp/sybase/sybase-asa-12.0.0-2624.i586.rpm
```

The Sybase database is now installed on PSDB2.

6 On PSDB2, ensure that the installed EBF version is 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-.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-12.0.0.2601.msi TARGETDIR="{Parent of the Novell\ZENworks directory structure}" ALLUSERS=2 REBOOT=ReallySuppress
```

For example:

```
msiexec /i c:\sybase\novell-zenworks-sybase-libs-12.0.0.2601.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-12.0.0-2624.i586.rpm
```

For example:

```
rpm -Uvh /tmp/sybase/novell-zenworks-sybase-libs-12.0.0-2624.i586.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 \(http://download.novell.com/Download?buildid=OBov7jxTrng~\)](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**.
- 8e** Go to `HKLM\SYSTEM\CurrentControlSet\services\SQLANYs_ZENDataStore` and verify the `ImagePath` value to ensure it is pointing to `dsrv12.exe`.
- 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'
```

29.6 Moving the Data from an Embedded Sybase Database to an External Sybase Database

ZENworks 11 SP2 allows you move the data from a Sybase SQL Anywhere database (embedded Sybase database) to an OEM Sybase database (external Sybase database).


- ♦ [Section 29.6.1, “Preparing to Move the Data,” on page 312](#)
- ♦ [Section 29.6.2, “Moving the Data from the Internal Sybase to the External Sybase,” on page 312](#)

29.6.1 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 11 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 11 Server Installation Guide*.

29.6.2 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. Enter the number next to the *Stop* 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 *Stop* action.
- 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 Delete the database role for the device that has the internal 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/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. Enter the number next to the `Start` 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 `Start` action.

The ZENworks Server now points to new database.

29.7 Migrating the Data from an Internal Sybase Database to an External Oracle Database

ZENworks 11 allows you migrate the data from an internal Sybase database running on a ZENworks Primary Server to an Oracle database installed on a device that does not have the ZENworks 11 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 29.7.3, “Post-Migration Tasks,” on page 318](#).

Review the following to migrate the database:

- ◆ [Section 29.7.1, “Preparing to Move the Data,” on page 314](#)
- ◆ [Section 29.7.2, “Migrating the Data from the Internal Sybase Database to an Oracle Database,” on page 316](#)
- ◆ [Section 29.7.3, “Post-Migration Tasks,” on page 318](#)

29.7.1 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 11 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 11.
- ◆ 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 11 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. Enter the number next to the `Stop` 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 `Stop` action.
- ◆ 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.

29.7.2 Migrating the Data from the Internal Sybase Database to an Oracle Database

- ♦ [“Migrating the Data from the Internal Sybase Database to an Oracle Database” on page 316](#)
- ♦ [“Resuming the Database Migration” on page 317](#)

Migrating the Data from the Internal Sybase Database to an Oracle Database

- 1 Make sure that all the tasks listed in [Section 29.7.1, “Preparing to Move the Data,” on page 314](#) are completed.
- 2 Run the database migration utility.
 - ♦ **On the Windows Primary Server:** At the command prompt, go to `ZENworks_installation_path\bin\`, then enter the following command:


```
novell-zenworks-configure.bat -c DBMigrateConfigureAction
```
 - ♦ **On the Linux Primary Server:** At the console prompt, go to `/opt/novell/zenworks/bin/`, then 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 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/monitor.conf` to remove `sybase-asa` from the line `services=novell-zenserver novell-zenload sybase-asa`.
- 13 After the database is successfully migrated, continue with [Section 29.7.3, "Post-Migration Tasks,"](#) on page 318.

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_HOME%\bin` directory on Windows, and in the `/opt/novell/zenworks/bin` directory on Linux.

- 1 Run the database migration utility.
 - ♦ **On the Windows Primary Server:** At the command prompt, go to `ZENworks_installation_path\bin\`, then enter the following command:


```
novell-zenworks-configure.bat -c DBMigrateConfigureAction
```
 - ♦ **On the Linux Primary Server:** At the console prompt, go to `/opt/novell/zenworks/bin`, then 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 29.7.3, "Post-Migration Tasks,"](#) on page 318.

29.7.3 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. Enter the number next to the `Start` 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 `Start` action.

- 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 29.7.1, "Preparing to Move the Data,"](#) on page 314.

- 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.

30 External Database Maintenance

- ◆ Section 30.1, “Backing Up the External Sybase Database,” on page 321
- ◆ Section 30.2, “Restoring the External Sybase Database,” on page 331
- ◆ Section 30.3, “Moving the Data from One External Sybase Database to another External Sybase Database,” on page 332
- ◆ Section 30.4, “Moving the Data from an External OEM Sybase Database to an Embedded Sybase Database,” on page 334
- ◆ Section 30.5, “Migrating the Data from the External Sybase Database to an External Oracle Database,” on page 336
- ◆ Section 30.6, “Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database,” on page 341
- ◆ Section 30.7, “Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database,” on page 342

30.1 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 11 installation media, you can back it up to a directory on the local machine or to a network location.

- ◆ Section 30.1.1, “Backing Up the External Sybase Database on a Windows or Linux Server,” on page 321
- ◆ Section 30.1.2, “Backing up the External Sybase Database Running on a Windows Server to a Network Location on a Remote Windows Machine,” on page 324
- ◆ Section 30.1.3, “Backing up the External Sybase Database Running on a Linux Server to a Network Location on a Remote Linux Machine,” on page 328

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.

30.1.1 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%\sybase\ASA\ 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. Enter the number next to the `Stop` 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 `Stop` action.

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. Enter the number next to the `Start` 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 `Start` action.

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

```
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 31.2.2, “Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup,”](#) on page 350.

30.1.2 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\` 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 Enter the number next to the `Stop` action.
 - 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_directory'
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 Enter the number next to the `Start` action.

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:

```
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 31.2.2, “Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup,”](#) on page 350.

30.1.3 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`
 - ♦ `writable = 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\ 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 [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 Enter the number next to the *Stop* action.

- 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 Enter the number next to the *Start* action.

- 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:

```
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 31.2.2, “Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup,”](#) on page 350.


30.2 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 32, “Backing Up and Restoring the ZENworks Server and Certificate Authority,”](#) on page 357.

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. Enter the number next to the `Stop` 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 *Stop* action.
- 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 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. Enter the number next to the *Start* 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 *Start* action.

30.3 Moving the Data from One External Sybase Database to another External Sybase Database

ZENworks 11 allows you move the data from one OEM Sybase database (external Sybase database) to another external Sybase database.

- ♦ [Section 30.3.1, “Preparing to Move the Data,” on page 333](#)
- ♦ [Section 30.3.2, “Moving the Data from One External Sybase to Another External Sybase,” on page 333](#)

30.3.1 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 11 Server Installation Guide*.

30.3.2 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. Enter the number next to the Stop 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 Stop action.

- 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 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. Enter the number next to the `Start` 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 `Start` action.

The ZENworks Server now points to new database (EDB2).

30.4 Moving the Data from an External OEM Sybase Database to an Embedded Sybase Database

ZENworks 11 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 30.4.1, “Preparing to Move the Data,” on page 334](#)
- ♦ [Section 30.4.2, “Moving the Data from the External Sybase to the Embedded Sybase,” on page 335](#)

30.4.1 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 11 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 11 Server Installation Guide*.

During the installation of the embedded Sybase database, you must consider the following points while 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.

30.4.2 Moving the Data from the External Sybase to the Embedded Sybase

1 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 Stop
```

2. Enter the number next to the *Stop* action.

- ♦ **On Linux:** Do the following:

1. Execute the following command at the server prompt:

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

2. Enter the number next to the *Stop* action.

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 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. Enter the number next to the `Start` 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 `Start` action.

The ZENworks Server now points to new database.

30.5 Migrating the Data from the External Sybase Database to an External Oracle Database

ZENworks 11 allows you migrate the data from the external Sybase database to an Oracle database installed on a device that does not have the ZENworks 11 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 30.5.3, "Post-Migration Tasks," on page 339](#).

Review the following to migrate the database:

- ♦ [Section 30.5.1, "Preparing to Move the Data," on page 336](#)
- ♦ [Section 30.5.2, "Migrating the Data from the External Sybase Database to an Oracle Database," on page 338](#)
- ♦ [Section 30.5.3, "Post-Migration Tasks," on page 339](#)

30.5.1 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 11 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 `zman report-save (rpsv) (destination folder)` command. The XML files contain rights and ownership details of all the reports.
- ◆ Make sure that the Oracle database is installed on a device that does not have ZENworks 11 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. Enter the number next to the `Stop` 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 **Stop** action.

- ♦ [\[Prema:ZENworks 11 SP2 RC1: Bug 744761: Ramnish Kumar: Inputs provided by Beena\]](#) Make sure that your external Sybase database service is running.
- ♦ (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.

30.5.2 Migrating the Data from the External Sybase Database to an Oracle Database

- ♦ [“Migrating the Data from the External Sybase Database to an Oracle Database” on page 338](#)
- ♦ [“Resuming the Database Migration” on page 339](#)

Migrating the Data from the External Sybase Database to an Oracle Database

- 1 Make sure that all the tasks listed in [Section 30.5.1, “Preparing to Move the Data,” on page 336](#) are completed.
- 2 Run the database migration utility.
 - ♦ **On the Windows Primary Server:** At the command prompt, go to `ZENworks_installation_path\bin\`, then enter the following command:

```
novell-zenworks-configure.bat -c DBMigrateConfigureAction
```
 - ♦ **On the Linux Primary Server:** At the console prompt, go to `/opt/novell/zenworks/bin/`, then 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 30.5.3, "Post-Migration Tasks,"](#) on page 339.

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 the Windows Primary Server:** At the command prompt, go to `ZENworks_installation_path\bin\`, then enter the following command:

```
novell-zenworks-configure.bat -c DBMigrateConfigureAction
```
 - ♦ **On the Linux Primary Server:** At the console prompt, go to `/opt/novell/zenworks/bin`, then 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 30.5.3, "Post-Migration Tasks,"](#) on page 339.

30.5.3 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 From the device where you ran the migration utility, copy the following files and paste them in the appropriate directory, on all other Primary 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. Enter the number next to the `Start` 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 `Start` action.

- 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 30.5.1, "Preparing to Move the Data," on page 336](#).

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.

30.6 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 30.6.1, “Preparing to Move the Data,” on page 341](#)
- ◆ [Section 30.6.2, “Configuring the ZENworks Server to Point to the New MS SQL Database,” on page 341](#)

30.6.1 Preparing to Move the Data

Before configuring the 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 11 Server Installation Guide*.
- ◆ 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. Enter the number next to the `Stop` 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 `Stop` action.
- ◆ Move the data from MSDB1 to MSDB2. For more information about moving the data, see the MS SQL database documentation.

30.6.2 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.
- ◆ If user password of the database is changed, then you must change the password in the `dmaccounts.properties` and `zenaudit_dmaccounts.properties` files. (located in `ZENworks_installation_path\conf\datamodel` on Windows and in `/etc/opt/novell/zenworks/datamodel` on Linux). It is recommended that do not use the SA user for ZENworks database access.

`username=password`

The password will be encrypted automatically when you restart the ZENworks services.

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-zenmtr restart`
 - ◆ `/etc/init.d/novell-zenserver restart`
 - ◆ `/etc/init.d/novell-zenloader restart`

3 Start all the ZENworks Services on all the other 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 *Start* 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 *Start* action.

30.7 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:

- ◆ [Section 30.7.1, “Preparing to Move the Data,” on page 343](#)
- ◆ [Section 30.7.2, “Configuring the ZENworks Server to Point to the New Oracle Database,” on page 343](#)

30.7.1 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 11 Server 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. Enter the number next to the `Stop` 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 `Stop` action.

30.7.2 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 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. Enter the number next to the `Start` 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 `Start` action.

ZENworks Server should now point to the new database.

31 Database Management - Best Practices, Tips, Troubleshooting

This sections includes some tips and best practices for Sybase database:

- ♦ [Section 31.1, “Database Best Practices,” on page 345](#)
- ♦ [Section 31.2, “Database Tips,” on page 348](#)
- ♦ [Section 31.3, “Troubleshooting Database Migration,” on page 352](#)

31.1 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.

- ♦ [Section 31.1.1, “Rebuilding the Sybase Database,” on page 345](#)

31.1.1 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 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, enter `/etc/init.d/sybase-asa start`.


- 1b Obtain the Sybase connection information 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 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. Enter the number next to the Stop 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 Stop action.

4 At the console prompt, go to the Sybase database directory. By default, it is


%ZENWORKS_HOME%\database on Windows, and /var/opt/novell/zenworks/database on Linux.

5 Take a reliable backup of the zenworks_zone_name.db and Zenworks_zone_name.log files.

For detailed information on how to take an immediate backup of the files of the embedded Sybase database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,” on page 299](#). For detailed information on how to take an immediate backup of the files of the external Sybase database, see [Section 30.1, “Backing Up the External Sybase Database,” on page 321](#).

6 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 (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\ 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 Create a temporary directory with the name as `unload` within `c:\dbreload\` on Windows or within `/tmp/dbreload/` on Linux.

11 At the console prompt of the database server, run the following command to start the database service:

On Windows: `%ZENWORKS_HOME%\database\zenworks_ZONE_NAME.db -n rebuild`

On Linux: `/var/opt/novell/zenworks/database/zenworks_ZONE_NAME.db -n rebuild`

12 Open another command prompt on the database server, and run the `unload` command.

12a At the command prompt, go to the `%ZENWORKS_HOME%\share\ASA\` 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 \(http://www.novell.com/support\)](http://www.novell.com/support).

- 14 Stop the Novell ZENworks Embedded Datastore service by using the 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. Enter the number next to the `Start` 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 `Start` action.
- 18 Take a backup of the newly created database on a regular basis (daily or weekly).

31.2 Database Tips

- ♦ [Section 31.2.1, "Changing the Backup Location and Schedule of the Embedded Sybase Database Subsequent to the Initial Backup," on page 349](#)
- ♦ [Section 31.2.2, "Changing the Backup Schedule and Location of the External Sybase Database Subsequent to the Initial Backup," on page 350](#)
- ♦ [Section 31.2.3, "Reverting to the ZENworks Sybase Database from the ZENworks Oracle Database," on page 352](#)
- ♦ [Section 31.2.4, "Identifying the EBF Version of Sybase Database Server," on page 352](#)

31.2.1 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” on page 349](#)
- ♦ [“Changing the Backup Schedule of the Embedded Sybase SQL Anywhere Database Subsequent to the Initial Backup” on page 349](#)

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\database 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 11 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\database` 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 11 Command Line Utilities Reference*.

31.2.2 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\` 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_sche
dule_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:\dbbackup` 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;
```

31.2.3 Reverting to the ZENworks Sybase Database from the ZENworks Oracle Database

ZENworks 11 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 11 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.

31.2.4 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\` directory on a Windows database server and in the `/opt/novell/zenworks/share/sybase/bin32s` directory on a Linux database server.

31.3 Troubleshooting Database Migration

- ♦ [Section 31.3.1, "Troubleshooting a Java Heap Space Exception," on page 353](#)
- ♦ [Section 31.3.2, "Troubleshooting an Oracle Database Crash," on page 353](#)
- ♦ [Section 31.3.3, "Troubleshooting an Oracle Tablespace Issue," on page 354](#)
- ♦ [Section 31.3.4, "Troubleshooting the Database Migration Failure Issue," on page 354](#)
- ♦ [Section 31.3.5, "Troubleshooting the Database Migration by Using An Existing User Schema," on page 354](#)

31.3.1 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.

31.3.2 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 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`.

31.3.3 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.

31.3.4 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 stratÃ©gie {0} n'a
pas pu Ãªtre appliquÃ©e du fait que la valeur "{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%';
```

31.3.5 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 316](#). 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 338](#).

VI Disaster Recovery

The following sections explain the disaster recovery mechanisms available in Novell ZENworks 11 that help you protect the first Primary Server of a Management Zone if an organizational risk assessment identifies a need for such steps:

- ◆ [Chapter 32, “Backing Up and Restoring the ZENworks Server and Certificate Authority,” on page 357](#)
- ◆ [Chapter 33, “Replacing Primary Servers,” on page 361](#)
- ◆ [Chapter 34, “Changing the IP Address or DNS Name of Primary Servers,” on page 369](#)
- ◆ [Chapter 35, “Reconfiguring a Zone Certificate Before It Expires,” on page 373](#)
- ◆ [Chapter 36, “Reconfiguring a Zone Certificate After It Expires,” on page 381](#)

32 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:

- ◆ [Section 32.1, “Backing Up a ZENworks Server,” on page 357](#)
- ◆ [Section 32.2, “Restoring a ZENworks Server,” on page 358](#)
- ◆ [Section 32.3, “Backing Up the Certificate Authority,” on page 359](#)
- ◆ [Section 32.4, “Restoring the Certificate Authority,” on page 359](#)

32.1 Backing Up a ZENworks Server

Novell ZENworks 11 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 (bundle, policy, and image files). 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 V, “Database Management,” on page 295](#).

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 V, “Database Management,” on page 295](#).

- 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.

For information on the content repository, see [Section 13.1, “Content Repository,” on page 197](#).

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.

32.2 Restoring a ZENworks Server

This procedure assumes the following:

- ♦ You have a backup of the ZENworks Server’s configuration information. See [Section 32.1, “Backing Up a ZENworks Server,” on page 357](#).
- ♦ If the ZENworks database resides on the ZENworks Server, you have a backup of the database. See [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,” on page 299](#).
- ♦ The bundles and policies that are stored on the ZENworks Server have been replicated to other ZENworks Servers. If not, distribution of a policy or bundle from the restored ZENworks Server fails.
- ♦ The image files that are stored on the ZENworks Server are available on another ZENworks Server. If not, distribution of the image files from the restored ZENworks Server will fail.

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 pass phrase (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 29.4, “Restoring the Embedded Sybase SQL Anywhere Database,”](#) on page 306.
- 7 (Conditional) If you have backups of the image files, restore the files to the `Novell\Zenworks\work\content-repo\images` directory on a Windows server or the `/var/opt/novell/zenworks/content-repo/images` directory on a Linux server.
- 8 Restart the ZENworks Server.

32.3 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 11 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.

32.4 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 11 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 32.3, “Backing Up the Certificate Authority,”](#) on page 359).

- 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\conf\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`.

33 Replacing Primary Servers

- ♦ Section 33.1, “Replacing the First Primary Server with the Second Primary Server,” on page 361
- ♦ Section 33.2, “Replacing an Existing Primary Server with a New Primary Server,” on page 365

33.1 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 11 on the new server in the same Management Zone. Consequently, the new server becomes the first Primary Server.

The first Primary Server and the second Primary Server must have the same version of the ZENworks 11 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)

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 (Conditional) If the first Primary Server has add-on images:

- 2a In ZENworks Control Center for the second Primary Server, click the *Bundles* tab, then click the Imaging bundle.


The *Summary* tab is displayed.

- 2b Click *Edit* next to *Add-on Image File*.

The Bundle Add-on Image wizard is displayed.

- 2c On the *Add Image Server Address* page, select the first Primary Server that is associated with the bundle, then click *Remove*.




- 2d Click *Add*.

- 2e Click  next to the *Servers* folder to navigate through the folders until you find the second Primary Server.

- 2f Select the second Primary Server to display its name in the *Selected* list, then click *OK*.

- 2g Click *Finish*.

The add-on image is associated with the second Primary Server, and the add-on image content is created on the second Primary Server.

- 2h In the *Summary* tab of the bundle, click the *Increment Version* underlined link for *Version*, then click *Yes* in the Confirm Version Increment dialog box.
- 3 (Conditional) If the first Primary Server has a ZENworks Imaging bundle, copy the bundle to the second Primary Server:
 - 3a Manually copy all the files with the `.zmg` extension from the `/content-repo/images` directory of the first Primary Server to the `/content-repo/images` directory on the second Primary Server.
 - 3b In ZENworks Control Center of the second Primary Server, click the *Bundles* tab, then click the Imaging bundle.
 - 3c Click the *Actions* tab.
 - 3d Click the ZENworks Image action.
The Edit Action dialog box is displayed.
 - 3e In the *ZENworks Image* field, click .
The Server and Path Information dialog box is displayed.
 - 3f In the *Server Object, IP or DNS* field, click  to browse for and select the second Primary Server.
 - 3g In the *File Path on Server* field, click  to browse for and select the `image.zmg` file.
- 4 (Conditional) If the first Primary Server has ZENworks Reporting Server installed, take a reliable back-up of the reports by using the `zman Report` commands.

For detailed information about the `zman Report Commands`, view the `zman` man page (`man zman`) on the server or see “`zman(1)`” in [ZENworks 11 Command Line Utilities Reference](#).

- 5 Export the certificate authority role.
 - 5a 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 32.3, “Backing Up the Certificate Authority,” on page 359](#).

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

- 5b 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 32.4, “Restoring the Certificate Authority,” on page 359](#).
- 6 In the default closest server rule at the Management Zone level, move the first Primary Server as the last entry in the servers list.
 - 6a In ZENworks Control Center, click the *Configuration* tab.
 - 6b In the Management Zone Settings panel, click *Infrastructure Management > Closest Server Default Rule*.
 - 6c 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.
 - 6d 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.

- 6e 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.
- 6f Click *OK*.
- 7 (Conditional) If you have any additional closest server rules configured, remove the first Primary Server from the rules.
 - 7a In ZENworks Control Center, click the *Configuration* tab.
 - 7b In the Management Zone Settings panel, click *Infrastructure Management > Closest Server Rules*.
 - 7c Select a closest server rule, then click *Edit*.
The Rule Construction dialog box is displayed.
 - 7d In the *Collection Servers* list, select the check box next to the first Primary Server, then click *Remove*.
 - 7e In the *Content Servers* list, select the check box next to the first Primary Server, then click *Remove*.
 - 7f In the *Configuration Servers* list, select the check box next to the first Primary Server, then click *Remove*.
 - 7g Click *OK* twice.
- 8 Refresh all the devices (Primary Servers, Satellites, and managed devices) in the Management Zone so that they get the new closest server rules.
- 9 (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:

- 9a Unregister the device from the Management Zone by running the following command:

```
zac unr -f
```

- 9b 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 11 Command Line Utilities Reference](#).

- 10 (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:

- 10a (Conditional) If you are using an external database, ensure that you have a reliable backup of the database.

- 10b 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.

10c Remove the database role from the first Primary Server:

10c1 Log into the database.

10c2 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';
```

10c3 In the SQL editor, execute the following SQL command:

```
commit;
```

10d 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 29.6, “Moving the Data from an Embedded Sybase Database to an External Sybase Database,”](#) on page 312.

External Sybase: For detailed information on how to move the data from one external Sybase database to another external Sybase database, see [Section 30.3, “Moving the Data from One External Sybase Database to another External Sybase Database,”](#) on page 332.

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 30.6, “Configuring the ZENworks Server to Point to the New MS SQL Database Containing Data Moved from Another MS SQL Database,”](#) on page 341.

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 30.7, “Configuring the ZENworks Server to Point to the New Oracle Database Containing Data Moved from Another Oracle Database,”](#) on page 342.

11 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 10.5, “Removing Satellites from the Server Hierarchy,”](#) on page 159.

12 (Conditional) If the first Primary Server has ZENworks Reporting Server installed, decommission ZENworks Reporting Server.

For detailed information on how to decommission an existing instance of ZENworks Reporting Server, see [“Performing a Backup of Reports before Decommissioning an Existing Instance of ZENworks Reporting Server”](#) in the *ZENworks 11 Reporting Server Installation Guide*.

13 (Conditional) On the second Primary Server, install ZENworks Reporting Server, and restore the reports that you backed-up in [Step 4 on page 362](#) by using the zman Report commands.

For detailed information on how to install ZENworks Reporting Server, see *ZENworks 11 Reporting Server Installation Guide*.

For detailed information about the zman Report Commands, view the zman man page (`man zman`) on the server or see [“zman\(1\)”](#) in *ZENworks 11 Command Line Utilities Reference*.

14 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 11 Command Line Utilities Reference*.

- 15 After ensuring that all the operations in the Management Zone are working as expected, uninstall ZENworks Reporting Server on the first Primary Server.
For detailed information on how to uninstall ZENworks Reporting Server, see “[Uninstalling ZENworks Reporting Server](#)” in the *ZENworks 11 Reporting Server Installation Guide*.
- 16 After ensuring that all the operations in the Management Zone are working as expected, uninstall ZENworks 11 on the first Primary Server.
For detailed information on how to uninstall ZENworks 11, see “[Uninstalling ZENworks Software](#)” in the *ZENworks 11 Server Installation Guide*.

33.2 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 11 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)

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 32.1, “Backing Up a ZENworks Server,”](#) on page 357.
- 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 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
- 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 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.
To take a backup of an external database, see the documentation for the database.
- 4 (Conditional) If the first Primary Server has ZENworks Reporting Server installed, take a reliable back-up of the reports by using the zman Report commands.
For detailed information about the zman Report Commands, view the zman man page (`man zman`) on the server or see “[zman\(1\)](#)” in *ZENworks 11 Command Line Utilities Reference*.
- 5 Stop all the ZENworks services on the Primary Server.
For detailed information on how to stop the ZENworks services on Windows, see [Section 9.1.3, “Stopping the ZENworks Services,”](#) on page 141. For detailed information on how to stop the ZENworks services on Linux, see [Section 9.2.3, “Stopping the ZENworks Services,”](#) on page 143

- 6 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.

- 7 Disconnect the device from the network.

- 8 Install ZENworks 11 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 11, see “[Installing the ZENworks Server](#)” in the *ZENworks 11 Server Installation Guide*.

- 9 (Conditional) If the old Primary Server has ZENworks Reporting Server installed, decommission ZENworks Reporting Server.

For detailed information on how to decommission an existing instance of ZENworks Reporting Server, see “[Performing a Backup of Reports before Decommissioning an Existing Instance of ZENworks Reporting Server](#)” in the *ZENworks 11 Reporting Server Installation Guide*.

- 10 (Conditional) On the new Primary Server, install ZENworks Reporting Server.

For detailed information on how to install ZENworks Reporting Server, see *ZENworks 11 Reporting Server Installation Guide*.

- 11 Do the following on the new Primary Server:

- 11a Restore the backed-up ZENworks Server.

For detailed information on how to restore the ZENworks Server, see [Section 32.2, “Restoring a ZENworks Server,”](#) on page 358.

- 11b (Conditional) Restore the backed-up database.

For detailed information on how to restore the internal ZENworks database, see [Section 29.4, “Restoring the Embedded Sybase SQL Anywhere Database,”](#) on page 306.

- 11c Restore the backed-up Certificate Authority.

For detailed information on how to restore the certificate authority, see [Section 32.4, “Restoring the Certificate Authority,”](#) on page 359.

- 11d 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
```

- 11e 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.

- 11f (Conditional) If you install ZENworks Reporting Server on the new Primary Server, restore the reports that you backed-up in [Step 4 on page 365](#) by using the `zman` Report commands.

For detailed information about the `zman` Report Commands, view the `zman` man page (`man zman`) on the server or see “[zman\(1\)](#)” in *ZENworks 11 Command Line Utilities Reference*.

- 12 Ensure that the new server is running correctly. Subsequently, uninstall ZENworks 11 from the old device.

For detailed information on how to uninstall ZENworks 11, see “[Uninstalling ZENworks Software](#)” in the *ZENworks 11 Server Installation Guide*.

34 Changing the IP Address or DNS Name of Primary Servers

If you want to change the IP address or DNS Name of a Primary Server after installing ZENworks 11, review the following sections:

- ♦ [Section 34.1, “Changing the IP Address of a Primary Server after Installing ZENworks 11,” on page 369](#)
- ♦ [Section 34.2, “Changing the DNS Name or the IP Address and DNS Name of a Primary Server after Installing ZENworks 11,” on page 370](#)

34.1 Changing the IP Address of a Primary Server after Installing ZENworks 11

If you want to change the IP address of the Primary Server after installing ZENworks 11, 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 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,” on page 359](#).
 - ♦ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,” on page 299](#).
- 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.

34.2 Changing the DNS Name or the IP Address and DNS Name of a Primary Server after Installing ZENworks 11

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 11, 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.

This scenario is supported only in a zone that is configured with external certificate.

- 1 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 back up the certificate authority, see [Section 32.3, "Backing Up the Certificate Authority,"](#) on page 359.
 - ♦ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, "Backing Up the Embedded Sybase SQL Anywhere Database,"](#) on page 299.
- 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 11 Server Installation Guide](#).
- 3 At the console prompt of a Primary Server, run the following command:


```
zman sacert Path_of_the_Primary_Server_in_ZENworks_Control_Center
Path_of_Primary_Server_Certificate
```

For more information about `zman`, view the `zman` man page (`man zman`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

This adds the certificate of the Primary Server that you specified in the command to the ZENworks database and certificate store.

NOTE: You must run the command for each device whose certificate you want to replace.

- 4 Refresh all the devices, including the Primary Servers, in the zone.

The Primary Server certificates that were imported in [Step 3](#) are sent to the devices as configuration data.

- 5 Import the root certificate of the new certificate authority into the trusted store on all the devices in the zone through the `zac cert-info` command. You can choose to execute the command in one of the following ways:

- ♦ Manually run the following command on each Primary Server and managed device in the zone:

```
zac cert-info certificate_file_path -u zone_administrator_username -p
zone_administrator_password
```

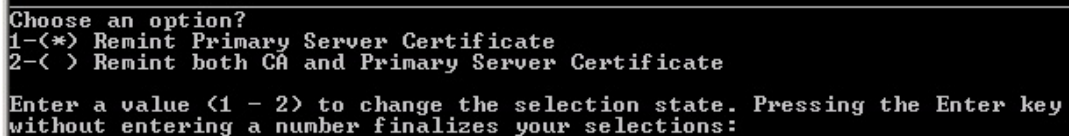
For more information about `zac`, view the `zac` man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- ♦ Use a ZENworks bundle.

For more information about bundles, see “[Creating Bundles](#)” in the [ZENworks 11 Software Distribution Reference](#).

- 6 Enforce the new certificates on the zone by running the following command on any Primary Server whose DNS name is changed:

```
novell-zenworks-configure -c SSL -Z
```



```
Choose an option?
1-(*) Remint Primary Server Certificate
2-( ) Remint both CA and Primary Server Certificate

Enter a value (1 - 2) to change the selection state. Pressing the Enter key
without entering a number finalizes your selections:
_
```

Follow the prompts. Do not remind the Certificate authority, just the server certificate.

- 7 Restart all the ZENworks services on all the Primary Servers in the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

- 8 Refresh all the devices, including the Primary Servers, in the zone.

If any device is not reachable during the refresh, you must first establish a connection with the device, then run the following command at the console prompt of each device to reestablish the trust between the device and the zone:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

- 9 Re-create all the default and custom deployment packages for all the Primary Servers:

- ♦ **Default Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

- ♦ **Custom Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks- configure -c RebuildCustomPacks -Z
```

- 10 Configure the Satellites with the new external certificates by entering the following command at the console prompt of each Satellite in the zone:

```
zac iac -pk private-key.der -c signed-server_certificate.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 -rc
```

For more information about zac, view the zac man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- 11 (Conditional) If your zone includes Intel AMT devices, unprovision and provision the devices.

For more information about unprovisioning and provisioning Intel AMT devices, see “[Configuring Intel AMT Devices in Enterprise Mode](#)” in the [ZENworks 11 Out-of-Band Management Reference](#).

35 Reconfiguring a Zone Certificate Before It Expires

ZENworks prompts you to change your ZENworks zone certificate 90 days before the expiration of the certificate. The following warning message is displayed for each administrator once every 24 hours after the administrator logs in to ZENworks Control Center:

The certificate on *hostname_of_the_device* will expire in *number_of_days* days.

The message is displayed for every server and zone whose certificate is about to expire.

If you do not change your zone certificate before it expires, the communication between Primary Servers and managed devices breaks down, and the managed devices fail to receive new assignments and policies. You should re-create the certificate before it expires because recreating a certificate after it expires is a very cumbersome process that involves performing manual tasks on each device in the zone.

The information provided in this section is applicable for Windows and Linux platforms.

To re-create the zone certificate before it expires, review the following scenarios:

- ◆ [Section 35.1, “Changing the Zone Certificate from Internal to External,” on page 373](#)
- ◆ [Section 35.2, “Replacing an Internal Server Certificate with a New Internal Server Certificate,” on page 375](#)
- ◆ [Section 35.3, “Replacing an External Server Certificate with a New External Server Certificate Issued by the Same Certificate Authority,” on page 376](#)
- ◆ [Section 35.4, “Replacing an External Server Certificate with a New External Server Certificate Issued by a Different Certificate Authority,” on page 377](#)
- ◆ [Section 35.5, “Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes,” on page 379](#)

IMPORTANT

ZENworks 11 currently does not support changing the external certificate to an internal certificate on Primary Servers.

35.1 Changing the Zone Certificate from Internal to External

To change your zone certificate from an internal certificate to an external certificate:

- 1 Take a reliable backup of the following on all 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
 - ♦ **Embedded Database:** For detailed information on how to take a backup of the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.
- 2 Create a server certificate for each Primary Server in the zone by providing the fully qualified DNS (FQDN) of the Primary Server as the subject.

For more information on how to create a CSR, see [“Creating an External Certificate”](#) in the [ZENworks 11 Server Installation Guide](#).

- 3 At the console prompt of a Primary Server, run the following command:

```
zman sacert Path_of_the_Primary_Server_in_ZENworks_Control_Center
Path_of_Primary_Server_Certificate
```

For more information about zman, view the zman man page (`man zman`) on the device or see [“zman\(1\)”](#) in the [ZENworks 11 Command Line Utilities Reference](#).

This adds the certificate of the Primary Server that you specified in the command to the ZENworks database and certificate store.

NOTE: You must run the command for each Primary Server whose certificate you want to replace.

- 4 Refresh all the devices, including the Primary Servers, in the zone.

The Primary Server certificates that were imported in [Step 3](#) are sent to the devices as configuration data.

- 5 Import the root certificate of the new certificate authority into the trusted store on all the devices in the zone through the `zac cert-info` command. You can choose to execute the command in one of the following ways:

- ♦ Manually run the following command on each Primary Server and managed device in the zone:

```
zac cert-info certificate_file_path -u zone_administrator_username -p
zone_administrator_password
```

For more information about zac, view the zac man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- ♦ Use a ZENworks bundle.

For more information about bundles, see [“Creating Bundles”](#) in the [ZENworks 11 Software Distribution Reference](#).

- 6 Enforce the new certificates on the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c SSL -Z
```

Follow the prompts.

- 7 Restart all the ZENworks services on all the Primary Servers in the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

- 8 Refresh all the devices, including the Primary Servers, in the zone.

If any device is not reachable during the refresh, you must first establish a connection with the device, then run the following command at the console prompt of each device to reestablish the trust between the device and the zone:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

9 Re-create all the default and custom deployment packages for all the Primary Servers:

- ◆ **Default Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

- ◆ **Custom Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c RebuildCustomPacks -Z
```

10 Configure the Satellites with the new external certificates by entering the following command at the console prompt of each Satellite in the zone:

```
zac iac -pk private-key.der -c signed-server_certificate.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 -rc
```

For more information about `zac`, view the `zac` man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

11 (Conditional) If your zone includes Intel AMT devices, unprovision and provision the devices.

For more information about unprovisioning and provisioning Intel AMT devices, see “[Configuring Intel AMT Devices in Enterprise Mode](#)” in the [ZENworks 11 Out-of-Band Management Reference](#).

NOTE: Because ZENworks and ZENworks Reporting Server use the same certificate, the ZENworks Reporting Server Tomcat server must be configured when the ZENworks certificate is changed. For information on how to configure the ZENworks Reporting Server, see [Section 35.5, “Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes,”](#) on page 379.

35.2 Replacing an Internal Server Certificate with a New Internal Server Certificate

If the internal server certificate of your Windows or Linux Primary Server has expired or if the server certificate key pair has been compromised, you can choose to replace the certificate with a new internal server certificate.

1 Before replacing an internal server certificate with a new internal server certificate, take a reliable backup of the following on all 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
- ◆ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.

2 Reconfigure the certificate on the Primary Server whose certificate has expired by entering the following command at the server’s command prompt:

```
novell-zenworks-configure -c SSL -Z
```


Follow the prompts.

- 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 Reestablish the certificate trust on all the devices registered to the Primary Server whose certificate has expired by running the following command on all of the devices:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

For more information about `zac`, view the `zac` man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- 5 (Conditional) If your zone includes Intel AMT devices, unprovision and provision the devices.

For more information about unprovisioning and provisioning Intel AMT devices, see “[Configuring Intel AMT Devices in Enterprise Mode](#)” in the [ZENworks 11 Out-of-Band Management Reference](#).

NOTE: Because ZENworks and ZENworks Reporting Server use the same certificate, the ZENworks Reporting Server Tomcat server must be configured when the ZENworks certificate is changed. For information on how to configure the ZENworks Reporting Server, see [Section 35.5, “Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes,”](#) on page 379.

35.3 Replacing an External Server Certificate with a New External Server Certificate Issued by the Same Certificate Authority

- 1 Before replacing an external server certificate with a new external server certificate that is issued by the same certificate authority, take a reliable backup of the following on all 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
- ♦ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.

- 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 11 Server Installation Guide](#).

- 3 At the console prompt of a Primary Server, run the following command:

```
zman sacert Path_of_the_Primary_Server_in_ZENworks_Control_Center  
Path_of_Primary_Server_Certificate
```

For more information about `zman`, view the `zman` man page (`man zman`) on the device or see “[zman\(1\)](#)” in the [ZENworks 11 Command Line Utilities Reference](#).

This adds the certificate of the Primary Server that you specified in the command to the ZENworks database and certificate store.

NOTE: You must run the command for each device whose certificate you want to replace.

- 4 Refresh all the devices, including the Primary Servers, in the zone.

The Primary Server certificates that were imported in [Step 3](#) are sent to the devices as configuration data.

- 5 Enforce the new certificates on the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c SSL -Z
```

Follow the prompts.

- 6 Restart all the ZENworks services on all the Primary Servers in the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

- 7 Refresh all the devices, including the Primary Servers, in the zone.

If any device is not reachable during the refresh, you must first establish a connection with the device, then run the following command at the console prompt of each device to reestablish the trust between the device and the zone:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

- 8 Re-create all the default and custom deployment packages for all the Primary Servers:

- ♦ **Default Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

- ♦ **Custom Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c RebuildCustomPacks -Z
```

NOTE: Because ZENworks and ZENworks Reporting Server use the same certificate, the ZENworks Reporting Server Tomcat server must be configured when the ZENworks certificate is changed. For information on how to configure the ZENworks Reporting Server, see [Section 35.5, "Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes,"](#) on page 379.

35.4 Replacing an External Server Certificate with a New External Server Certificate Issued by a Different Certificate Authority

- 1 If you want to change your zone certificate authority, take a reliable backup of the following on all 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
 - ♦ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.
- 2 Create a server certificate by using the new certificate authority for each Primary Server in the zone by providing the fully qualified DNS (FQDN) of the Primary Server as the subject.
- For more information on how to create a CSR, see [“Creating an External Certificate”](#) in the [ZENworks 11 Server Installation Guide](#).

- 3 At the console prompt of a Primary Server, run the following command:

```
zman sacert Path_of_the_Primary_Server_in_ZENworks_Control_Center
Path_of_Primary_Server_Certificate
```

For more information about zman, view the zman man page (`man zman`) on the device or see [“zman\(1\)”](#) in the [ZENworks 11 Command Line Utilities Reference](#).

This adds the certificate of the Primary Server that you specified in the command to the ZENworks database and certificate store.

NOTE: You must run the command for each Primary Server whose certificate you want to replace.

- 4 Refresh all the devices, including the Primary Servers, in the zone.

The Primary Server certificates that were imported in [Step 3](#) are sent to the devices as configuration data.

- 5 Import the root certificate of the new certificate authority into the trusted store on all the devices in the zone through the `zac cert-info` command. You can choose to execute the command in one of the following ways:

- ♦ Manually run the following command on each Primary Server and managed device in the zone:

```
zac cert-info certificate_file_path -u zone_administrator_username -p
zone_administrator_password
```

For more information about zac, view the zac man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- ♦ Use a ZENworks bundle.

For more information about bundles, see [“Creating Bundles”](#) in the [ZENworks 11 Software Distribution Reference](#).

- 6 Enforce the new certificates on the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c SSL -Z
```

Follow the prompts.

- 7 Restart all the ZENworks services on all the Primary Servers in the zone by running the following command at the console prompt of each Primary Server in the zone:

```
novell-zenworks-configure -c Start
```

By default, all the services are selected. You must select *Restart* as the *Action*.

- 8 Refresh all the devices, including the Primary Servers, in the zone.

If any device is not reachable during the refresh, you must first establish a connection with the device, then run the following command at the console prompt of each device to reestablish the trust between the device and the zone:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

- 9 Re-create all the default and custom deployment packages for all the Primary Servers:

- ♦ **Default Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c CreateExtractorPacks -Z
```

- ♦ **Custom Deployment Packages:** At the console prompt of each Primary Server in the zone, enter the following command:

```
novell-zenworks-configure -c RebuildCustomPacks -Z
```

- 10 Configure the Satellites with the new external certificates by entering the following command at the Satellite's prompt:

```
zac iac -pk private-key.der -c signed-server_certificate.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 -rc
```

For more information about `zac`, view the `zac` man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- 11 (Conditional) If your zone includes Intel AMT devices, unprovision and provision the devices.

For more information about unprovisioning and provisioning Intel AMT devices, see “[Configuring Intel AMT Devices in Enterprise Mode](#)” in the [ZENworks 11 Out-of-Band Management Reference](#).

NOTE: Because ZENworks and ZENworks Reporting Server use the same certificate, the ZENworks Reporting Server Tomcat server must be configured when the ZENworks certificate is changed. For information on how to configure the ZENworks Reporting Server, see [Section 35.5, “Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes,”](#) on page 379.

35.5 Configuring the ZENworks Reporting Server Tomcat Server When the ZENworks Certificate Changes

ZENworks and ZENworks Reporting Server use the same SSL certificate. When the ZENworks certificate is changed, the ZENworks Reporting Server Tomcat server must be configured for the newly added certificate.

- 1 Stop the ZENworks Reporting Server Tomcat server.
- 2 Open the `server.xml` file from the following location:
 - On Windows:** `%zenworks_home%\share\tomcat\conf`
 - On Linux:** `/opt/novell/zenworks/share/tomcat/conf`
- 3 In the `server.xml` file, navigate to the section where SSL port 443 is configured and make note of the value of the `keystorePass` attribute.
- 4 Open the `server.xml` file from the following location:
 - On Windows:** `%zenworks_home%\share\boe\Tomcat55\conf\`
 - On Linux:** `/opt/novell/zenworks/share/boe/bobje/tomcat/conf`
- 5 Backup the `server.xml` file in a temporary location.
- 6 In the `server.xml` file, in the section where SSL port 8443 is configured, change the value of the `keystorePass` attribute to the value copied in the notepad, in [Step 3](#).

- 7 Save the `server.xml` file.
- 8 Start the ZENworks Reporting Server Tomcat server.

36 Reconfiguring a Zone Certificate After It Expires

ZENworks prompts you to change your ZENworks zone certificate 90 days before the expiration of the certificate. The following warning message is displayed for each administrator once every 24 hours when the administrator logs in to ZENworks Control Center:

The certificate on *hostname_of_the_device* will expire in *number_of_days* days.

The message is displayed for every server and zone whose certificate is about to expire.

If you do not change your zone certificate before it expires, the communication between Primary Servers and managed devices breaks down, and the managed devices fail to receive new assignments and policies. To reestablish the communication, you have to re-create the certificate. ZENworks allows you to re-create the certificates in the following scenarios:

- ◆ Changing the zone certificate from internal to external
- ◆ Replacing an internal server certificate with a new internal server certificate
- ◆ Replacing an external server certificate with a new external server certificate issued by the same certificate authority
- ◆ Replacing an external server certificate with a new external server certificate issued by a different certificate authority

You use the same procedure to re-create the certificates in all the scenarios.

The information provided in this section is applicable for Windows and Linux platforms.

IMPORTANT: ZENworks 11 currently does not support changing the external certificate to an internal certificate on Primary Servers.

To replace a zone certificate after it expires:

- 1 Before replacing an internal server certificate with a new internal server 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 back up the certificate authority, see [Section 32.3, “Backing Up the Certificate Authority,”](#) on page 359.
 - ◆ **Embedded Database:** For detailed information on how to back up the embedded database, see [Section 29.3, “Backing Up the Embedded Sybase SQL Anywhere Database,”](#) on page 299.
- 2 Reconfigure the certificate on the Primary Server whose certificate has expired by entering the following command at the server’s command prompt:

```
novell-zenworks-configure -c SSL -Z
```

Follow the prompts.

- 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 Reestablish the certificate trust on all the devices registered to the Primary Server whose certificate has expired by running the following command on all such devices, including the Primary Server:

```
zac retr -u zone_administrator_username -p zone_administrator_password
```

For more information about `zac`, view the `zac` man page (`man zac`) on the device or see the [ZENworks 11 Command Line Utilities Reference](#).

- 5 (Conditional) If your zone includes Intel AMT devices, unprovision and provision the devices.

For more information about unprovisioning and provisioning Intel AMT devices, see “[Configuring Intel AMT Devices in Enterprise Mode](#)” in the [ZENworks 11 Out-of-Band Management Reference](#).

VII Zone Administration

This section contains information about Management Zone settings that let you control a wide range of functionality for your Zone.

- ◆ [Chapter 37, “Management Zone Settings,” on page 385](#)

37 Management Zone Settings

The Management Zone settings enable you to control a wide range of functionality for your Zone. There are Content settings that let you control when content can be distributed to devices and how often content is replicated between ZENworks Servers (if you have multiple servers). 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 settings are grouped into categories:

- ◆ [Section 37.1, “Accessing Configuration Settings,” on page 385](#)
- ◆ [Section 37.2, “Content Settings,” on page 387](#)
- ◆ [Section 37.3, “Device Management Settings,” on page 387](#)
- ◆ [Section 37.4, “Discovery and Deployment Settings,” on page 389](#)
- ◆ [Section 37.5, “Event and Messaging Settings,” on page 389](#)
- ◆ [Section 37.6, “Infrastructure Management Settings,” on page 389](#)
- ◆ [Section 37.7, “Inventory Settings,” on page 390](#)
- ◆ [Section 37.8, “Reporting Services Settings,” on page 391](#)
- ◆ [Section 37.9, “Asset Management Settings,” on page 391](#)
- ◆ [Section 37.10, “Endpoint Security Management Settings,” on page 392](#)
- ◆ [Section 37.11, “Patch Management Settings,” on page 392](#)

37.1 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 37.1.1, “Modifying Configuration Settings at the Zone,” on page 385](#)
- ◆ [Section 37.1.2, “Modifying Configuration Settings on a Folder,” on page 386](#)
- ◆ [Section 37.1.3, “Modifying Configuration Settings on a Device,” on page 387](#)

37.1.1 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 (*Content, 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:

- ◆ “Content Settings” on page 387
- ◆ “Device Management Settings” on page 387
- ◆ “Discovery and Deployment Settings” on page 389
- ◆ “Event and Messaging Settings” on page 389
- ◆ “Infrastructure Management Settings” on page 389
- ◆ “Inventory Settings” on page 390
- ◆ “Reporting Services Settings” on page 391
- ◆ “Asset Management Settings” on page 391
- ◆ “Patch Management Settings” on page 392

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.

By default, Management Zone settings are cached on the ZENworks Server and the cache is updated every 10 minutes. Because of this, if a change is made to a zone setting, devices don't receive the changes until the next cache update, which might be as long as 10 minutes.

If you change any of these settings and you want to apply them immediately to a device, you must use the `zac` command line utility on the device to bypass the ZENworks Server cache and retrieve the new settings. To do so, run the following command on the device:

```
zac ref general bypasscache
```

37.1.2 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 (*Content*, *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:

- ◆ “Content Settings” on page 387
- ◆ “Device Management Settings” on page 387
- ◆ “Discovery and Deployment Settings” on page 389
- ◆ “Event and Messaging Settings” on page 389
- ◆ “Infrastructure Management Settings” on page 389
- ◆ “Inventory Settings” on page 390
- ◆ “Reporting Services Settings” on page 391

- ♦ “Asset Management Settings” on page 391
 - ♦ “Patch Management Settings” on page 392
- 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.

37.1.3 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 (*Content*, *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:

- ♦ “Content Settings” on page 387
 - ♦ “Device Management Settings” on page 387
 - ♦ “Discovery and Deployment Settings” on page 389
 - ♦ “Event and Messaging Settings” on page 389
 - ♦ “Infrastructure Management Settings” on page 389
 - ♦ “Inventory Settings” on page 390
 - ♦ “Reporting Services Settings” on page 391
 - ♦ “Asset Management Settings” on page 391
 - ♦ “Patch Management Settings” on page 392
- 8 When you have finished modifying the setting, click *OK* (or *Apply*) to save your changes.

37.2 Content Settings

The Content section contains the following settings:

Content Blackout Schedule: Define times when content (bundles, policies, configuration settings, and so forth) is not delivered to devices. For more information, see [Content Blackout Schedule \(../resources/help/settings_sysreplication.html\)](#).

Content Replication: Determine how often content (bundle and policy files) is updated on the ZENworks Primary Servers and Satellites. For more information, see [Content Replication \(../resources/help/settings_contentreplication.html\)](#).

37.3 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 bundle, policy, configuration, and registration 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 \(../resources/help/settings_sysrefreshsched_refreshsched.html\)](#).

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 \(../resources/help/settings_agent.html\)](#).

System Update Agent: Configure System Update behavior on ZENworks Agents. For more information, see [System Update Agent \(../resources/help/settings_systemupdateagent.html\)](#).

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 \(../resources/help/settings_registration.html\)](#).

ZENworks Explorer Configuration: Configure common settings for ZENworks Explorer component of the ZENworks Adaptive Agent. You can select whether or not you want a bundle to be uninstalled after it is no longer assigned to a device or the device's user. You can also rename the default folder in Windows Explorer, on the Start menu, and in the ZENworks Window where all bundles are placed. For more information, see [ZENworks Explorer Configuration \(../resources/help/settings_applicationbundles.html\)](#).

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 \(../resources/help/settings_systemvariables.html\)](#).

Preboot Services: Configure settings for devices that use Preboot Services. For more information, see [Preboot Services \(../resources/help/settings_sysimaging.html\)](#).

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, this 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 \(../resources/help/settings_wakeonlan.html\)](#).

Remote Management: Configure Remote Management settings, which are a set of rules that determine the behavior or the execution of the Remote Management service on the managed device. For more information, see [Remote Management \(../resources/help/settings_sysremotemanagement.html\)](#).

37.4 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 \(../resources/help/settings_winproxysettings.html\)](#).

Linux Proxy: Specify a managed Linux 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 Windows to offload discovery tasks that use Linux-specific discovery technology such as SSH and deployment tasks that involve Linux managed devices. For more information, see [Linux Proxy \(../resources/help/configuration_linuxproxy.html\)](#)

37.5 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 \(../resources/help/settings_smtpsettings.html\)](#).

37.6 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 ZENworks Configuration Management 10.2.x/10.3.x 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 \(../resources/help/settings_closestserverrules.html\)](#).

This page is applicable only for devices that have ZENworks 10 Configuration Management SP2/SP3 installed. The settings are disabled when you baseline your Management Zone to ZENworks 11.

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 \(../resources/help/settings_zenworksnews.html\)](#).

User Source Settings: Configures the settings related to user sources. For more information, see [User Source Settings \(../resources/help/settings_usersource.html\)](#)

Subscription Settings: Configures the settings for subscriptions. For more information, see [Subscription Settings \(../resources/help/settings_subscriptions.html\)](#).

Novell Customer Center: Configures Novell Customer Center update schedule and other parameters. For more information, see [Novell Customer Center \(../resources/help/ncc_page.html\)](#).

YUM Service Settings: Configures the YUM Service Refresh Schedule. For more information, see [YUM Service Settings \(../resources/help/yumsvcssettings.html\)](#).

37.7 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 \(../resources/help/settings_sysinventoryreconcile.html\)](#).

37.8 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 \(../resources/help/cfg_report_ftpsrvrsettings.html\)](#).

37.9 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 \(../resources/help/am_usagedisplay.html\)](#).

37.10 Endpoint Security Management Settings

The Endpoint Security Management section contains the following settings:

Zone Policy Settings: Specify the default security policies that the ZENworks Adaptive Agent uses when no other policies settings are available. For more information, see [Zone Policy Settings \(../resources/help/settings_enterprise_policy.html\)](#).

Endpoint Security Reporting Settings: Configure how often effective policy reports are uploaded from the Endpoint Security Agent to the ZENworks Server. For more information, see [Endpoint Security Reporting Settings \(../resources/help/settings_zesm_reporting.html\)](#).

37.11 Patch Management Settings

The Patch Management section contains the following settings:

Subscription Service Information: Display information about your subscription, including the status. You can also update your subscription settings. For more information, see [Subscription Service Information \(../resources/help/b9f74z9.html\)](#).

Configure HTTP Proxy: Configure an HTTP proxy for access to Internet patch subscription. The HTTP proxy server allows ZENworks Patch Management Services to download subscription service over the Internet. For more information, see [Configure HTTP Proxy \(../resources/help/b9f9hi0.html\)](#).

Subscription Download: Configure the subscription download options for the ZENworks Primary Server. For more information, see [Subscription Download \(../resources/help/b9fa3i3.html\)](#).

Patch Subscription Credentials: Specify network credentials to authenticate download and installation of patches for Linux subscription providers, such as RedHat and SUSE. For more information, see [Patch Subscription Credentials \(../resources/help/bqxenp9.html\)](#).

Mandatory Baseline Settings: Configure the deployment of mandatory baseline patches. For more information, see [Mandatory Baseline Settings \(../resources/help/bn44sru.html\)](#).

Email Notification: Set up the e-mail notification options when the Patch Management Server detects a new patch. For more information, see [Email Notification \(../resources/help/bp967sb.html\)](#).

Dashboard and Trending: Configure the patch Dashboard and trending information for the Patch Management Server. For more information, see [Dashboard and Trending \(../resources/help/bp98id2.html\)](#).

A Support for L4 Switches

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.

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.

For pull deployment in ZENworks 11 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.

The following table lists supported and unsupported scenarios if L4 switching is used in ZENworks 11:

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 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 11 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.

B Registry Keys

NOTE: For updated list of Registry Keys refer to [ZENworks 11 SP2 Registry Keys Reference](#).

C Schedule Types

You can schedule to run ZENworks components based on your requirements. The following schedules are available:


- ◆ Section C.1, “Date Specific,” on page 397
- ◆ Section C.2, “Event,” on page 398
- ◆ Section C.3, “Now,” on page 399
- ◆ Section C.4, “Recurring,” on page 399

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

The screenshot shows a configuration window for a "Date Specific" schedule. At the top, a dropdown menu is set to "Date Specific". Below this is a "Start Date(s)" field with a calendar icon. There are two checkboxes: "Run event every year" and "Process immediately if device unable to execute on schedule". Underneath, there are two radio buttons for "Select when schedule execution should start": "Start immediately at Start Time" (selected) and "Start at a random time between Start and End Times". Below the radio buttons are "Start Time" and "End Time" fields, each with hour, minute, and AM/PM dropdowns. A checkbox for "Use Coordinated Universal Time (Current UTC 11:46 PM)" is also present. At the bottom of the window, there are three checkboxes: "Wake on Lan (Applies to Devices only)", "Install Immediately after Distribution", and "Launch Immediately after Installation". At the very bottom, there are three buttons: "<< Back", "Next >>", and "Cancel".

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.

Process Immediately if Device Unable to Execute on Schedule: For some reason, if the event does not run on the schedule you configured, to trigger the event immediately, select *Process immediately if device unable to execute on schedule*.

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). Recommended, if the management zone is across geographical locations. 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.

NOTE

- ♦ User management is supported only on Windows platforms.
 - ♦ Event Schedule type is not supported for Inventory Scans.
-

Figure C-2 Event Schedule

Schedule Type:

Select the event that this schedule should be triggered on:

- User Login
- User Logout
- Device Boot
- On Device Lock
- On Device Unlock
- ZENworks - Login
- ZENworks - Logout
- Device Connecting to Network (Windows Only)

Wake on Lan (Applies to Devices only)
 Install Immediately after Distribution
 Launch Immediately after Installation

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. This is not applicable if a user shuts down, or reboots the system.

Device Boot: The device powers on.

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 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

Schedule Type:
Recurring

When a device is refreshed
 Delay execution after refresh: 0 Days 0 Hours 0 Minutes

Days of the week
Sun Mon Tue Wed Thu Fri Sat

Start Time: 1 :00 am
[More Options](#)

Monthly
 Day of the month: 1
 Last day of the month
 First Sunday
Start Time: 1 :00 am
[More Options](#)

Fixed Interval
0 Months 0 Weeks 0 Days 0 Hours 0 Minutes
Start Date: 7/12/07 Start Time: 1 :00 am
[More Options](#)

Wake on Lan (Applies to Devices only)
 Install Immediately after Distribution
 Launch Immediately after Installation

<< Back Next >> Cancel

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:** For some reason, if the event does not run on the schedule you configured, to trigger the event immediately, select *Process immediately if device unable to execute on schedule*.
- ◆ **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Recommended, if the management zone is across geographical locations. 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:** For some reason, if the event does not run on the schedule you configured, to trigger the event immediately, select *Process immediately if device unable to execute on schedule*.
- ♦ **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Recommended, if the management zone is across geographical locations. 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:** For some reason, if the event does not run on the schedule you configured, to trigger the event immediately, select *Process immediately if device unable to execute on schedule*.
- ♦ **Use Coordinated Universal Time:** The Start Time is converted to Universal Coordinated Time (UTC). Recommended, if the management zone is across geographical locations. 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.

D Understanding Communication between ZENworks Components in Multi-Locale Environment

If you choose to run the ZENworks Primary Server, ZENworks Control Center, and ZENworks Adaptive Agent on operating systems with different locales, review the following points to understand the communication behavior between ZENworks components:

- ♦ ZENworks 11 extends support to the following languages:
 - ♦ Single-byte languages: English, French, German, Italian, Portuguese, and Spanish
 - ♦ Double-byte languages: Chinese-Traditional, Chinese-Simplified, and Japanese
- ♦ ZENworks Primary Server is language independent. It can render messages in all the languages supported by ZENworks.
- ♦ It is recommended to launch ZENworks Control Center in the same locale as the operating system locale of the management console.

For example, if the operating system locale of the management console is German, you must launch ZENworks Control Center in German.

You can choose to launch ZENworks Control Center in a locale different from the operating system of the management console only if the device has the necessary language support packs installed.

- ♦ ZENworks 11 uses UTF-8 encoding for ZENworks textual messages and local encoding for standard Windows messages. If ZENworks Control Center is launched in a locale that is different from the operating system locale of the ZENworks Adaptive Agent, the ZENworks messages that are sent by the agent are only translated and displayed in the ZENworks Control Center locale. The standard Windows messages are displayed in the operating system locale of the management console.

For example, assume that the operating system locale of the ZENworks Adaptive Agent is German and the operating system locale of the management console is French. If you choose to launch ZENworks Control Center in French, the ZENworks messages from the agent are displayed in French and not in German in ZENworks Control Center. The Windows messages sent from the agent are displayed in French.

- ♦ During Remote Management sessions and Remote Management operations that are triggered by the ZENworks Icon, all messages and user prompts are displayed on the managed device in the language of its operating system locale. During a Remote Management session, the keystrokes are translated according to the management console keyboard; the agent simulates the virtual key codes it receives from the viewer.

If the operating system locale of the managed device is a single-byte locale supported by ZENworks, you can choose to launch Remote Viewer in any single-byte locale supported by ZENworks. For example, if the locale of the operating system of the managed device is French, you can launch the Remote Viewer in any of the following locales: English, French, German, Italian, Portuguese, or Spanish.

If the operating system locale of the managed device is a double-byte locale supported by ZENworks, you must launch ZENworks Control Center in the same double-byte locale as the operating system locale of the management console, or in English. For example, if the locale of the operating system of the managed device is Japanese, you must launch the Remote Viewer in either Japanese or English.

Table D-1 *Supported Compatibility Matrix between the Operating System Locale of the Managed Device and ZENworks Control Center Locale*

Operating System Locale of the Managed Device	Remote Viewer Locale
English, French, German, Italian, Portuguese, or Spanish	English, French, German, Italian, Portuguese, or Spanish
Chinese-Simplified	Chinese-Simplified or English
Chinese-Traditional	Chinese-Traditional or English
Japanese	Japanese or English

E Special System Variables

The following sections contain information on the special system variables supported in Novell ZENworks Configuration Management:

- ♦ [Section E.1, “Windows Special System Variables,” on page 405](#)
- ♦ [Section E.2, “Login Script Special System Variables,” on page 410](#)
- ♦ [Section E.3, “Novell eDirectory Attribute Special System Variables,” on page 411](#)
- ♦ [Section E.4, “Microsoft Active Directory Attribute Special System Variables,” on page 414](#)
- ♦ [Section E.5, “Language Variable Special System Variables,” on page 416](#)

E.1 Windows Special System Variables

A Windows special system variable is one that defines the Windows directories. The typical paths listed below are based on default installations and might not match your specific setup.

Suppose that you have installed Windows to drive D: (for example, `D:\WINDOWS`). However, an application installation expects Windows to be on drive C: (for example, `C:\WINDOWS`). You can use the WinDisk system variable to substitute drive D: for the files that require it.

NOTE: For compatibility with traditional ZENworks, the system variable can also be specified in one of the following formats:

- ♦ `%system_variable%`
For example, `%ProgramFiles%`
- ♦ `;%*system_variable%`
For example, `;%*ProgramFiles%`
- ♦ `${system_variable}`
For example, `${ProgramFiles}`

Table E-1 Windows System Variables

Macro	Description
<code>\${AdminTools}</code>	<p>File system directory that contains the administrative tools that appear in the Control Panel when a specific user logs on to the device.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Start Menu\Programs\Administrative Tools</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Administrative Tools</code>.</p>

Macro	Description
<code>\${AllUsersProfile}</code>	<p>File system directory that contains common profile for all the users.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData</code>.</p>
<code>\${AppData}</code>	<p>File system directory that serves as a common repository for application-specific data.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Application Data</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming</code>.</p>
<code>\${CommonDesktop}</code>	<p>File system directory that contains files and folders that appear on the desktop for all users.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Desktop</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Public\Desktop</code>.</p>
<code>\${CommonPrograms}</code>	<p>File system directory that contains the directories for the common program groups that appear on the Start menu for all users.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Start Menu\Programs</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData\Microsoft\Windows\Start Menu\Programs</code>.</p>
<code>\${CommonStartMenu}</code>	<p>File system directory that contains the programs and folders that appear on the Start menu for all users.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Start Menu</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData\Microsoft\Windows\Start Menu</code>.</p>
<code>\${CommonStartup}</code>	<p>File system directory that contains the programs that appear in the Startup folder for all users. The system starts these programs whenever any user logs on.</p> <p>On a Windows Server 2003 or Windows XP device, typically this directory is <code>C:\Documents and Settings\All Users\Start Menu\Programs\Startup</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, typically this directory is <code>C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Startup</code>.</p>

Macro	Description
<p> <code>\$(CommonAdminTools)</code> </p>	<p>File system directory that contains the administrative tools that appear in the Control Panel for all users who logs in to the device.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Start Menu\Programs\Administrative Tools</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Administrative Tools</code>.</p>
<p> <code>\$(CommonAppData)</code> </p>	<p>File system directory that contains the application-specific data for all users who logs in to the device.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Application Data</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData</code>.</p>
<p> <code>\$(CommonDocuments)</code> </p>	<p>File system directory that contains the documents shared by all users who log in to the device.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Documents</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Public\Documents</code>.</p>
<p> <code>\$(CommonProgramFiles)</code> </p>	<p>File system directory that contains the program files shared by multiple applications.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Program Files\Common Files</code>.</p>
<p> <code>\$(CommonTemplates)</code> </p>	<p>File system directory that contains the document templates shared by all users who log in to the device.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\All Users\Templates</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData\Microsoft\Windows\Templates</code>.</p>
<p> <code>\$(Cookies)</code> </p>	<p>Files system directory that contains the user's cookies.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Cookies</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Cookies</code>.</p>
<p> <code>\$(Desktop)</code> </p>	<p>File system directory used to physically store file objects on the desktop (not the desktop folder itself).</p> <p>On a Windows Server 2003 or Windows XP device, typically this directory is <code>C:\Documents and Settings\Username\Desktop</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, typically this directory is <code>C:\Users\Username\Desktop</code>.</p>

Macro	Description
<code>\${Favorites}</code>	<p>File system directory that serves as a common repository for the user's favorite items.</p> <p>On a Windows Server 2003 or Windows XP device, typically this directory is <code>C:\Documents and Settings\Username\Favorites</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, typically this directory is <code>C:\Users\Username\Favorites</code>.</p>
<code>\${Fonts}</code>	<p>Virtual folder containing fonts. Typically <code>C:\Windows\Fonts</code>.</p>
<code>\${History}</code>	<p>File system directory that contains the user's history of visited Internet addresses.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Local Settings\History</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Local\Microsoft\Windows\History</code>.</p>
<code>\${LocalAppData}</code>	<p>File system directory that serves as a common repository for application-specific data.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically, <code>C:\Users\Username\AppData\Local</code>.</p>
<code>\${MyPictures}</code>	<p>File system directory that contains a specific user's graphics files.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>c:\Documents and Settings\Username\My Documents\My Pictures</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>c:\Users\Username\Pictures</code>.</p>
<code>\${NetHood}</code>	<p>File system directory containing objects that appear in the network neighborhood.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\NetHood</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\Roaming\Microsoft\Windows\Network Shortcuts</code>.</p>
<code>\${Personal}</code>	<p>File system directory that serves as a common repository for documents.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\My Documents</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\Documents</code>.</p>
<code>\${PrintHood}</code>	<p>File system directory that serves as a common repository for printer links.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\PrintHood</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Printer Shortcuts</code>.</p>

Macro	Description
<code>\${Programs}</code>	<p>File system directory that contains the user's program groups, which are also file system directories.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Start Menu\Programs</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Start Menu\Programs</code>.</p>
<code>\${ProgramData}</code>	<p>File system directory that contains the user's program groups, which are also file system directories.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\ProgramData</code>.</p>
<code>\${ProgramFiles}</code>	<p>File system directory that contains the user's program files on a 32-bit device or the user's 64-bit program files on a 64-bit device.</p> <p>Typically <code>C:\Program Files</code>.</p>
<code>\${ProgramFiles32}</code>	<p>File system directory that contains the user's 32-bit program files on a 64-bit device. Typically <code>C:\Program Files(x86)</code>.</p>
<code>\${ProgramFilesCommon}</code>	<p>File system directory that contains the program files shared by multiple applications. Typically <code>C:\Program Files\Common Files</code>.</p>
<code>\${Public}</code>	<p>File system directory that has public access to all the users on the network.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Public</code>.</p>
<code>\${Recent}</code>	<p>File system directory that contains the user's most recently used documents.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Recent</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Recent</code>.</p>
<code>\${SendTo}</code>	<p>File system directory that contains Send To menu items.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\SendTo</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\username\AppData\Roaming\Microsoft\Windows\SendTo</code>.</p>
<code>\${StartMenu}</code>	<p>File system directory containing <i>Start</i> menu items.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Start Menu</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Start Menu</code>.</p>

Macro	Description
<code>\${Startup}</code>	<p>File system directory that corresponds to the user's Startup program group.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Start Menu\Programs\Startup</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Startup</code>.</p>
<code>\${TempDir}</code>	<p>Windows temporary directory.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Local Settings\Temp</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Local\Temp</code>.</p>
<code>\${Templates}</code>	<p>File system directory that serves as a common repository for document templates.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Templates</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\AppData\Roaming\Microsoft\Windows\Templates</code>.</p>
<code>\${UserProfile}</code>	<p>File system directory that contains the logged-in user's profile.</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username</code>.</p>
<code>\${WinDesktop}</code>	<p>Windows desktop directory</p> <p>On a Windows Server 2003 or Windows XP device, it is typically <code>C:\Documents and Settings\Username\Desktop</code>.</p> <p>On a Windows Server 2008, Windows Vista, or Windows 7 device, it is typically <code>C:\Users\Username\Desktop</code>.</p>
<code>\${WinDir}</code>	Windows directory. Typically <code>C:\WINDOWS</code> .
<code>\${WinDisk}</code>	Drive letter (plus colon) for the Windows directory. Typically <code>C:</code> .
<code>\${WinSysDir}</code>	Windows system directory. Typically <code>C:\WINDOWS\system32</code> .
<code>\${WinSysDisk}</code>	Drive letter (plus colon) for the Windows system directory. Typically <code>C:</code> .

E.2 Login Script Special System Variables

NOTE: For compatibility with traditional ZENworks, the system variable can also be specified in one of the following formats:

- ♦ `%system_variable%`
- For example, `%MONTH%`
- ♦ `.*system_variable%`

For example, %*MONTH%

- ◆ `${system_variable}`

For example, `$(MONTH)`

The following table lists the supported login script special system variables:

Table E-2 Supported Login Script Special System Variables

Macro	Description
<code>\$(COMPUTER_NAME)</code>	The name of the computer. For example: work_pc.
<code>\$(DAY)</code>	Numeric day of the month. For example: 01, 10, 15.
<code>\$(HOUR24)</code>	Time of the day according to a 24-hour clock. For example: 02, 05, 14, 22.
<code>\$(HOUR)</code>	Hour of the day. For example: 0 = 12, 13 = 1.
<code>\$(LAST_NAME)</code>	Last name of the current user (also known as the user's eDirectory Surname attribute). For example: Jones.
<code>\$(MINUTE)</code>	Current minute. For example: 02, 59.
<code>\$(MONTH)</code>	Current month number. For example: 01 for January.
<code>\$(NDAY_OF_WEEK)</code>	Numeric day of the week. For example: 1 for Sunday, 2 for Monday.
<code>\$(NETWORK)</code>	Workstation network address. For example: 101.10.101.101
<code>\$(OS_VERSION)</code>	Version of the OS. For example: v5.00.
<code>\$(OS)</code>	OS type. For example: MSDOS, WIN98, WINNT, WIN2000, WINXP.
<code>\$(PLATFORM)</code>	Platform running. For example: WIN32NT.
<code>\$(PHYSICAL_STATION)</code>	MAC address. For example: 0000C04FD92ECA.
<code>\$(SECOND)</code>	Number of seconds. For example: 03, 54.
<code>\$(SHORT_YEAR)</code>	Short year number. For example: 97, 00.
<code>\$(WINVER)</code>	Windows version. For example: v3.11, v4.00.
<code>\$(YEAR)</code>	Full year number. For example: 2008.

E.3 Novell eDirectory Attribute Special System Variables

The ZENworks Application Window supports system variables that pull information from the attributes of the currently logged-in user.

The following sections explain the system variable syntax and provide examples:

- ◆ [Section E.3.1, "Syntax," on page 412](#)
- ◆ [Section E.3.2, "Examples," on page 412](#)
- ◆ [Section E.3.3, "Configuring the eDirectory Attribute Special System Variables," on page 413](#)

E.3.1 Syntax

eDirectory attribute system variables use the following syntax:

```
%eDirectory_attribute%
```

Table E-3 Special System Variable Syntax

Element	Description
%	Flags the text as a system variable. The entire system variable must be enclosed in% characters.
eDirectory_attribute	Defines the attribute to be read. You can use the ConsoleOne Schema Manager (available from the Tools menu) to view an eDirectory object's available attributes.

NOTE: For compatibility with traditional ZENworks, the special system variables can also be specified in one of the following formats:

- ♦ %system_variable%
For example, %CN%
- ♦ %*system_variable%
For example, %*CN%

E.3.2 Examples

The following table provides examples of eDirectory attribute system variables.

Table E-4 Special System Variable Examples

Macro	Description
%CN%	Returns the common name of the currently logged-in user.
%DN%	Returns the distinguished name of the currently logged-in user.
%Full Name%	Returns the full name of the currently logged-in user. This is the name defined in User object > General tab > Identification page > Full Name field.
%Given Name%	Returns the first name of the currently logged-in user. This is the name defined in User object > General tab > Identification page > Given Name field.
%Surname%	Returns the last name of the currently logged-in user. This is the name defined in the User object > General tab > Identification page > Last Name field.

The remaining system variables that are predefined by ZENworks are available in the following locations:

- ♦ **On Windows:** `ZENworks_Home/novell/zenworks/datamodel/authsource/edirectory-users.zls.xml`

- **On Linux:** `/etc/opt/novell/zenworks/datamodel/authsource/edirectory-users.zls.xml`

E.3.3 Configuring the eDirectory Attribute Special System Variables

To use eDirectory attributes as a reference in the bundle system variables, use the following procedures:

On the eDirectory Server

Define a name mapping between LDAP attribute types and eDirectory attribute definitions. You can log in to Novell iManager and click *Attribute Map* to do the mapping. For example, you can choose to map an eDirectory attribute named `GWMailID`, which stores the user e-mail id, to a Primary LDAP Attribute named `Mail`.

Only User attributes are supported.

For information on mapping the LDAP attribute types and eDirectory attribute, see Novell eDirectory Administration guide at the [Novell Documentation Website \(http://www.novell.com/documentation/\)](http://www.novell.com/documentation/).

On the ZENworks Server

- 1 Edit the sample file to create a file that contains the attribute that you want to use with ZENworks:
 - **On Windows:** `ZENworks_Home/novell/zenworks/datamodel/authsource/edirectory-users-additional.zls.xml.sample`
 - **On Linux:** `/etc/opt/novell/zenworks/datamodel/authsource/edirectory-users-additional.zls.xml.sample`
- 2 Add an entry for the attribute that you want to use with ZENworks. For example:


```
<attribute name="ZEN" ldapName="Mail"
builder="com.novell.zenworks.datamodel.session.jndi.builder.StringAttributeBuilder" />
```

Replace `ZEN` with the attribute that you want to use with ZENworks and replace `Mail` with the Primary LDAP Attribute that you mapped with the eDirectory attribute named `GWMailID`.

You must use the right builder, depending on whether the syntax is a string, integer, or Boolean. The `edirectory-users-additional.zls.xml.sample` file lists the different type of builders.
- 3 Save the sample file as `edirectory-users-additional.zls.xml`.
- 4 Replace the `edirectory-users-additional.zls.xml` file on all the Primary Servers in the Management Zone.
- 5 Restart the `zenserver` service.

Sample Scenario

Create a bundle with an action that references the macro and that runs in the user impersonation mode. For example:

1. Create a bundle with a Run Script action that references the special system variable, `#{ZEN}` and has the executable security level set to `Run as logged in user`.

2. Perform the bundle assignment.

When the action is executed on the managed device, the value of the LDAP attribute is substituted for the special system variable.

In the example, the email id stored in the `GWMailID` attribute is substituted for the special system variable, `${ZEN}`. Consequently, when the action is executed on the managed device, the e-mail ID stored in the `GWMailID` attribute is displayed on the device.

E.4 Microsoft Active Directory Attribute Special System Variables

The ZENworks Application Window supports special system variables that pull information from the attributes of the currently logged-in user.

The following sections explain the system variable syntax and provide examples:

- ◆ [Section E.4.1, “Syntax,” on page 414](#)
- ◆ [Section E.4.2, “Examples,” on page 414](#)
- ◆ [Section E.4.3, “Configuring the Active Directory Attribute Special System Variables,” on page 415](#)

E.4.1 Syntax

Active Directory attribute special system variables use the following syntax:

```
%active-directory_attribute%
```

Table E-5 Special System Variable Syntax

Element	Description
%	Flags the text as a system variable. The entire system variable must be enclosed in% characters.
active-directory_attribute	Defines the attribute to be read.

NOTE: For compatibility with traditional ZENworks, the special system variables can also be specified in one of the following formats:

- ◆ `%system_variable%`
For example, `%Street%`
- ◆ `%"*system_variable%"`
For example, `%"*Street%"`

E.4.2 Examples

The following table provides examples of Active Directory attribute system variables.

Table E-6 Special System Variable Examples

Special System Variables	Description
%CN%	Returns the common name of the currently logged-in user.
%OU%	Returns the organizational unit name for the currently logged-in user.
%Full Name%	Returns the full name of the currently logged-in user.
%Surname%	Returns the last name of the currently logged-in user.
%Street%	Returns the street address of the currently logged-in user.

The remaining special system variables that are predefined by ZENworks are available in the following locations:

- ♦ **On Windows:** `ZENworks_Home/novell/zenworks/datamodel/authsource/active-directory-users.zls.xml`
- ♦ **On Linux:** `/etc/opt/novell/zenworks/datamodel/authsource/active-directory-users.zls.xml`

E.4.3 Configuring the Active Directory Attribute Special System Variables

To use Active Directory attributes as a reference in the special system variables, use the following procedures:

On the Active Directory Server

To map existing or new attributes defined in the Active Directory schema, see the [Microsoft TechNet Library](http://technet.microsoft.com/en-us/library/cc961581.aspx) (<http://technet.microsoft.com/en-us/library/cc961581.aspx>).

On the ZENworks Server

- 1 Edit the sample file to create a file that contains the attribute that you want to use with ZENworks:
 - ♦ **On Windows:** `ZENworks_Home/novell/zenworks/datamodel/authsource/active-directory-users-additional.zls.xml.sample`
 - ♦ **On Linux:** `/etc/opt/novell/zenworks/datamodel/authsource/active-directory-users-additional.zls.xml.sample`
- 2 Add an entry for the attribute that you want to use with ZENworks. For example:

```
<attribute name="ZEN" ldapName="employeeID"
builder="com.novell.zenworks.datamodel.session.jndi.builder.StringAttributeBuilder" />
```

Replace `ZEN` with the attribute that you want to use with ZENworks and replace `EmployeeID` with the LDAP Display Name in Active Directory. If the Active Directory common name for this attribute is defined as `Employee-ID`, `ZEN` now maps to the attribute `Employee-ID`.

You must use the right builder, depending on whether the syntax is a string, integer, or Boolean. The `active-directory-users-additional.zls.xml.sample` file lists the different type of builders.

- 3 Save the sample file as `active-directory-users-additional.zls.xml`.
- 4 Replace the `active-directory-users-additional.zls.xml` file on all the Primary Servers in the Management Zone.
- 5 Restart the `zenserver` service.

Sample Scenario

Create a bundle with an action that references the special system variable and that runs in the user impersonation mode. For example:

1. Create a bundle with a Run Script action that references the special system variable `${ZEN}` and has the executable security level set to `Run as logged in user`.
2. Perform the bundle assignment.

When the action is executed on the managed device, the value of the LDAP attribute is substituted for the special system variable.

In the example, the employee id stored in the `Employee-ID` attribute is substituted for the special system variable, `${ZEN}`. Consequently, when the action is executed on the managed device, the employee ID stored in the `Employee-ID` attribute is displayed on the device.

E.5 Language Variable Special System Variables

To minimize the number of Application objects required to distribute the same application in different languages, you can use language variables to represent language-related information in MSI Application objects.

NOTE: For compatibility with traditional ZENworks, the special system variables can also be specified in one of the following formats:

- ♦ `%system_variable%`
For example, `%LOCALE_USER_LANG%`
 - ♦ `;%*system_variable%`
For example, `;%*LOCALE_USER_LANG%`
-

The following table describes the available language variables:

Table E-7 Language Variable Special System Variables

Language Variable	Description
<code>%LOCALE_SYS_DEFAULT_ANSI_CP%</code>	Retrieves the American National Standards Institute (ANSI) code page associated with the system locale. If the locale does not use an ANSI code page, the value is 0. Example: 1252
<code>%LOCALE_SYS_DEFAULT_OEM_CP%</code>	Retrieves the original equipment manufacturer (OEM) code page associated with the system locale. If the locale does not use an OEM code page, the value is 1. Example: 437

Language Variable	Description
%LOCALE_SYS_LANGID%	<p>Retrieves the language identifier for the system locale. The language identifier is a standard international numeric abbreviation for the language in a country or geographical region.</p> <p>Example: 0409</p>
%LOCALE_SYS_ABBR_LANG%	<p>Specifies the abbreviated name of the system language. In most cases, it is created by taking the two-letter language abbreviation from the International Organization for Standardization (ISO) Standard 639 and adding a third letter, as appropriate, to indicate the sub language.</p> <p>Example: ENU</p>
%LOCALE_SYS_ENG_LANG%	<p>Specifies the full English name of the system language from ISO Standard 639. This is always restricted to characters that can be mapped into the ASCII 127-character subset.</p> <p>Example: English</p>
%LOCALE_SYS_LANG%	<p>Specifies the full localized name of the system language. This name is based on the localization of the product and might vary for each localized version.</p> <p>Example: English (United States)</p>
%LOCALE_SYS_ISO639_LANG%	<p>Specifies the abbreviated name of the system language based only on ISO Standard 639.</p> <p>Example: en</p>
%LOCALE_SYS_NATIVE_LANG%	<p>Specifies the native name of the system language.</p> <p>Example: English</p>
%LOCALE_USER_DEFAULT_ANSI_CP%	<p>Retrieves the American National Standards Institute (ANSI) code page associated with the user locale. If the locale does not use an ANSI code page, the value is 0.</p> <p>Example: 1252</p>
%LOCALE_USER_DEFAULT_OEM_CP%	<p>Retrieves the original equipment manufacturer (OEM) code page associated with the user locale. If the locale does not use an OEM code page, the value is 1.</p> <p>Example: 850</p>
%LOCALE_USER_LANGID%	<p>Retrieves the language identifier for the user locale. The language identifier is a standard international numeric abbreviation for the language in a country or geographical region.</p> <p>Example: 0c09</p>

Language Variable	Description
%LOCALE_USER_ENG_LANG%	<p>Specifies the full English name of the user language from ISO Standard 639. This is always restricted to characters that can be mapped into the ASCII 127-character subset.</p> <p>Example: English</p>
%LOCALE_USER_LANG%	<p>Specifies the full localized name of the user language. This name is based on the localization of the product and might vary for each localized version.</p> <p>Example: English (Australia)</p>
%LOCALE_USER_ISO639_LANG%	<p>Specifies the abbreviated name of the user language based only on ISO Standard 639.</p> <p>Example: en</p>
%LOCALE_USER_NATIVE_LANG%	<p>Specifies the native name of the user language.</p> <p>Example: English</p>