

Novell Identity Manager Driver for GroupWise®

2.2.1

www.novell.com

IMPLEMENTATION GUIDE

August 24, 2006

N

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. Please refer to 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 © 2000-2006 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. has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <http://www.novell.com/company/legal/patents/> and one or more additional patents or pending patent applications in the U.S. and in other countries.

Novell, Inc.
404 Wyman Street, Suite 500
Waltham, MA 02451
U.S.A.
www.novell.com

Online Documentation: To access the online documentation for this and other Novell products, and to get updates, see www.novell.com/documentation.

Novell Trademarks

ConsoleOne is a registered trademark of Novell, Inc., in the United States and other countries.

eDirectory is a trademark of Novell, Inc.

GroupWise is a registered trademark of Novell, Inc., in the United States and other countries.

DirXML is a registered trademark of Novell, Inc., in the United States and other countries.

NetMail is a registered trademark of Novell, Inc., in the United States and other countries.

NetWare is a registered trademark of Novell, Inc., in the United States and other countries.

Novell is a registered trademark of Novell, Inc., in the United States and other countries.

Novell Client is a trademark of Novell, Inc.

SUSE is a registered trademark of Novell, Inc., in the United States and other countries.

Third-Party Materials

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

Contents

About This Guide	7
1 Introducing the Identity Manager Driver for GroupWise	9
1.1 New Features	9
1.1.1 Driver Features	9
1.1.2 Identity Manager Features	9
1.2 Driver Configuration	9
1.2.1 Entitlements	10
1.2.2 Password Synchronization Support	10
1.2.3 Supported Platforms	10
1.3 Methods for Managing GroupWise Accounts	10
1.4 Driver Components	11
1.4.1 GroupWise API	11
1.4.2 Driver Shim	11
1.4.3 Driver Configuration	11
1.5 Publisher Channel Issues	12
1.6 Subscriber Channel Issues	12
2 Installing and Configuring the Identity Manager Driver for GroupWise	13
2.1 Meeting the Requirements for the Driver	13
2.2 Planning for the Installation	13
2.2.1 Understanding a Local Installation	14
2.2.2 Understanding a Remote Installation	14
2.2.3 Configuring Driver Authentication	15
2.3 Installing the Driver	20
2.3.1 Importing the Driver Configuration File in Designer	20
2.3.2 Importing the Driver Configuration in iManager	20
2.3.3 Configuration Parameters	21
2.3.4 Viewing Driver Parameters	27
2.3.5 Modifying Global Configuration Values	27
2.3.6 Activating the Driver	30
2.4 Post-Installation Tasks	31
2.4.1 Installation on NetWare	31
2.4.2 Modifying Policies	31
2.4.3 Modifying Global Configuration Values	31
2.4.4 Starting the Driver	32
2.4.5 Verifying That the Driver is Working Properly	32
2.4.6 Migrating eDirectory Users to GroupWise	33
2.5 Additional Considerations	33
2.5.1 Using Anti-virus Software on a GroupWise System	34
2.5.2 Disabling the Driver	34
2.5.3 Partition Issues	34
2.5.4 Driver Access Rights and Membership	34
2.5.5 Synchronizing Group Objects	34
2.5.6 Synchronizing Distribution List Objects	34
2.5.7 Removing a GroupWise Account Using the GroupWise Snap-Ins	35
2.5.8 Re-associating a GroupWise Account with an eDirectory User	35
2.5.9 User Renames	35
2.5.10 Deleting Users and Accounts Using the GroupWise Snap-Ins	35

3	Using Policies and Filters	37
3.1	Using Policies	37
3.1.1	Default Driver Actions	37
3.1.2	Modifying Default Settings in Policies and the Filter	37
3.1.3	Understanding Global Configuration Values	38
3.2	Modifying Policies	39
3.2.1	Specifying the GroupWise Post Office	39
3.2.2	Specifying Distribution Lists	41
3.2.3	Setting Defaults for GroupWise Attributes	45
3.2.4	Configuring the GroupWise UserID	45
3.2.5	Creating Mappings for Additional Attributes	46
3.2.6	Getting a Record Count from a Query	46
3.2.7	Deleting the GroupWise User without Deleting the eDirectory User	47
3.2.8	Creating a GroupWise Nickname	47
3.2.9	Creating a GroupWise Nickname Record	47
3.2.10	Specifying a New Resource Owner on an Owner Delete	48
3.2.11	Specifying a New Resource Owner on an Owner Disable or Expire	49
3.2.12	Controlling Creation of GroupWise Accounts	50
3.2.13	Moving Users from One Post Office to Another Post Office	51
3.2.14	Adding Additional Attributes to Be Synchronized	52
3.2.15	Renaming Users	52
3.2.16	Creating a Gateway Alias	53
3.2.17	Querying for a Nickname	53
3.2.18	Querying for a Gateway Alias	56
3.2.19	Querying for Internet EMail Address	57
3.2.20	Synchronizing GroupWise External Users	57
3.2.21	Verifying an E-mail Address or Gateway Alias is Unique	60
3.2.22	Setting GroupWise Client Options with the Driver	61
4	Troubleshooting the Identity Manager Driver for GroupWise	65
4.1	Avoiding Data Corruption	65
4.2	Viewing Driver Errors in the DS Trace Screen	65
4.2.1	Understanding Error Text Descriptions	65
A	Documentation Updates	71
A.1	May 17, 2006	71
A.1.1	Using Policies and Filters	71
A.1.2	Installing and Configuring the Identity Manager Driver for GroupWise	71
A.1.3	Troubleshooting the Identity Manager Driver for GroupWise	72
A.2	May 9, 2006	72
A.2.1	Introducing the Identity Manager Driver for GroupWise	72
A.2.2	Installing and Configuring the Identity Manager Driver for GroupWise	72
A.3	March 8, 2006	74
A.3.1	Planning for the Installation	74
B	Class and Attribute Descriptions	75

About This Guide

The driver provides data integration between users in eDirectory™ and GroupWise®. For example, the driver can automatically create e-mail accounts when an employee is hired. The driver can also disable an e-mail account when a user is no longer active. This configurable solution gives organizations the ability to increase productivity and streamline business processes by integrating GroupWise and eDirectory.

The guide contains the following sections:

- ◆ Chapter 1, “Introducing the Identity Manager Driver for GroupWise,” on page 9
- ◆ Chapter 2, “Installing and Configuring the Identity Manager Driver for GroupWise,” on page 13
- ◆ Chapter 3, “Using Policies and Filters,” on page 37
- ◆ Chapter 4, “Troubleshooting the Identity Manager Driver for GroupWise,” on page 65
- ◆ Appendix B, “Class and Attribute Descriptions,” on page 75

Audience

This guide is for Novell® eDirectory, Identity Manager, and GroupWise administrators who are using the Identity Manager Driver for GroupWise.

Feedback

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

Documentation Updates

For the most recent version of this document, see the [Drivers Documentation Web site \(http://www.novell.com/documentation/lg/dirxml/drivers/index.html\)](http://www.novell.com/documentation/lg/dirxml/drivers/index.html)

Additional Documentation

For documentation on using Identity Manager and the other Identity Manager drivers, see the [Identity Manager Documentation Web site \(http://www.novell.com/documentation/lg/dirxml20\)](http://www.novell.com/documentation/lg/dirxml20).

Documentation Conventions

The term *driver* refers to all components of the Identity Manager Driver for GroupWise and not to any one particular component.

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

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

Introducing the Identity Manager Driver for GroupWise

1

The Identity Manager Driver for GroupWise® is designed to synchronize data between the Identity Vault and GroupWise, and to manage GroupWise accounts and account information. When a user or group in the Identity Vault is modified, created, renamed, moved, or deleted, the driver synchronizes the changes with the GroupWise accounts.

Because the Identity Vault is the authoritative data source, any data created, modified, renamed, and deleted in the Identity Vault synchronizes to GroupWise.

1.1 New Features

The following section contains information about the new driver features, as well as new features provided in Novell Identity Manager.

1.1.1 Driver Features

This version of the driver provides the following new functionality:

- ♦ GroupWise distribution lists can be synchronized. For more information, see [“Synchronizing Distribution List Objects” on page 34](#).
- ♦ Added a classification attribute that can be set to External for use with User, GroupWise Post Office, and GroupWise External Entity classes. For more information see [“Synchronizing GroupWise External Users” on page 57](#).
- ♦ Nicknames can be configured for Internet addressing (only functions with GroupWise 7). The attributes listed in the [Appendix B, “Class and Attribute Descriptions,” on page 75](#) can be added to nicknames.
- ♦ Added the ability to allow users to be added to Distribution Lists as carbon copy or blind copy users. For more information, see [“Adding a User as a Blind Copy or Carbon Copy participant to a Distribution List” on page 42](#).
- ♦ Added the ability to set GroupWise client options through the driver. For more information, see [“Setting GroupWise Client Options with the Driver” on page 61](#).

1.1.2 Identity Manager Features

For more information on the new features of Identity Manager, refer to the [Novell Identity Manager 3.0.1 Administration Guide](#).

1.2 Driver Configuration

The sections below contain information about the driver configuration options.

1.2.1 Entitlements

The sample driver configuration supports entitlements. If entitlements are enabled, the driver does the following actions by default:

- ◆ Adds User object accounts
- ◆ Removes User object accounts
- ◆ Adds members of the distribution list
- ◆ Removes members of the distribution list

1.2.2 Password Synchronization Support

The Subscriber channel sets the password. Passwords are not synchronized on the Publisher channel.

NOTE: The best practice is to configure GroupWise to authenticate against eDirectory™, in which case password synchronization is not required.

1.2.3 Supported Platforms

The GroupWise driver is supported on the following platforms:

- ◆ NetWare® 6.0 and NetWare 6.5 with the latest support packs
- ◆ Windows* 2000 and 2003 with the latest service packs
- ◆ SUSE® LINUX Enterprise Server 9

The GroupWise driver is compatible with the following versions of GroupWise:

- ◆ GroupWise 5.5 with the latest support packs
- ◆ GroupWise 6.0 with the latest support packs
- ◆ GroupWise 6.5 with the latest support packs
- ◆ GroupWise 7.0 with the latest support packs

IMPORTANT: The GroupWise binaries in the older drivers are not compatible with GroupWise 7.0 databases. Identity Manager 2.x driver with the patch `idm20xgwir3a.tgz` applied, is compatible with GroupWise 7.0 databases.

1.3 Methods for Managing GroupWise Accounts

Before the Identity Manager driver for GroupWise was developed, you managed GroupWise accounts in conjunction with eDirectory entirely with the ConsoleOne® GroupWise snap-ins. Now, you can also use the driver to manage certain components of GroupWise accounts. For instance, you can automatically provision new users from eDirectory or your HR system by using Identity Manager.

We recommend that you make account changes in eDirectory. You should use either iManager or ConsoleOne (without the GroupWise snap-ins) to administer users in eDirectory, then let the driver synchronize any changes into GroupWise.

Do not use the ConsoleOne GroupWise snap-ins, iManager tasks associated with GroupWise, or other GroupWise administration tools for anything the driver is configured to do. When you have the driver installed, if you manage GroupWise user accounts with the ConsoleOne GroupWise snap-ins or other tools, it results in redundant synchronization of data because data changes are synchronized by both the snap-ins and the driver. Redundant synchronization of data might result in warnings or errors in the Identity Manager logs. However, these warnings or errors can usually be ignored.

WARNING: If you create eDirectory users with ConsoleOne, be sure to use ConsoleOne with GroupWise 6.5 or above snap-ins installed. If you are using GroupWise 6.0 or older versions, do not use ConsoleOnes with the GroupWise snap-ins installed to create eDirectory users. The ConsoleOne snap-ins for the older GroupWise versions operate after the driver and remove some vital data from eDirectory.

You should use the GroupWise ConsoleOne snap-ins to manage these components of GroupWise accounts:

- ◆ GroupWise system-wide parameters, such as nickname expiration date
- ◆ X.400 information
- ◆ Resources
- ◆ Mailbox and library maintenance
- ◆ Client options and preferences
- ◆ Grafting (use caution)
- ◆ Backup and restore

1.4 Driver Components

The driver uses the following components:

- ◆ GroupWise API
- ◆ Driver shim
- ◆ Driver configuration

1.4.1 GroupWise API

This API is necessary for the driver to perform the required actions in GroupWise. It is installed together with the driver shim.

1.4.2 Driver Shim

A Java* driver shim is used to communicate between the Metadirectory engine and the GroupWise API. This driver shim is installed at the same time as the GroupWise API.

1.4.3 Driver Configuration

The XML driver configuration file contains all Identity Vault objects necessary for the driver, including the appropriate policies for adding, modifying, and deleting or disabling GroupWise accounts. In addition, the driver configuration file controls the information being sent from the

Identity Vault to GroupWise. The driver configuration file should be installed to the computer where your management tool (iManager) resides.

1.5 Publisher Channel Issues

The driver filter specifies the classes and attributes that GroupWise publishes to eDirectory. We do not recommend making changes to the driver filter regarding which attributes are published to eDirectory. If the filter is changed, it can cause objects not to synchronize correctly.

1.6 Subscriber Channel Issues

GroupWise accounts are administered through eDirectory. Driver customizations are usually done in the Subscriber channel or at the driver level. The Subscriber channel receives commands from the Metadirectory engine and executes those commands in GroupWise. The Subscriber channel is used to synchronize eDirectory events with GroupWise. It watches for additions, modifications, renames, moves, and deletes in eDirectory and creates events in GroupWise to reflect those changes.

You can add to the base configuration that comes with the driver. However, do not remove or modify preconfigured attributes from the Subscriber filter or the Mapping policy.

Installing and Configuring the Identity Manager Driver for GroupWise

- ◆ [Section 2.1, “Meeting the Requirements for the Driver,” on page 13](#)
- ◆ [Section 2.2, “Planning for the Installation,” on page 13](#)
- ◆ [Section 2.3, “Installing the Driver,” on page 20](#)
- ◆ [Section 2.4, “Post-Installation Tasks,” on page 31](#)
- ◆ [Section 2.5, “Additional Considerations,” on page 33](#)

2.1 Meeting the Requirements for the Driver

The Identity Manager Driver for GroupWise[®] has the following software requirements:

- Novell Identity Manager 3.0.1 and its prerequisites, as listed in the “[Installing Identity Manager](#)” section in the *Identity Manager 3.0.1 Installation Guide*.
- Novell Client™ 4.9 or later for Windows 2000
- GroupWise 7

You can use earlier versions of GroupWise, but some new features might not be supported in earlier releases.

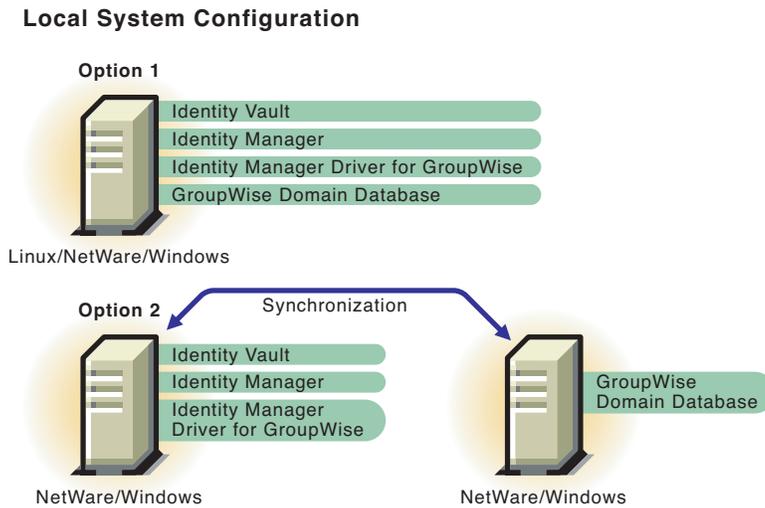
2.2 Planning for the Installation

Before you install and use the driver, you must plan a local or remote installation and define user accounts for GroupWise driver access. The GroupWise driver provisions accounts between the Identity Vault and GroupWise. The driver can connect to a secondary GroupWise domain, but Novell recommends that the GroupWise driver connects to the primary GroupWise domain.

- ◆ [Section 2.2.1, “Understanding a Local Installation,” on page 14](#)
- ◆ [Section 2.2.2, “Understanding a Remote Installation,” on page 14](#)
- ◆ [Section 2.2.3, “Configuring Driver Authentication,” on page 15](#)

2.2.1 Understanding a Local Installation

Figure 2-1 Local System Configuration



A local installation installs the driver on the same Windows, Linux, or NetWare® computer where you installed Identity Manager and eDirectory™. The GroupWise domain database can either be on the same computer or a different computer.

If Identity Manager is installed on one NetWare server and the GroupWise domain database is on another NetWare servers, these server must be installed in the same eDirectory tree.

Table 2-1 Installation Configurations Options

If . . .	Then . . .
The GroupWise driver is running on a NetWare server. . .	The GroupWise server (domain database) must also exist on NetWare. The GroupWise database can be installed on the same NetWare server as Identity Manager or on another NetWare server.
The GroupWise driver is running on a Linux server. . .	The GroupWise domain must be on the same server. The GroupWise database can be installed on the same Linux server as Identity Manager or on another Linux server.

NOTE: NFS or any other type of mounted file system is not supported if the GroupWise driver connects to it. For example, the GroupWise driver running on Linux should not connect to a domain database on another server through a mounted file system; or a domain database on a Linux server should not be accessed by a GroupWise driver running on any other server, regardless of the operating system.

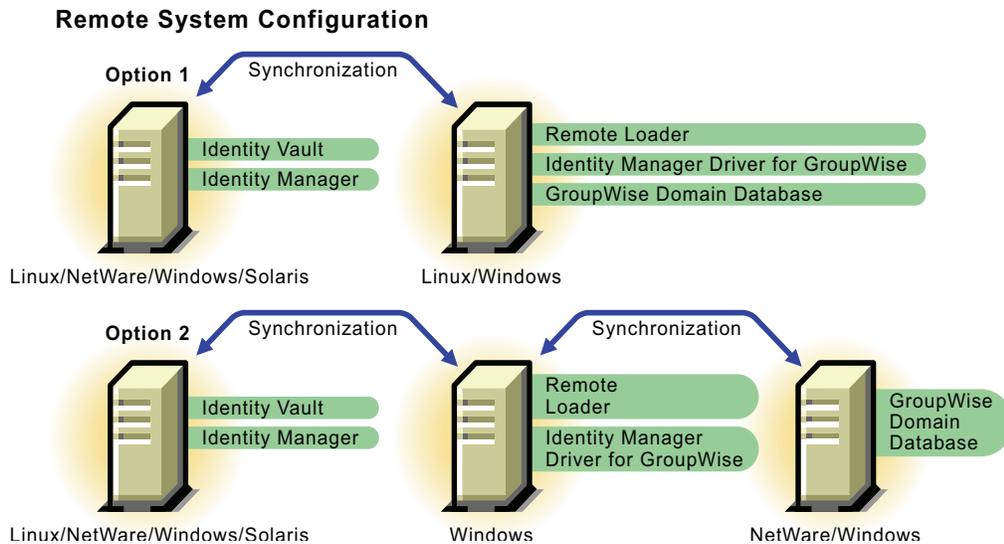
2.2.2 Understanding a Remote Installation

A remote installation installs the driver on a different computer than the one where Identity Manager and eDirectory are installed. Identity Manager and the Identity Vault can run on different platforms

than the driver can run on. For example, option 1 in [Figure 2-2](#) shows that if your Identity Vault and Identity Manager are installed on Solaris*, you would need to install the driver with the Remote Loader on a Linux* or Windows system.

GroupWise can be installed on a separate system from where the Metadirectory engine is installed and from where the Remote Loader is installed as long as the Remote Loader runs on Windows as show in option 2 for [Figure 2-2 on page 15](#).

Figure 2-2 Remote System Configuration



If Identity Manager is installed on one NetWare server and the GroupWise domain database is on another NetWare servers, these server must be installed in the same eDirectory tree.

2.2.3 Configuring Driver Authentication

In order for the driver to authenticate to the GroupWise domain, the driver must first authenticate to its local operating system, and then authenticate to the system holding the GroupWise domain. (If the driver is on the same computer as the domain database, you do not need to configure authentication.)

As part of configuring authentication, you create the same user name and password on each system, and assign the account administrative rights.

IMPORTANT: To establish a connection between systems, you must create user accounts with the same username and password for each system.

The following topics help you configure authentication:

- ◆ [“Creating a User Account for the System Containing the Driver for Windows” on page 16](#)
- ◆ [“Creating a User Account for the System Containing the GroupWise Domain” on page 18](#)

Creating a User Account for the System Containing the Driver for Windows

As part of configuring authentication, you should create the same username and password on the system containing the driver, and assign administrative rights to the account.

After you have created the user account for the driver system, refer to [“Creating a User Account for the System Containing the GroupWise Domain” on page 18](#).

Defining an Account when the Driver Is on Windows 2000

- 1 From the Start Menu, click *Settings > Control Panel > Administrative Tools > Computer Management*.
- 2 Double-click *Local Users and Groups*.
- 3 Right-click *Users > New User*.
- 4 Specify a username and a case-sensitive password.
The username and password must be the same on both systems.
- 5 Deselect *User must change password at next logon*, then select *Password never expires*.
- 6 Deselect all other boxes.
- 7 Click *Create*, then click *Close*.
- 8 Double-click *Groups*.
- 9 Double-click *Administrators*.
- 10 Click *Add*.
- 11 Browse to and select the user you just created in [Step 4 on page 16](#), then click *OK*.
- 12 Click *OK* again.
- 13 Close the Computer Management window.
- 14 Double-click *Local Security Policy* in the Administrative Tools window.
- 15 Select *Local Policies*, then double-click *User Rights Assignment*.
- 16 Double-click *Log On As a Service*.
- 17 Select *Add*, browse to and select the user you just created in [Step 4 on page 16](#), click *Add*, then click *OK*.
- 18 Click *OK* again.
- 19 Close the Local Security Settings window.
- 20 Close the Administrative Tools window.
- 21 Restart the computer.

Defining an Account when the Driver Is on Windows 2000 AD Domain Controller

- 1 From the Start Menu, click *Settings > Control Panel > Administrative Tools > Active Directory Users and Computers*.
- 2 Expand the domain, then right-click *Users > New > User*.
- 3 Specify the first name, last name, then specify the user logon name.
The user logon name is used in the driver configuration. The user name must be the same on both systems.

- 4 Click *Next*.
- 5 Specify a case-sensitive password.
The password must be the same on both systems.
- 6 Select *Password Never Expires*.
- 7 Click *Next*, then click *Finish*.
- 8 Select *Builtin*, then double-click *Administrators > Members > Add*.
- 9 Browse to and select the full name of the user you entered in [Step 3 on page 16](#), click *Add*, then click *OK*.
- 10 Click *OK*.
- 11 Close the Active Directory Users and Computers window.
- 12 In the Administrative Tools window, select *Domain Controller Security Policy*.
- 13 Expand the *Security Settings*, click *Local Policies*, then double-click *User Rights Assignment*.
- 14 Select *Log on as a service* and select *Define These Policy Settings*. Click *Add*, then click *Browse*.
- 15 Browse to and select the user you created in [Step 3 on page 16](#). Click *Add*, click *OK*, then click *OK* again.
- 16 Click *OK* and close the Domain Controller Security Policy window.
- 17 In the Administrative Tools window, select *Local Security Policy*.
- 18 Double-click *Local Policies*, then click *User Rights Assignment*.
- 19 Select *Logon as a service*, select *Local Policy Settings* for the user created in [Step 3 on page 16](#), then click *OK*.
- 20 Close the Local Security Policy window.
- 21 Restart the computer.

Defining an Account when the Driver Is on a Windows 2003 Server

- 1 From the Start Menu, click *Control Panel > Administrative Tools > Computer Management*.
- 2 Select *Local Users and Groups*.
- 3 Right-click *Users > New User*.
- 4 Specify a User name, Full name, and a case-sensitive password.
The user name and password must be the same on both systems.
- 5 Deselect *User must change password at next logon*.
- 6 Select *Password never expires*, then deselect all other check boxes.
- 7 Click *Create*, then click *Close*.
- 8 Double-click *Groups* under *Local User and Groups*.
- 9 Double-click *Administrators*.
- 10 Click *Add*.
- 11 Type the name of the user you created in [Step 4 on page 17](#), click *Check Names* to verify the name, then click *OK*.
- 12 Click *OK* again.
- 13 Close the Computer Management window.

- 14 From the Start Menu, click *Control Panel > Administrative Tools > Computer Management > Local Security Policy*.
- 15 Expand *Local Policies*, then select *User Rights Assignment*.
- 16 Double-click *Log on as a service*.
- 17 Select *Add User or Group*, then specify the name of the user you created in [Step 4 on page 17](#).
- 18 Click *Check Names* to verify the name, then click *OK*.
- 19 Click *OK* again.
- 20 Close the Local Security Settings window.
- 21 Restart the computer.

Creating a User Account for the System Containing the GroupWise Domain

As part of configuring authentication, you should create a username and password on the system containing the GroupWise domain and assign administrative rights to the account.

IMPORTANT: To establish a connection between the driver and the GroupWise domain system, you should create user accounts with the same username and password for each system.

If you have not created the user account for the driver system, refer to [“Creating a User Account for the System Containing the Driver for Windows” on page 16](#). (If the driver runs on NetWare, you do not need to create this user account.)

Defining an Account when the GroupWise Domain Is on Windows 2000

- 1 From the Start Menu, click *Settings > Control Panel > Administrative Tools > Computer Management*.
- 2 Select *Local Users and Groups*, then right-click *Users > New User*.
- 3 Specify a User name and the Full name.
The user name must be the same on both systems.
- 4 Specify a case-sensitive password.
- 5 Deselect *User must change password at next logon*.
- 6 Select *Password never expires*, then deselect all other check boxes.
- 7 Click *Create*, then click *Close*.
- 8 Close the Windows Manager window.
- 9 Double-click the *My Computer* icon on the desktop.
- 10 Right-click the drive that contains the GroupWise Domain, then select *Properties > Sharing*.
- 11 Select *New Share*.
- 12 Specify a share name to be used by the driver.
- 13 Restart the computer.
- 14 Double-click the *My Computer* icon on the desktop.
- 15 Right-click the drive that contains the GroupWise Domain, then select *Properties > Sharing*.
- 16 From the drop-down menu, select the new share you created in [Step 12 on page 18](#).
- 17 Select *Permissions > Everyone*, then click *Remove*.

- 18 Select *Add*.
- 19 Browse to and select the user you created in [Step 3 on page 18](#).
- 20 Click *Add*, then click *OK*.
- 21 Select *Full Control* under permissions, then click *OK*.
- 22 Click *OK*.
- 23 Restart the computer.

Defining an Account when the GroupWise Domain Is on a Windows 2003 Server

- 1 From the Start Menu, click *Control Panel > Administrative Tools > Computer Management*.
- 2 Select *Local Users and Groups*.
- 3 Right-click *Users > New User*.
- 4 Specify a User name, Full name, and a case-sensitive password.
The user name and password must be the same on both systems.
- 5 Deselect *User must change password at next logon*.
- 6 Select *Password never expires*, then deselect all other check boxes.
- 7 Click *Create*, then click *Close*.
- 8 Close the Windows Manager window.
- 9 Double-click the *My Computer* icon on the desktop.
- 10 Right-click the drive that contains the GroupWise Domain, then select *Properties > Sharing*.
- 11 Select *New Share*.
- 12 Specify a share name to be used by the driver.
- 13 Click *Permissions*.
- 14 Select the *Everyone* group, then click *Remove*.
- 15 Click *Add*.
- 16 Enter the name of the user created in step 4, then click *Check Names*.
- 17 Click *OK*.
- 18 Select *Full Control* for the user, then click *OK*.
- 19 Click *OK*, then click *OK* again.
- 20 Restart the computer.

Defining an Account when the GroupWise Domain Is on NetWare

If the driver is running on NetWare or Windows and the GroupWise domain is on a remote NetWare server, it's especially important to verify that this user has file system rights to the GroupWise domain directory structure. If access is not granted to this user, changes do not replicate to the rest of the GroupWise system.

- 1 In ConsoleOne[®], create a user in NetWare with the same username and password as the Windows user account. If the driver is not running on Windows, use any user name or password.

- 2 Give the user Read, Write, Create, Erase, Modify, and File Scan access to the GroupWise domain directory and subdirectories for the domain to which the driver will connect. We recommend connecting to the GroupWise primary domain.

2.3 Installing the Driver

You install the driver as part of the Novell Identity Manager 3.0.1 installation program. For installation instructions, refer to the “[Installing Identity Manager](#)” chapter in the *Identity Manager 3.0.1 Installation Guide*.

This section explains how to import the driver configuration for the Identity Manager driver for GroupWise. Importing the driver configuration also creates the driver object. After you have imported the configuration, you can use iManager to configure and manage the driver.

- ◆ [Section 2.3.1, “Importing the Driver Configuration File in Designer,” on page 20](#)
- ◆ [Section 2.3.2, “Importing the Driver Configuration in iManager,” on page 20](#)
- ◆ [Section 2.3.3, “Configuration Parameters,” on page 21](#)
- ◆ [Section 2.3.4, “Viewing Driver Parameters,” on page 27](#)
- ◆ [Section 2.3.5, “Modifying Global Configuration Values,” on page 27](#)
- ◆ [Section 2.3.6, “Activating the Driver,” on page 30](#)

2.3.1 Importing the Driver Configuration File in Designer

Designer allows you to import the basic driver configuration file for GroupWise. This file creates and configures the objects and policies needed to make the driver work properly. The following instructions explain how to create the driver and import the driver’s configuration.

There are many different ways of importing the driver configuration file in Designer. This procedure documents one way.

- 1 Open a project in Designer. In the modeler, right-click the Driver Set object and select *Add Connected Application*.
- 2 From the drop-down list, select *GroupWise.xml*, then click *Run*.
- 3 Click *Yes* in the Perform Prompt Validation window.
- 4 Configure the driver by filling in the fields with information specific to your environment.
For information on the settings, see [Table 2-2 on page 21](#).
- 5 After specifying parameters, click *OK* to import the driver.
- 6 After the driver is imported, customize and test the driver.
- 7 After the driver is fully tested, deploy the driver into the Identity Vault.

See “[Deploying a Driver to an Identity Vault](#)” in the *Designer for Identity Manager 3: Administration Guide*.

2.3.2 Importing the Driver Configuration in iManager

The Create Driver Wizard in iManager helps you import the basic driver configuration file for GroupWise. This file creates and configures the objects and policies needed to make the driver work

properly. The following instructions explain how to create the driver and import the driver's configuration.

1 In Novell iManager, click *Identity Manager Utilities > Import Drivers*.

2 Select a driver set, then click *Next*.

If you place this driver in a new driver set, you must specify a driver set name, context, and associated server.

3 Select *GroupWise*, and then click *Next*.



4 Configure the driver by filling in the fields with information specific to your environment.

For information on the settings, see [Table 2-2 on page 21](#).

5 After specifying parameters, click *OK* to import the driver.

When the import is finished, you can define security equivalences and exclude administrative roles from replication.

The driver object must be granted sufficient eDirectory rights to any object it reads or writes to. You can do this by granting Security Equivalence to the driver object. The driver must have Read/Write access to users, post offices, resources, and distribution lists, and Create, Read, and Write rights to the post office container. Normally, the driver should be given security equal to Admin.

6 Identify all objects that represent administrative roles and exclude them from replication.

Exclude the security-equivalence object (for example, DriversUser) that you specified in Step 5. If you delete the security-equivalence object, you have removed the rights from the driver. Therefore, the driver can't make changes to the Identity Vault.

7 Review the driver objects in the Summary page, then click *Finish*.

Keep in mind that installing the driver software lets you get the driver up and running, but it does not install the product license. Without the license and activation, the driver will not run after 90 days. For more information, refer to "[Activating Novell Identity Manager Products](#)" in the *Identity Manager 3.0.1 Installation Guide*.

2.3.3 Configuration Parameters

The following table explains the parameters you must provide during initial driver configuration.

NOTE: Some parameters are displayed only if the answer to a previous prompt requires more information to properly configure the policy.

Table 2-2 *Driver Configuration Parameters*

Field	Description
<i>Driver name</i>	The default value is GroupWise. Specify the name you want for the driver.

Field	Description
<i>Enable Entitlements</i>	<p>There are two options, Yes or No.</p> <p>The GroupWise driver uses entitlements to manage user accounts and distribution list membership in GroupWise. Entitlements work in conjunction with external services such as the Identity Manager User Application or Role-Based Entitlements. These external services control provisioning to GroupWise. See “Creating and Using Entitlements” in <i>Novell Identity Manager 3.0.1 Administration Guide</i>.</p> <hr/> <p>IMPORTANT: After the driver is imported, review Section 2.3.4, “Viewing Driver Parameters,” on page 27 and Section 2.3.5, “Modifying Global Configuration Values,” on page 27 for additional configuration options.</p>
<i>Default Post Office</i>	<p>The DN for the default GroupWise Post Office for creating Accounts. The post office can be entered in slash or dot notation.</p> <p>Examples:</p> <p>Novell\GroupWise\PO (slash)</p> <p>PO.GroupWise.Novell (dot)</p>
<i>GroupWise Domain Database Version</i>	<p>Select the version of GroupWise you have installed.</p> <p>Options:</p> <ul style="list-style-type: none"> ◆ <i>GroupWise 7</i> ◆ <i>GroupWise 6.5</i> ◆ <i>GroupWise 6.0</i> ◆ <i>GroupWise 5.5</i>

Field	Description
<i>Driver and Domain servers</i>	<p>Select the server OS where the GroupWise driver is installed and the server OS where the GroupWise domain resides.</p> <p>Depending upon the option that is selected, there are additional fields that are presented. See Table 2-3 on page 24 for information about each option.</p> <p>Options:</p> <ul style="list-style-type: none"> ◆ <i>This driver is on a NetWare server - the GroupWise domain is on the same NetWare server as the driver.</i> ◆ <i>This driver is on a NetWare server - the GroupWise domain is on a different NetWare server from the driver.</i> ◆ <i>This driver is on a Linux server - the GroupWise domain is on the same Linux server as the driver.</i> ◆ <i>This driver is on a Windows server - the GroupWise domain is on the same Windows server as the driver.</i> ◆ <i>This driver is on a Windows server - the GroupWise domain is on a different Windows server from the driver.</i> ◆ <i>This driver is on a Windows server - the GroupWise domain is on a NetWare server.</i>
<i>Action On GroupWise Account Entitlement Add</i>	<p>Entitlement option only.</p> <p>When a user is created in eDirectory with a GroupWise account entitlement, select the action you want to occur on the associated GroupWise account.</p> <ul style="list-style-type: none"> ◆ <i>Disable the GroupWise Account</i> ◆ <i>Enable the GroupWise Account</i>
<i>Action On GroupWise Account Entitlement Remove</i>	<p>Entitlements option only.</p> <p>When a user's GroupWise account entitlement is removed in eDirectory, specify the action you want the driver to take on an associated GroupWise account.</p> <ul style="list-style-type: none"> ◆ <i>Disable the GroupWise account</i> ◆ <i>Delete the GroupWise account</i> ◆ <i>Expire the GroupWise account</i> ◆ <i>Disable and expire the GroupWise account</i>
<i>Driver is Local/Remote</i>	<p>Configure the driver for use with the Remote Loader service by selecting <i>Remote</i>, or select <i>Local</i> to configure the driver for local use.</p>

Field	Description
<i>Remote Host Name and Port</i>	Remote option only. Specify the host name or IP address and port number where the Remote Loader service is installed. The default port is 8090.
<i>Driver password</i>	Remote option only. The driver password is used by the Remote Loader service to authenticate it to the Identity Manager server. It must be the same password that is specified as the Driver Object Password on the Identity Manager Remote Loader.
<i>Remote password</i>	Remote option only. The remote password is used to control access to the Remote Loader instance. It must be the same password that is specified as the Remote Loader password on the Remote Loader service.

Table 2-3 *Optional Fields for Driver and Domain Entry*

Option	Fields	Description
<i>This driver is on a NetWare server - the GroupWise domain is on the same NetWare server as the driver.</i>	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>volume:\Novell\GroupWise\Domain</code>
<i>This driver is on a NetWare server - the GroupWise domain is on a different NetWare server from the driver.</i>	<i>Primary Domain Server</i>	The name or address of the NetWare server containing the GroupWise primary domain database (<code>wpdomain.db</code>). Examples: hostname - the name of the remote NetWare server or <code>###.###.###.###</code> - the IP address of the remote NetWare server
	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>volume:\Novell\GroupWise\Domain</code>

Option	Fields	Description
	<i>Username</i>	The username this driver uses to authenticate to the remote NetWare server that contains the GroupWise domain database. The user account is on the remote NetWare server must have sufficient privileges to access to the domain directory.
	<i>Password</i>	The password of the user listed in the Username field.
	<i>eDirectory User Context</i>	The context of the user listed in the Username field. Examples: <code>\TREE\Novell\adminContainer</code> or <code>ou=adminContainer.o=Novell</code>
<i>This driver is on a Linux server - the GroupWise domain is on the same Linux server as the driver.</i>	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>/novell/groupwise/domain</code>
<i>This driver is on a Windows server - the GroupWise domain is on the same Windows server as the driver.</i>	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>c:\Novell\GroupWise\Domain</code>
<i>This driver is on a Windows server - the GroupWise domain is on a different Windows server from the driver.</i>	<i>Primary Domain Server</i>	The name or address of the server containing the GroupWise primary domain database (<code>wpdomain.db</code>). Examples: hostname - the name of the remote Windows server or hostname.com - the DNS name of the remote Windows server or ###.###.###.### - the IP address of the remote Windows server

Option	Fields	Description
<i>This driver is on a Windows server - the GroupWise domain is on a NetWare server.</i>	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>c\$\Novell\GroupWise\Domain</code>
	<i>Username</i>	The user name this driver uses to authenticate to the remote Windows server that contains the GroupWise domain database. It must be the name of a user account on the remote Windows server. The same username and password must also be configured on both Windows servers.
	<i>Password</i>	The password of the user specified above.
	<i>Primary Domain Server</i>	The name or address of the NetWare server containing the GroupWise primary domain database (<code>wpdomain.db</code>). Examples: hostname - the name of the NetWare server or hostname.com - the DNS name of the NetWare server or ###.###.###.### - the IP address of the NetWare server
	<i>Primary Domain Path</i>	The path to the directory containing the GroupWise primary domain database (<code>wpdomain.db</code>). Example: <code>volume\Novell\GroupWise\Domain</code>
	<hr/> NOTE: There is no colon after the volume. <hr/>	
	<i>Username</i>	The username this driver uses to authenticate to the remote NetWare server that contains the GroupWise domain database. It must be the name of a user account on the NetWare server that has sufficient privileges to access the domain directory. The same username and password must also be configured on this Windows server.
	<i>Password</i>	The password of the user specified above.

Option	Fields	Description
	<i>eDirectory User Context</i>	The eDirectory context of the user name specified above. Browse to and select the context or enter the context as <pre>\TREE\Novell\adminContainer OF ou=adminContainer.o=Novell</pre>

2.3.4 Viewing Driver Parameters

During the driver import process, you enter the driver configuration values. Use the following procedure to view or modify these values.

- 1 In iManager, click *Identity Manager > Identity Manager Overview*.
- 2 Browse to the driver set that includes the GroupWise driver exists, then click *Search*.
- 3 Click the upper right corner of the GroupWise driver icon, then click *Edit properties*.
- 4 Click the *Driver Configuration* tab, then modify any of the parameters.

2.3.5 Modifying Global Configuration Values

Global configuration values (GCVs) are settings that are similar to driver parameters. Global configuration values are specified for a driver set as well as an individual driver. If a driver does not have a GCV, the driver inherits the value for that GCV from the driver set. GCVs allow you to specify settings for new Identity Manager features such as password synchronization and driver heartbeat, as well as settings that are specific to the GroupWise driver. For more information, refer to “[Using Global Configuration Values](#)” in *Novell Identity Manager 3.0.1 Administration Guide*.

- 1 In iManager, click *Identity Manager > Identity Manager Overview*.
- 2 Browse to the driver set that includes the GroupWise driver exists, then click *Next*.
- 3 Click the upper right corner of the GroupWise driver icon, then click *Edit properties*.
- 4 Click the *Global Config Values* tab, then modify the GCVs listed in [Table 2-4 on page 27](#).

Table 2-4 *Global Configuration Values*

GCV Name	Description
<i>GroupWise Domain Database Version</i>	The version of the GroupWise domain database to which this driver should connect. <ul style="list-style-type: none"> ◆ <i>GroupWise 7</i> ◆ <i>GroupWise 6.5</i> ◆ <i>GroupWise 6.0</i> ◆ <i>GroupWise 5.5</i>

GCV Name	Description
<i>Enforce Admin Lockout Setting</i>	<p>Enforces the Minimum Snap-in Release Version and Minimum Snap-in Release Date set in the Admin Lockout Settings tab of System Preferences in ConsoleOne. If the domain to which the driver connects has overridden these settings, they are used. This means the GroupWise driver must be running with GroupWise support files equal to or later than these settings.</p> <p>Normally it is set to <i>True</i>. You might need to set it to <i>False</i>, if the GroupWise support pack is installed and ConsoleOne is configured to lock out previous versions.</p> <p><i>True</i> enforces this lockout setting.</p> <p><i>False</i> disables this lockout setting.</p>
<i>Synchronize Groups</i>	<p>Allows the driver to synchronize eDirectory groups to GroupWise distribution lists.</p> <p><i>True</i> enables the synchronization.</p> <p><i>False</i> disables the synchronization.</p>
<i>Create Nicknames</i>	<p>Allows the driver to create GroupWise nicknames when GroupWise accounts are renamed or moved to another post office.</p> <hr/> <p>NOTE: This option should not be used with GroupWise 6.5.0 or earlier.</p> <hr/> <p><i>True</i> creates nicknames when the accounts are renamed or moved.</p> <p><i>False</i> does not create nicknames when the accounts are renamed or moved.</p>
<i>Reassign Resource Ownership</i>	<p>The driver reassigns ownership of resources when GroupWise accounts are disabled or expired.</p> <p><i>True</i> assigns the resources to the default User ID you specify in the next parameter. This setting does not apply when a GroupWise account is deleted because the resources must be reassigned.</p> <p><i>False</i> is the default.</p>
<i>Default Resource Owner User ID</i>	<p>Specify the prefix of the default user who will become the new owner of resources that are reassigned. The default is IS_admin.</p> <p>You must specify this name even when the <i>Reassign Resource Ownership</i> option is <i>False</i>. When a GroupWise account is deleted, its resources are assigned to this account. If the default User ID does not have a GroupWise account in the post office of the deleted account, an account is created.</p> <hr/> <p>IMPORTANT: The driver does not start if a default user prefix is not specified.</p> <hr/>

GCV Name	Description
<i>Create Accounts During Migration</i>	<p>Allows the driver to create new GroupWise accounts for users without a current account during a migration from eDirectory.</p> <p><i>True</i> allows the accounts to be created.</p> <p><i>False</i> does not create the accounts.</p> <p>Migration causes Identity Manager to examine every object specified. When an object does not have a driver association, the Create policy is applied. If the object meets the Create rule criteria, the object is passed to the driver as an Add event. When you specify <i>True</i>, the driver creates a GroupWise account. When <i>False</i> is specified, the Add event is ignored and the driver issues a warning that this option is set to <i>False</i>. The default value is <i>False</i>.</p> <p>Migration sets the driver association on all users with GroupWise accounts. See Section 2.4.6, "Migrating eDirectory Users to GroupWise," on page 33 for more information.</p>
<i>Action on eDirectory User Delete</i>	<p>Specify the action you want the driver to take on an associated GroupWise account when a user is deleted in eDirectory,</p> <ul style="list-style-type: none"> ◆ <i>Delete the GroupWise Account</i> ◆ <i>Disable the GroupWise Account</i> ◆ <i>Expire the GroupWise Account</i> ◆ <i>Disable and Expire the GroupWise Account</i>
<i>Action on eDirectory User Expire/Unexpire</i>	<p>Specify the action you want the driver to take on an associated GroupWise account when its user login in eDirectory is expired or unexpired.</p> <ul style="list-style-type: none"> ◆ <i>Expire/Unexpire the GroupWise Account</i> ◆ <i>Disable/Enable the GroupWise Account</i> ◆ <i>Disable/Enable and Expire/Unexpire the GroupWise Account</i>
<i>Action on eDirectory User Disable/Enable</i>	<p>Specify the action you want the driver to take on an associated GroupWise account when its user login in eDirectory is disabled or enabled.</p> <ul style="list-style-type: none"> ◆ <i>Expire/Unexpire the GroupWise Account</i> ◆ <i>Disable/Enable the GroupWise Account</i> ◆ <i>Disable/Enable and Expire/Unexpire the GroupWise Account</i>
<i>Remove GW Account from All Distribution Lists on Expire</i>	<p>Set this option to <i>True</i>, if you want the driver to remove the GroupWise account from all distribution lists when the next event is processed.</p> <p><i>True</i></p> <p><i>False</i></p>
<i>Remove GW Account from All Distribution Lists on Disable</i>	<p>Set this option to <i>True</i> if you want the driver to remove the GroupWise account from all distribution lists when the next event is processed.</p> <p><i>True</i></p> <p><i>False</i></p>
<i>Publisher Heartbeat Interval</i>	<p>Specify the Publisher channel heartbeat interval in minutes. Enter 0 to disable the heartbeat.</p>

GCV Name	Description
<i>Set the Initial/Default GroupWise Password on Account Creation</i>	If <i>True</i> , the GroupWise initial password is set when an account is created. The initial password value is specified in the Create policy. If <i>False</i> , the initial password is not set.
<i>Synchronize the eDirectory Password to the GroupWise Regular Password</i>	If <i>True</i> , allows passwords to flow from eDirectory to GroupWise. If <i>False</i> , the regular password is not set. GroupWise has two passwords, the initial password and the regular password. The initial password is stored in clear text and can be seen by an administrator. The regular password is encrypted and cannot be viewed. When set, the regular password is used by GroupWise instead of the initial password. When a GroupWise user changes his or her password, it is stored as the regular password. For security, the initial password is never set to a password sent from eDirectory (nspmDistributionPassword attribute).

If entitlements are enabled in the driver, there are additional GCVs, shown in [Table 2-5 on page 30](#).

Table 2-5 Global Configuration Values with Entitlements

GCV Name	Description
<i>Action On GroupWise Account Entitlement Add</i>	Entitlement option only. When a user is created in eDirectory with a GroupWise account entitlement, select the action you want to occur on the associated GroupWise account. <ul style="list-style-type: none"> ◆ <i>Disable the GroupWise Account</i> ◆ <i>Enable the GroupWise Account</i>
<i>Action On GroupWise Account Entitlement Remove</i>	Entitlement option only. When a user's GroupWise account entitlement is removed in eDirectory, specify the action you want the driver to take on an associated GroupWise account. <ul style="list-style-type: none"> ◆ <i>Disable the GroupWise account</i> ◆ <i>Delete the GroupWise account</i> ◆ <i>Expire the GroupWise account</i> ◆ <i>Disable and expire the GroupWise account</i>

2.3.6 Activating the Driver

Activation must be completed within 90 days of installation or the driver does not run.

For activation information, refer to “[Activating Novell Identity Manager Products](#)” in the *Identity Manager 3.0.1 Installation Guide*.

NOTE: If you are upgrading from previous versions of the driver, you do not need to reactivate the driver.

2.4 Post-Installation Tasks

This section outlines tasks you need to complete after a local or remote installation.

- ◆ [Section 2.4.1, “Installation on NetWare,” on page 31](#)
- ◆ [Section 2.4.2, “Modifying Policies,” on page 31](#)
- ◆ [Section 2.4.3, “Modifying Global Configuration Values,” on page 31](#)
- ◆ [Section 2.4.4, “Starting the Driver,” on page 32](#)
- ◆ [Section 2.4.5, “Verifying That the Driver is Working Properly,” on page 32](#)
- ◆ [Section 2.4.6, “Migrating eDirectory Users to GroupWise,” on page 33](#)

2.4.1 Installation on NetWare

If you installed the driver on the a NetWare server, you need to modify the `autoexec.ncf` file. Open the file and locate the following line:

```
SEARCH ADD SYS:\GRPWISE\AGENTS
```

The `\GRPWISE\AGENTS` directory specifies where the GroupWise agents are installed. Immediately below this line, you should see the following:

```
PROTECT SYS:\GRPWISE\AGENTS\GRPWISE.NCF
```

This SYS line might already exist. If it does, do not add it again, but ensure that “PROTECT” proceeds the command. This loads the `grpwise.ncf` file into protected memory. The `grpwise.ncf` needs to run in protected memory.

You should replace `\GRPWISE\AGENTS` with the path to where the GroupWise agents are installed on your server.

NOTE: If the GroupWise agents are installed in `SYS:\SYSTEM`, Novell recommends moving the agents to another directory and modifying the `autoexec.ncf` file accordingly.

2.4.2 Modifying Policies

Before you start the driver and use it to synchronize data between eDirectory and GroupWise, you must modify the driver’s policies and filters for your specific business rules. See [Chapter 3, “Using Policies and Filters,” on page 37](#) for complete information.

2.4.3 Modifying Global Configuration Values

Before starting the driver, you need to review and make necessary changes to the Global Configuration Values for your environment. For more information [Section 2.3.5, “Modifying Global Configuration Values,” on page 27](#).

2.4.4 Starting the Driver

- 1 In iManager, click *Identity Manager > Identity Manager Overview*.
- 2 Do one of the following:
 - ♦ Select *Search Entire Tree* to search your entire tree for the Driver set that contains the driver you want to start, then click *Search*.
 - ♦ Select *Search in Container*, enter or browse for and select the container that holds the driver you want to start, then click *Search*.
- 3 Click the Identity Manager Driver for GroupWise driver status button, then click *Start Driver*.

NOTE: It is important that you do not to disable the driver. When a driver is disabled, eDirectory events are not cached for the driver.

2.4.5 Verifying That the Driver is Working Properly

After the driver is installed, the driver configuration is imported, and the policies have been customized, you should test the driver to see that it is working properly. (For more information on customizing policies, see [Chapter 3, “Using Policies and Filters,” on page 37.](#))

Use the following steps to verify that the driver is working properly. When properly installed and configured, the driver synchronizes the changes to GroupWise.

To verify that the driver is working properly:

- 1 In Novell iManager, click *Identity Manager > Identity Manager Overview*.
- 2 Do one of the following:
 - ♦ Click *Search Entire Tree* to search your entire tree for the Driver set that contains the driver, then click *Search*.
 - ♦ Click *Search in Container*, enter or browse for and select the container that holds the driver, then click *Search*.
- 3 Click the Identity Manager Driver for GroupWise driver status button, then click *Start Driver*.
- 4 Add a new user to eDirectory.

You need to specify only the Name and Surname attributes for this user.
- 5 Open ConsoleOne with the GroupWise snap-ins.
- 6 Verify that a new GroupWise account was created in the correct post office.
- 7 Using Novell iManager, delete the user from eDirectory.

The default driver import file converts eDirectory deletes to GroupWise Disable events. This results in a disabled external user in GroupWise. This can be changed through the Global Configuration Values.
- 8 Using ConsoleOne with the GroupWise snap-ins, verify that the GroupWise account is external and disabled (assuming you are using the default configuration).
- 9 Use ConsoleOne with the GroupWise snap-ins to verify that the changes have been synchronized with GroupWise.

WARNING: If you create eDirectory users with ConsoleOne, be sure to use ConsoleOne with GroupWise 6.5 or above snap-ins installed. If you are using GroupWise 6.0 or older versions, do not

use ConsoleOne with the GroupWise snap-ins to create eDirectory users. The ConsoleOne snap-ins for the older GroupWise version operate after the driver and remove some vital data from eDirectory.

2.4.6 Migrating eDirectory Users to GroupWise

Under most circumstances, eDirectory and GroupWise already contain information prior to the installation of Identity Manager. The Migrate function in Novell iManager lets you select the users in eDirectory, then perform a migration to GroupWise. You can use the migration function to establish the initial association between eDirectory and the GroupWise driver. The driver does not work properly unless you do this. You should also complete a migrate operation if the driver or driver set name changes.

The migration option in iManager lets you select individual users to migrate from eDirectory into GroupWise. The Metadirectory engine applies all Matching, Placement, and Creation policies and the filter to the objects that you choose to migrate.

To migrate eDirectory users to GroupWise:

- 1 In Novell iManager, click *Identity Manager > Identity Manager Overview*.
- 2 Browse to and select the driver object to which you will be migrating data.
- 3 Click *Migrate from Identity Vault*.
- 4 Click *Add*, then select the container or user objects you want to migrate.
- 5 Click *OK*.

When using this functionality, take into consideration any global configuration setting that controls whether or not GroupWise accounts are created for selected users who don't already have an account.

2.5 Additional Considerations

This section contains information to help you use the Identity Manager Driver for GroupWise.

- ◆ [Section 2.5.1, "Using Anti-virus Software on a GroupWise System," on page 34](#)
- ◆ [Section 2.5.2, "Disabling the Driver," on page 34](#)
- ◆ [Section 2.5.3, "Partition Issues," on page 34](#)
- ◆ [Section 2.5.4, "Driver Access Rights and Membership," on page 34](#)
- ◆ [Section 2.5.5, "Synchronizing Group Objects," on page 34](#)
- ◆ [Section 2.5.6, "Synchronizing Distribution List Objects," on page 34](#)
- ◆ [Section 2.5.7, "Removing a GroupWise Account Using the GroupWise Snap-Ins," on page 35](#)
- ◆ [Section 2.5.8, "Re-associating a GroupWise Account with an eDirectory User," on page 35](#)
- ◆ [Section 2.5.9, "User Renames," on page 35](#)
- ◆ [Section 2.5.10, "Deleting Users and Accounts Using the GroupWise Snap-Ins," on page 35](#)

2.5.1 Using Anti-virus Software on a GroupWise System

If you run a server-based anti-virus software, you should configure it so that it does not scan the GroupWise directory structures such as domains and post offices. The anti-virus software causes file locking conflicts and can create problems for the GroupWise agents. If you need virus scanning on the GroupWise data, check the [GroupWise Partner Products page \(http://www.novell.com/partnerguide/section/468.html\)](http://www.novell.com/partnerguide/section/468.html).

2.5.2 Disabling the Driver

It is important not to disable the driver. When a driver is disabled, eDirectory events are not cached.

2.5.3 Partition Issues

- ♦ The driver can only access eDirectory objects in the partitions on the server where the driver is installed.
- ♦ Users, post offices, resources, and distribution lists must be in the same partition. (Or, the partitions containing these objects must all have replicas on the server running the driver.)

2.5.4 Driver Access Rights and Membership

The driver must have read/write access to User objects, post offices, resources, groups, distribution lists, and create rights to the post office container in eDirectory. Normally, the driver should be given security equal to Admin.

If you are creating external post offices, the driver also needs read/write access to the domain.

2.5.5 Synchronizing Group Objects

If the option to synchronize Groups (creating, deleting, renaming, or making membership changes) is enabled, the driver creates a Distribution List in GroupWise when the user creates a Group in eDirectory and then links the two together. If the Group is renamed, the description modified, or users are added or removed to or from the Group, the driver synchronizes the changes with the Distribution List in GroupWise. This corresponds to similar functionality in the GroupWise snap-ins for ConsoleOne.

The default Placement policy adds the Distribution Lists to the post office specified when the driver is created. If you want the Distributions Lists to be added to a different post office, or various post offices depending on some criteria, you need to change the Placement policy. See [“Specifying Distribution Lists” on page 41](#) for more information.

By default, this occurs for all Groups created in eDirectory. You should add rules to the Create policy to limit what Groups (by containment or attribute value) are processed by the driver.

2.5.6 Synchronizing Distribution List Objects

The driver synchronizes distribution list objects. The Filter, and Schema Mapping policy include the distribution list objects. The distribution list is updated and maintained by the driver just like the Group objects.

2.5.7 Removing a GroupWise Account Using the GroupWise Snap-Ins

Use the steps in this section if it is necessary to remove the GroupWise account using the GroupWise snap-ins.

- 1 Do one of the following:
 - ♦ If an Identity Manager association exists, change the state to Disabled.
When the user has an Identity Manager association to the driver with the state set to Disabled, and an attribute is changed in eDirectory, Identity Manager disregards the modify request.
 - ♦ If an Identity Manager association does not exist, manually create one, set the associated object ID to any value, then set the state to Disabled.
When the user does not have an Identity Manager association and an attribute is changed on the eDirectory user, the GroupWise account is re-created. When a user has an Identity Manager association to the driver with the state set to Disabled, and an attribute is changed in eDirectory, Identity Manager discards the modify request.
- 2 Delete the GroupWise account.
- 3 To re-create the GroupWise account, delete the association.
- 4 Change an eDirectory attribute on the user that the driver watches for modifications or Resync.

2.5.8 Re-associating a GroupWise Account with an eDirectory User

Administrators sometimes delete the value of the GroupWise ID attribute (disassociate) from an eDirectory user and then re-associate (graft) it. This action resets the relationship between an eDirectory user and a GroupWise account. This action only involves the GroupWise snap-ins and does not involve the driver. Care should be taken when using this procedure. Changes made to the eDirectory user between the time the GroupWise ID is deleted and the user is re-associated are not synchronized to GroupWise. This is not a recommended procedure. Refer to the *GroupWise Administration Guide* (http://www.novell.com/documentation/gw7/pdfdoc/gw7_admin/gw7_admin.pdf) for known issues and precautions.

2.5.9 User Renames

Using the GroupWise snap-ins to rename users is not recommended. However, if the user is renamed using the GroupWise snap-ins, it must be done with GroupWise 6 Support Pack 1 or higher. Otherwise, the driver could generate errors. Rename the user object in the authoritative data source and let the driver rename the account in GroupWise.

2.5.10 Deleting Users and Accounts Using the GroupWise Snap-Ins

You can delete an eDirectory User and the corresponding GroupWise account with the GroupWise snap-ins. However, the recommended procedure is to remove the user from the authoritative data source and let the driver remove the account from GroupWise. The eDirectory user must have a valid Identity Manager association to the driver for this to work. The driver might log a warning or

error if the account is deleted using the GroupWise snap-ins, because the object might have already been removed by the GroupWise snap-ins when the driver tries to delete it.

Using Policies and Filters

3

This section explains how to use and modify policies and filters to synchronize data between Novell® eDirectory™ and GroupWise® according to your specific business rules.

- ♦ [Section 3.1, “Using Policies,” on page 37](#)
- ♦ [Section 3.2, “Modifying Policies,” on page 39](#)

3.1 Using Policies

The Identity Manager Driver for GroupWise synchronizes data and events from eDirectory through a series of policies. Policies help Identity Manager make decisions as the documents traverse a channel. A policy might determine that a document needs to be transformed in some way before continuing to the destination. For example, a Create policy specifies that a User object must have a value for the CN attribute, so any attempt to create a User object without a CN value is not allowed by that policy.

The policies in this section are examples of the many possible solutions for your company’s business rules. The code segments show simple and partial solutions and do not cover all situations and conditions. In addition, the code segments only process the attributes of interest and do not handle other attributes.

3.1.1 Default Driver Actions

The driver performs several actions by default:

- ♦ The user’s eDirectory Common Name (CN) is used as the GroupWise MailboxID when a GroupWise account is created.
- ♦ The driver configuration uses a single post office. All accounts are created in a single post office.

3.1.2 Modifying Default Settings in Policies and the Filter

You set defaults for policies and filters when you import the driver configuration. If you want to change the default behavior of the driver, we recommend that you make modifications in this order:

1. Modify the driver filter to include additional attributes to be synchronized. See [“Modifying the Driver Filter” on page 38](#) for more information.
2. Modify the Schema Mapping policy to include all attributes to be synchronized. See [“Adding Entries to the Schema Mapping Policy” on page 38](#) for more information.
3. Modify the Subscriber Create policy. See [“Modifying the Create Policy” on page 38](#) for more information.
4. Modify the Subscriber Placement policy. See [“Modifying Policies” on page 39](#).

Modifying the Driver Filter

The driver filter contains the eDirectory classes and attributes for the Publisher and Subscriber channels. The purpose of the filter is to define how attributes are shared between systems. All attributes in the driver filter are required for processing, so you should not remove attributes from the filter.

You can, however, make additions to the filter. If you add classes or attributes to the filter, you should append the “merge-authority” string to the added attribute in the Mapping policy.

For example:

```
<filter-attr attr-name="Description" merge-authority="edir"
  publisher="ignore" subscriber="sync"/>
```

Adding Entries to the Schema Mapping Policy

The Schema Mapping policy is contained in the driver object and applies to both the Subscriber and Publisher channel. The purpose of the Schema Mapping policy is to map schema names (particularly attribute names and class names) between the eDirectory namespace and the GroupWise namespace. Do not modify or remove existing entries in the Schema Mapping policy. You can, however, add entries to the Schema Mapping policy.

Modifying the Create Policy

You modify the Create policy to implement your specific business rules. The Create policy determines whether or not a GroupWise account is created. A Create policy also can perform other modifications to the Add event, such as providing default values for attributes.

In the driver configuration, the Create policy specifies two required attributes: CN and Surname.

The policy is controlled by a global configuration value (GCV) that sets the initial password to Surname and CN. For more information on GCVs, refer to [Section 3.1.3, “Understanding Global Configuration Values,” on page 38](#).

Modifying the Matching Policy

Matching policies define the minimum criteria that two objects must meet to be considered the same. We recommend that you do not change the default Matching policy.

3.1.3 Understanding Global Configuration Values

Global configuration values (GCVs) are new settings that are similar to driver parameters. Global configuration values can be specified for a driver set as well as an individual driver. If a driver does not have a GCV value, the driver inherits the value for that GCV from the driver set. GCVs allow you to specify settings for new Identity Manager features such as password synchronization and driver heartbeat, as well as settings that are specific to the GroupWise driver. For more information, refer to [“Using Global Configuration Values” in *Novell Identity Manager 3.0.1 Administration Guide*](#).

3.2 Modifying Policies

You can modify the existing driver policies to perform additional functionality.

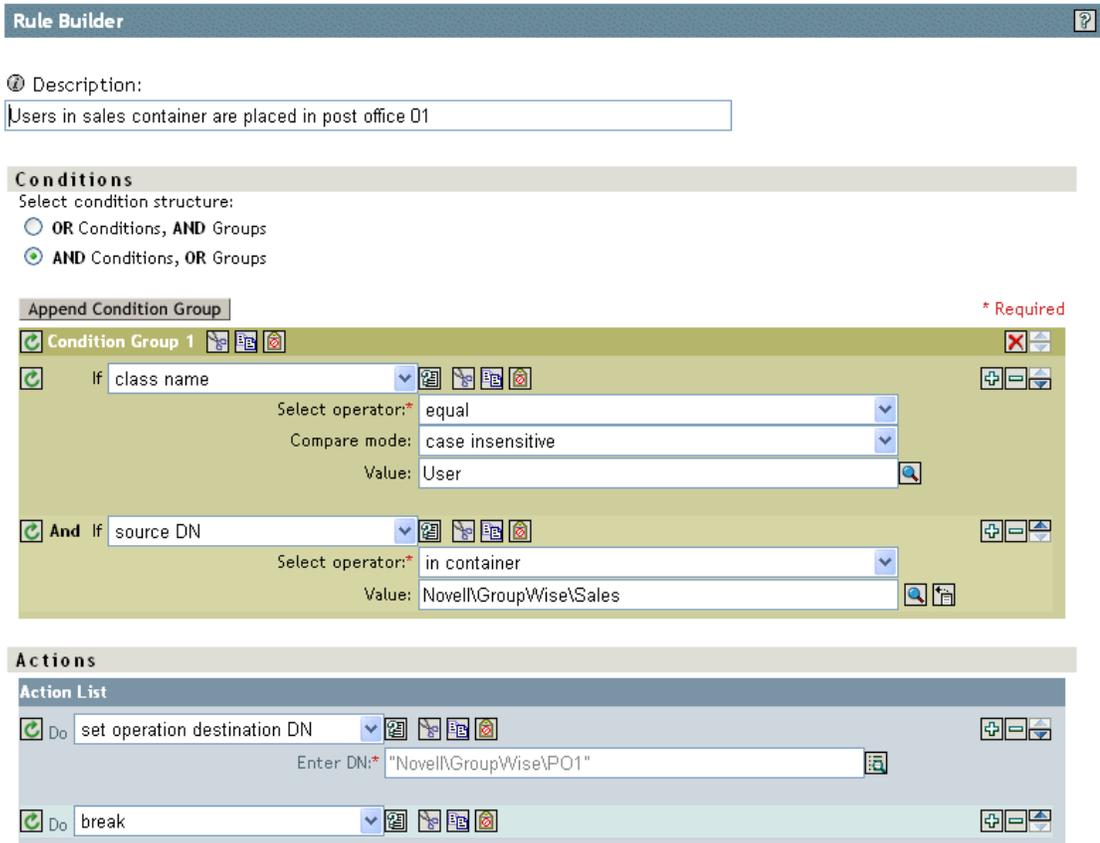
- ◆ [Section 3.2.1, “Specifying the GroupWise Post Office,” on page 39](#)
- ◆ [Section 3.2.2, “Specifying Distribution Lists,” on page 41](#)
- ◆ [Section 3.2.3, “Setting Defaults for GroupWise Attributes,” on page 45](#)
- ◆ [Section 3.2.4, “Configuring the GroupWise UserID,” on page 45](#)
- ◆ [Section 3.2.5, “Creating Mappings for Additional Attributes,” on page 46](#)
- ◆ [Section 3.2.6, “Getting a Record Count from a Query,” on page 46](#)
- ◆ [Section 3.2.7, “Deleting the GroupWise User without Deleting the eDirectory User,” on page 47](#)
- ◆ [Section 3.2.8, “Creating a GroupWise Nickname,” on page 47](#)
- ◆ [Section 3.2.9, “Creating a GroupWise Nickname Record,” on page 47](#)
- ◆ [Section 3.2.10, “Specifying a New Resource Owner on an Owner Delete,” on page 48](#)
- ◆ [Section 3.2.11, “Specifying a New Resource Owner on an Owner Disable or Expire,” on page 49](#)
- ◆ [Section 3.2.12, “Controlling Creation of GroupWise Accounts,” on page 50](#)
- ◆ [Section 3.2.13, “Moving Users from One Post Office to Another Post Office,” on page 51](#)
- ◆ [Section 3.2.14, “Adding Additional Attributes to Be Synchronized,” on page 52](#)
- ◆ [Section 3.2.15, “Renaming Users,” on page 52](#)
- ◆ [Section 3.2.16, “Creating a Gateway Alias,” on page 53](#)
- ◆ [Section 3.2.17, “Querying for a Nickname,” on page 53](#)
- ◆ [Section 3.2.18, “Querying for a Gateway Alias,” on page 56](#)
- ◆ [Section 3.2.19, “Querying for Internet EMail Address,” on page 57](#)
- ◆ [Section 3.2.20, “Synchronizing GroupWise External Users,” on page 57](#)
- ◆ [Section 3.2.21, “Verifying an E-mail Address or Gateway Alias is Unique,” on page 60](#)
- ◆ [Section 3.2.22, “Setting GroupWise Client Options with the Driver,” on page 61](#)

3.2.1 Specifying the GroupWise Post Office

By default, the GroupWise Subscriber Placement policy puts all new users in the same post office. The Placement policy can also determine the post office based on an attribute value or the eDirectory user container.

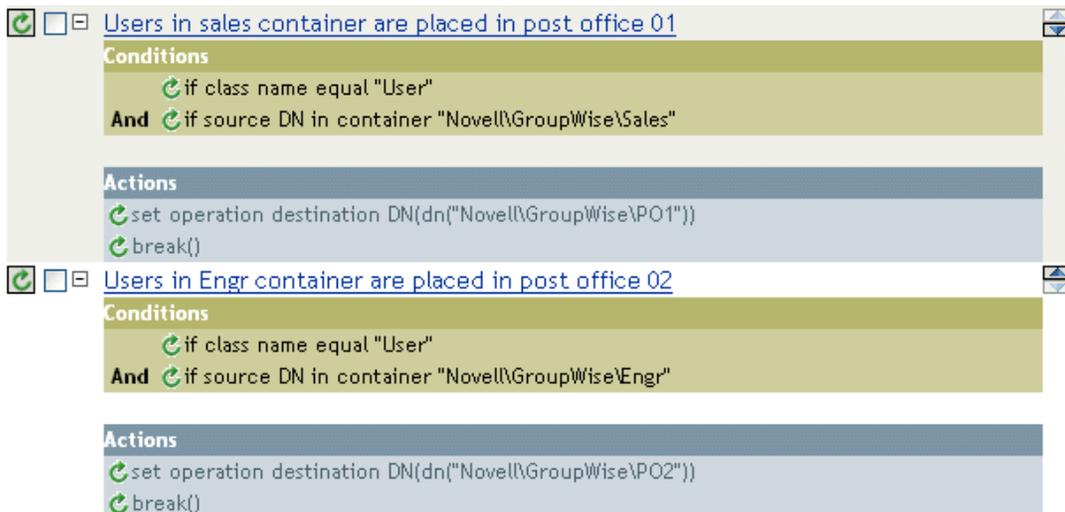
The following example, created in Policy Builder, specifies the post office based on the eDirectory container where the user was created.

Figure 3-1 Placement Policy Specifying a Post Office Based on the eDirectory Container



The following graphic shows the policies needed to place users in the Sales container into PO1 and users in the Engineering container into PO2.

Figure 3-2 Placement Policy for placing Users in Different Containers



3.2.2 Specifying Distribution Lists

Distribution lists are used by organizations to assure that the appropriate individuals are included in various internal communications. Wherever possible, organizations should automatically assign new employees to these distribution lists so that they can immediately participate in the communications that are relevant to them.

Using a Subscriber Create policy, when an eDirectory user is created, the GroupWise account can be added to a distribution list based on the eDirectory container. When a user is created in the Sales container, the user is added to the Sales Distribution List. When a user is created in the Engineering container, the user is added to the Engineering Distribution List.

The policies in this section, created using Policy Builder, show how to configure the following actions:

- ◆ [“Creating a New User as a Member of a Distribution List Based on the User’s eDirectory Container” on page 42](#)
- ◆ [“Adding a User as a Blind Copy or Carbon Copy participant to a Distribution List” on page 42](#)
- ◆ [“Adding a User to a Distribution List when He or She Becomes a Manager” on page 43](#)
- ◆ [“Removing a User from a Distribution List when the User is No Longer a Manager” on page 44](#)
- ◆ [“Removing a User from All Distribution Lists” on page 44](#)

Using Policy Builder, you can use these examples to create similar policies and Distribution Lists for your business rules and environment.

Creating a New User as a Member of a Distribution List Based on the User's eDirectory Container

Figure 3-3 Create Policy

The screenshot shows the 'Rule Builder' interface with the following sections:

- Description:** A text box containing 'Users in Engr container are placed in the EngrDL distribution list'.
- Conditions:**
 - Selected condition structure: AND Conditions, OR Groups
 - Append Condition Group: **Condition Group 1** (Required)
 - Condition 1: If class name equal (case insensitive) User
 - Condition 2: And If source DN in container Novell\GroupWise\Engr
- Actions:**
 - Action 1: Do set destination attribute value (Distribution List DN, User, add to current operation, Current object, dn, Novell\GroupWise\EngrDL)
 - Action 2: Do break

Adding a User as a Blind Copy or Carbon Copy participant to a Distribution List

The user participates in the distribution list as a primary, blind copy, or carbon copy member. The XML attributes of `gw:participation="bc"` and `gw:participation="cc"` are used to set the type of membership a user has in the distribution list. If these attributes are not specified, it defaults to primary.

```
<modify-attr attr-name="Distribution List DN" xmlns:gw="http://www.novell.com/dirxml/gwdriver" gw:participation="bc">
  <add-value>
    <value type="string">\IDMTREE\Novell\Users\cDL1</value>
    <value type="string">\IDMTREE\Novell\Users\cG1</value>
  </add-value>
</modify-attr>
```

or

```
<add-attr attr-name="Distribution List DN xmlns:gw="http://
www.novell.com/dirxml/gwdriver" gw:participation="bc">
  <value type="string">\IDMTREE\Novell\Users\cDL1</value>
  <value type="string">\IDMTREE\Novell\Users\cG1</value>
</add -attr>
```

To add the user as a carbon copy member, replace the attribute gw:participation="bc" with gw:participation="cc".

Adding a User to a Distribution List when He or She Becomes a Manager

Figure 3-4 Adding a User to a Distribution List

The screenshot shows the 'Rule Builder' interface with the following configuration:

- Description:** Add a user to the MgrDL distribution list when made a manager
- Conditions:**
 - Select condition structure: AND Conditions, OR Groups
 - Append Condition Group:**
 - Condition Group 1:**
 - If class name
 - Select operator: equal
 - Compare mode: case insensitive
 - Value: User
 - And If operation attribute
 - Enter name: isManager
 - Select operator: changing to
 - Compare mode: case insensitive
 - Value: true
- Actions:**
 - Action List:**
 - Do set destination attribute value
 - Enter attribute name: Distribution List DN
 - Enter class name: User
 - Select mode: add to current operation
 - Select object: Current object
 - Enter value type: dn
 - Enter DN: "Novell\GroupWise\MgrDL"

Removing a User from a Distribution List when the User is No Longer a Manager

Figure 3-5 Removing a User from a Distribution List

The screenshot shows a rule builder interface with two main sections: a condition and an action.

Condition: The condition is set to "And If" with the operation attribute "isManager". The "Enter name" field contains "isManager", the "Select operator" is "changing from", the "Compare mode" is "case insensitive", and the "Value" is "true".

Actions: The action is "Do" with the operation "remove destination attribute value". The "Enter attribute name" is "Distribution List DN", the "Enter class name" is "User", the "Select mode" is "add to current operation", the "Select object" is "Current object", the "Enter value type" is "dn", and the "Enter DN" is "Novell\GroupWise\MgrDL".

Removing a User from All Distribution Lists

Figure 3-6 Removing a User from All Distribution Lists

The screenshot shows a rule builder interface with a description, a condition, and an action.

Description: The description is "Remove a user from all distribution lists".

Conditions: The condition structure is "AND Conditions, OR Groups".

Append Condition Group: The condition group is "Condition Group 1" and is marked as "* Required". The condition is "If" with the class name "User". The "Select operator" is "equal", the "Compare mode" is "case insensitive", and the "Value" is "User".

Actions: The action is "Do" with the operation "clear destination attribute value". The "Enter attribute name" is "Distribution List DN", the "Enter class name" is "User", the "Select mode" is "add to current operation", and the "Select object" is "Current object".

When a user is removed from the distribution list, the driver cleans up the Member attribute from the associated group object.

3.2.3 Setting Defaults for GroupWise Attributes

Other attributes can be set in the GroupWise account using the Create policy. Some attributes must be set in both eDirectory and GroupWise. When the eDirectory user object contains a corresponding attribute, it must be set. It is important that attribute values are set in both eDirectory and GroupWise. If the attribute is set only in GroupWise, it could be overwritten with the value in eDirectory. You must customize the driver to update values in eDirectory; the driver does not do this by default.

The following example shows setting the Description attribute (Visibility is another common attribute) in eDirectory and GroupWise. The attribute write-back = "true" causes the attribute to also be written in eDirectory.

```
<?xml version="1.0" encoding="UTF-8"?>
<create-rules>
  <create-rule class-name="User" description="GroupWise Account
  Required Attributes">
    <!-- Description attribute is given a default value in both
  eDirectory and in GroupWise -->
    <required-attr attr-name="Description" write-back="true">
      <value type="String"><![CDATA[eDirectory User
  synchronized by GroupWise Driver]]></value>
    </required-attr>
  </create-rule>
</create-rules>
```

3.2.4 Configuring the GroupWise UserID

The CN attribute in eDirectory is used to name the GroupWise account. You must include this in the Create policy as a required attribute. The CN value from eDirectory can be ignored in the Subscriber Create policy and a CN based on other attributes can be generated. An example code segment from a Create policy is shown below. If you make modifications to this policy, the modify events coming from the engine also need to be modified.

When an attribute used to construct the CN is modified, a GroupWise Rename event should be generated via the policies. The UserID must be unique within a post office. If UserID is used to generate Internet EMail Address, it must be unique in the entire GroupWise system. The UserID contains 1 to 256 characters, and cannot contain the following characters: () @ . : , { } * ". The UserID must be unique within its namespace (UserID shares the same namespace as nicknames, resources, and distribution lists.) Do not use a "mapi" (reserved ID) for this value.

An Output Transformation or Event Transformation policy can monitor the attributes used to build the CN. If one of these attributes changes, a Rename event should also be generated. Any attributes used here need to be added to the list of required attributes. In this case, Rename events should still be forwarded to the driver with an empty <newname> element. See ["Renaming Users" on page 52](#) for more information.

```
<!--CN is used to set the GroupWise UserID.
Construct a new CN from Given Name.
--><xsl:template match="add-attr[@attr-name = 'CN']">
<!-- ignore the current CN and create a new one -->
```

```

    <add-attr attr-name="CN">
      <value type="string">
        <xsl:value-of select="../add-attr[@attr-name='Given
Name']/value"/>
      </value>
    </add-attr>
  </xsl:template>

```

3.2.5 Creating Mappings for Additional Attributes

You can synchronize any attribute that can be represented as a string in eDirectory with one of twenty GroupWise generic attributes (excluding octet strings and structured attributes). You specify the eDirectory attribute you want to map in the filter. In addition, the eDirectory and GroupWise attribute names must be connected in the Schema Mapping policy.

The Schema Mapping rule code segment below connects the eDirectory attribute Location with the GroupWise attribute 55003.

```

<attr-name class-name="User">
  <nds-name>Location</nds-name>
  <app-name>55003</app-name>
</attr-name>

```

The twenty GroupWise attribute names are 50106 through 50115 and 55002 through 55011. Address book labels can be assigned to these GroupWise attributes through the GroupWise snap-ins. You should configure the same mappings in GroupWise as you do in the driver mappings.

3.2.6 Getting a Record Count from a Query

The following query, sent to the driver, returns the number of users in dom1.pol.

```

<nds dtdversion="1.1" ndsversion="8.6">
  <input>
    <query event-id="query-groupwise" scope="subtree">
      <search-class class-name="User"/>

      <!-- Referenced Domain Name -->
      <search-attr attr-name="50035">
        <value>dom1</value>
      </search-attr>

      <!-- Referenced Post Office Name -->
      <search-attr attr-name="50062">
        <value>pol</value>
      </search-attr>

      <!-- return Record Count-->
      <read-attr attr-name="Record Count"/>
    </query>
  </input>
</nds>

```

If you remove the post office search attr, it returns the number of users in dom1. If you remove the domain search attr, it returns the number of users in the system. This search can be altered to apply to other search criteria.

3.2.7 Deleting the GroupWise User without Deleting the eDirectory User

After deleting the user in GroupWise, the driver cleans up the GroupWise attributes in eDirectory. The result is the same as deleting the user with the GroupWise snap-ins and only selecting Delete from GroupWise.

You need to change the match criteria to match the needs of your environment.

```
<!-- delete the GroupWise user and clean up eDirectory when the
eDirectory user has not been deleted -->
<xsl:template match="modify[@class-name='User' and modify-attr[@attr-
name='50000']]">
  <delete xmlns:gw="http://www.novell.com/dirxml/gwdriver"
gw:original-event="modify">
  <!-- copy event attributes and association -->
  <xsl:apply-templates select="*|association"/>
  </delete>
</xsl:template>
```

3.2.8 Creating a GroupWise Nickname

GroupWise nicknames can be automatically created when an eDirectory User is renamed or when a GroupWise account is moved. This is controlled in iManager on the driver through the Global Configuration Value page. When you set this option to True, nicknames are automatically created when an eDirectory rename occurs or when a GroupWise account is moved. When you set this option to *False*, nicknames are not created. Nickname creation requires GroupWise 6.5 SP1 or higher agents to be running. You can override this option by adding code to the Output Transformation policy to specify whether a nickname should be created.

```
<!--Override the "Create Nicknames" Driver Option-->
<xsl:template match="rename">
  <xsl:copy>
    <!-- Create a GroupWise nickname. -->
    <xsl:attribute xmlns:gw="http://www.novell.com/dirxml/
gwdriver" name="gw:create-nickname">true</xsl:attribute>
    <xsl:apply-templates select="*|node()"/>
  </xsl:copy>
</xsl:template>
```

3.2.9 Creating a GroupWise Nickname Record

The following examples show two ways to create a nickname record. The first specifies the post office in which the nickname is created in the <dest-dn> attribute (this implies the domain). The second example uses <add-attr> nodes to specify the domain and post office.

The nickname can contain 1 to 256 characters, and cannot contain the following characters: ()@.,{}*". It must be unique within its namespace (nicknames share the same namespace as users, resources, and distribution lists.)

```
      <add class-name="GroupWise Nickname"
dest-dn="Novell\dirxml\groupwise\xmlPO" event-id="0" >
  <!-- Domain of user this nickname refers to -->
  <add-attr attr-name="50068" >
    <value type="string">xmlDom</value>
```

```

</add-attr>
<!-- Post Office of user this nickname refers to -->
<add-attr attr-name="50069" >
    <value type="string">xmlPO</value>
</add-attr>
<!-- user this nickname refers to -->
<add-attr attr-name="50070" >
    <value type="string">Usern1</value>
</add-attr>

<!-- name of nickname record -->
<add-attr attr-name="50073" >
    <value type="string">nn1</value>
</add-attr>
</add>

```

OR

```

<add class-name="GroupWise Nickname" event-id="0" >
    <!-- Domain of user this nickname refers to -->
    <add-attr attr-name="50068" >
        <value type="string">xmlDom</value>
    </add-attr>
    <!-- Post Office of user this nickname refers to -->
    <add-attr attr-name="50069" >
        <value type="string">xmlPO</value>
    </add-attr>
    <!-- user this nickname refers to -->
    <add-attr attr-name="50070" >
        <value type="string">Usern1</value>
    </add-attr>

    <!-- Domain of nickname record -->
    <add-attr attr-name="50035" >
        <value type="string">xmlDom</value>
    </add-attr>
    <!-- Post Office of nickname record -->
    <add-attr attr-name="50062" >
        <value type="string">xmlPO</value>
    </add-attr>
    <!-- name of nickname record -->
    <add-attr attr-name="50073" >
        <value type="string">nn1</value>
    </add-attr>
</add>

```

3.2.10 Specifying a New Resource Owner on an Owner Delete

If the owner of a resource (a conference room, for instance) is deleted, the driver automatically assigns that resource to another owner. You must designate a default user for all resource assignments. At the time the resource is assigned, if the driver detects no default user account, it creates the default user account and assigns the resource to that user.

Through a policy, you can specify an override owner. Using the Output Transformation policy, the eDirectory User delete is selected. The special attribute, gw:resource-owner-dn, is used to notify the shim of the override resource owner. This special attribute is specified on the <delete> element. Resources are always reassigned on a delete. The new owner must already exist in GroupWise and be in the same post office as the user being deleted. If a failure occurs using the override owner, the resources are automatically assigned to the default user specified in the driver options. The XSLT code segment is:

```
<!-- User Delete Reassigns GroupWise Resource
  On an eDirectory User delete specify the GroupWise Account
  to reassign the GW resources to.
-->
<xsl:template match="delete[@class-name='User']">
  <!-- copy the delete through -->
  <xsl:copy>
    <!-- Specify the override resource owner on the <delete> -->
    <xsl:attribute xmlns:gw="http://www.novell.com/dirxml/
gwdriver"
      name="gw:resource-owner-
dn">\GWDRIVERTREE\novell\users\sales\ResourceOwner</xsl:attribute>
    <!-- copy the rest of the stuff through -->
    <xsl:apply-templates select="@*|node()"/>
  </xsl:copy>
</xsl:template>
```

3.2.11 Specifying a New Resource Owner on an Owner Disabled or Expire

If the owner of a resource (a conference room, for instance) is disabled or expired, you can use GCVs to configure the driver to automatically assign that resource to another owner (using GCVs.) In this process, you can designate a default user for all resource assignments. At the time a resource is being reassigned, if the driver detects no default user account, it creates a default user account and assigns it as the resource owner only if the Reassign Resource Ownership driver GCV is set to *True*.

When an eDirectory User Login Disabled attribute is set, the GroupWise resources of the disabled or expired account can be assigned to another GroupWise account. Normally, the new owner is a default user specified in the Default Resource Owner UserID parameter. Through a style sheet, an override owner can be specified. Using the Output Transformation style sheet, the eDirectory User login disable is selected. The special attribute, gw:resource-owner-dn, is used to notify the shim of the override resource owner. This special attribute is specified in the <modify-attr> element.

The resources are assigned to the override owner even when the Reassign Resource Ownership GCV is set to *False*. The new owner must already exist in GroupWise and be in the same post office as the user being expired. If a failure occurs using the override owner, the resources are automatically assigned to the default user specified in the Driver Options. The XSLT code segments for disabling and expiring are:

```
<!-- When a GroupWise Account is Disabled also specify the GroupWise
Account to reassign the GW resources to.-->
<xsl:template match="modify-attr[@attr-name='50058']">
  <!-- When Login Disabled is true, reassign the resource -->
  <xsl:if test="add-value//value[.='true']">
    <!-- copy the modify through -->
    <xsl:copy>
```

```

        <!-- Specify the override resource owner on the <modify-
attr> -->
<xsl:attribute xmlns:gw=http://www.novell.com/dirxml/gwdriver
name="gw:resource-owner-
dn">\GWDRIVERTREE\novell\users\sales\ResourceOwner</xsl:attribute>
        <!-- copy the rest of the stuff through -->
        <xsl:apply-templates select="@*|node()"/>
    </xsl:copy>
</xsl:if>
</xsl:template>

<!-- User Expire to GroupWise Expire and Reassign GroupWise Resources
When the eDirectory User Login Expiration Time attribute is modified,
change the GroupWise Mailbox Expiration Time and
specify the GroupWise Account to reassign the GroupWise resources to.
-->
<xsl:template match="modify-attr[@attr-name='Login Expiration Time']">
    <!-- copy the modify through -->
    <xsl:copy>
        <!-- copy all attributes through except for the attr-name -->
        <!-- we'll construct the GroupWise attr-name below -->
        <xsl:apply-templates select="@*[name(.) != 'attr-name']"/>
        <!-- now create the attr-name attribute with the GroupWise
name -->
        <xsl:attribute name="attr-name">50138</xsl:attribute>
        <!-- Specify the override resource owner on the <modify-attr>
-->
        <xsl:attribute name="gw:resource-owner-dn"
            xmlns:gw="http://www.novell.com/dirxml
gwdriver">\GWDRIVERTREE\novell\users\sales\ResourceOwner</
xsl:attribute>
        <!-- copy the rest of the stuff through, except for what we
have already copied-->
        <xsl:apply-templates select="* | comment() | processing-
instruction() | text()"/>
    </xsl:copy>
</xsl:template>

```

3.2.12 Controlling Creation of GroupWise Accounts

There might be situations where an eDirectory user is created and you do not want to create a corresponding GroupWise account. In addition, not all eDirectory users initially have a GroupWise account. You can use the driver to control the creation of GroupWise accounts.

The recommended way to control the creation of an account is to define whether a GroupWise account is to be created; for example, by using the createGroupWiseAccount attribute.

The eDirectory schema must be extended to include the attribute createGroupWiseAccount. When the createGroupWiseAccount attribute is set to true, the GroupWise account is created. When the createGroupWiseAccount attribute is set to false, the GroupWise account is not created. Changing the value from false to true causes the GroupWise account to be created.

The createGroupWiseAccount attribute must be added to the Create policy as a required attribute and also added to the Subscriber Filter.

```
<!-- createGroupWiseAccount is used to control creation of the
GroupWise Account -->
  <match-attr attr-name="createGroupWiseAccount">
    <value><![CDATA[true]]></value>
  </match-attr>
```

3.2.13 Moving Users from One Post Office to Another Post Office

When a style sheet is not configured to move GroupWise accounts, we recommend that you use the GroupWise 7 snap-ins (or higher) for user moves.

When the Output Transformation style sheet is configured to move GroupWise accounts, we recommend that user moves be made in eDirectory and that the driver assign the object to a new post office in GroupWise. The XSLT code segment for the Output Transformation policy is shown below. The dest-dn attribute on the parent element specifies the new post office.

```
<!--On an eDirectory User Move add the GroupWise Post Office DN
based on the User's new container-->
<xsl:template match="move[@class-name='User']">
  <!-- copy the Move through -->
  <xsl:copy>
    <!-- copy the attributes from the <move> element -->
    <xsl:apply-templates select="@*" />
    <association>
      <xsl:value-of select="association" />      </
association>
    <parent>
      <xsl:attribute name="src-dn">
        <xsl:value-of select="parent/@src-dn" />
      </xsl:attribute>
      <!-- Specify the post office DN based on the container -->
      <xsl:choose>
        <xsl:when test="parent/@src-dn =
'\GWDRIVERTREE\Novell\Users\Sales' ">
          <xsl:attribute name="dest-dn">
            \GWDRIVERTREE\Novell\GroupWise\Post Offices\Sales PO</xsl:attribute>
          </xsl:when>
        <xsl:when test="parent/@src-dn =
'\GWDRIVERTREE\Novell\Users\Engineering' ">
          <xsl:attribute name="dest-dn">
            \GWDRIVERTREE\Novell\GroupWise\Post Offices\Engineering PO</
xsl:attribute>
          </xsl:when>
        </xsl:choose>
      </parent>
    </xsl:copy>
  </xsl:template
```

3.2.14 Adding Additional Attributes to Be Synchronized

You can map up to twenty user eDirectory attributes to generic GroupWise attributes and display them in the address book. For these attributes, you use the ranges 50106-50115 and 55002-55011. You must first add these eDirectory attributes to the filter. You must configure these attributes in the GroupWise snap-ins for these attributes to appear in the GroupWise address book.

3.2.15 Renaming Users

We recommend that you rename users by changing the naming attribute in eDirectory and letting the driver rename the GroupWise account. When CN is the naming attribute (this is the default), no special style sheet coding is required for a rename process. However, the GroupWise MailboxID can be built from attributes other than CN. When one of these attributes is modified, the GroupWise account should also be renamed. The XSLT code segment is shown below. In this example, the eDirectory attribute Given Name is used to name the GroupWise account. When Given Name is modified, a GroupWise rename is generated. In the second template below, `<xsl:template match="rename[@class-name='User']">` handles the case where the eDirectory User object was renamed. In this case the `<rename>` command is passed through to the driver. The empty `<new-name/>` element blocks the driver from renaming the GroupWise account. Even though the GroupWise account is not renamed, the rename event must pass to the driver.

We do not recommend that you use the GroupWise snap-ins to do a rename. However, if the user is renamed using the GroupWise snap-ins, it must be done with GroupWise 6.5 SP1 or higher. If you use an older version of the GroupWise snap-ins, it can cause the driver to generate errors.

Example 1

```
<!-- When the attribute used to set CN changes, in this case Given
Name, create an element <new-name> to rename the GroupWise Account
-->
<xsl:template match="modify[@class-name='User']">
  <!-- Given Name is used the for GroupWise CN, when it changes do a
rename -->
  <xsl:if test="modify-attr[@attr-name='50091']">
    <!-- Copy the <modify> through so all changes get made -->
    <xsl:copy>
      <xsl:apply-templates select="@*|node()"/>
    </xsl:copy>
    <!-- generate a <rename> -->
    <rename class-name="User">
      <!-- copy the attributes from the <modify-attr> element
to the <rename> element -->
      <xsl:apply-templates select="@*"/>
      <!-- The object was not renamed in eDir so use src-dn for
src-dn and old-src-dn -->
      <xsl:attribute name="old-src-dn">
        <xsl:value-of select="@src-dn"/>
      </xsl:attribute>
      <!-- copy the children from the <modify> element to the
<rename> element -->
      <xsl:apply-templates select="node()"/>
      <new-name>
        <xsl:value-of select="modify-attr[@attr-
```

```

name='50091']/add-value/value"/>
    </new-name>
  </rename>
</xsl:if>
</xsl:template>

```

Example 2

```

<!--
When the User object is renamed in eDirectory, the GroupWise account is
not renamed since it is named by the Given Name attribute
-->
<xsl:template match="rename[@class-name='User']">
  <!-- Copy the rename through except new-name -->
  <xsl:copy>
    <xsl:apply-templates select="@*|node()[name() != 'new-
name']"/>
    <!-- <new-name> does not change since the GW account is named
by the Given Name attribute -->
    <new-name/>
  </xsl:copy>
</xsl:template>

```

3.2.16 Creating a Gateway Alias

The following XSLT code segment shows how to create a gateway alias in the Output Transformation policy. Your code is responsible for generating the value of attributes 50140 and 50077.

```

<xsl:template match="add[@class-name='User']">
  <xsl:copy>
    <xsl:apply-templates select="@*"/>
    <add-attr attr-name="Gateway Alias">
      <value type="structured">
        <component name="50140"><![CDATA[SMTP]]></
component>
        <component
name="50077"><![CDATA[UserOne@novell.com]]>
        </component>
      </value>
    </add-attr>
    <xsl:apply-templates select="* | comment() | processing-
instruction()
| text()"/>
  </xsl:copy>
</xsl:template>

```

3.2.17 Querying for a Nickname

The following Output Transformation policy shows how to query for GroupWise nicknames. The search-attrs in this style sheet are optional. They are used to scope the search. When you specify a post office name (50069), you must also specify a domain name (50068). More than one nickname can be returned.

For example, User2a is renamed to User2b, then renamed to User2c. There will be two nickname records (User2a and User2b) which both reference User2c. This code sample queries the User of the current event for nicknames. You should use a different match criteria.

```

<xsl:template match="modify[@class-name='User']">
  <xsl:copy>
    <xsl:apply-templates select="@*|node()" />
  </xsl:copy>
  <xsl:variable name="query">
    <nds dtdversion="1.0" ndsversion="8.5">
      <input>
        <query class-name="{@class-name}" event-id="query-groupwise" cope="entry">
          <association>
            <xsl:value-of select="association" />
          </association>
          <!-- User Domain Name -->
          <read-attr attr-name="50035" />
          <!-- User Post Office Name -->
          <read-attr attr-name="50062" />
          <!-- User Object Name -->
          <read-attr attr-name="50073" />
        </query>
      </input>
    </nds>
  </xsl:variable>
  <xsl:variable name="gw-data"
select="query:query($destQueryProcessor, $query)//instance"/>
  <xsl:variable name="query2">
    <nds dtdversion="1.0" ndsversion="8.5">
      <input>
        <query event-id="query-groupwise" scope="subtree">
          <search-class class-name="GroupWise
Nickname"/>
          <!-- Referenced Domain Name -->
          <search-attr attr-name="50068">
            <value>
              <xsl:value-of select="$gw-data//
attr[@attr-name='50035']/value"/>
            </value>
          </search-attr>
          <!-- Referenced Post Office Name -->
          <search-attr attr-name="50069">
            <value>
              <xsl:value-of select="$gw-data//
attr[@attr-name='50062']/value"/>
            </value>
          </search-attr>
          <!-- Referenced Object Name -->
          <search-attr attr-
name="50070">
            <value>
              <xsl:value-of select="$gw-data//
attr[@attr-name='50073']/value"/>

```

```

        </value>
        </search-attr>
        <!-- Domain Name of Nickname Record -->
        <read-attr attr-name="50035"/>
        <!-- Post Office Name of Nickname Record -->
        <read-attr attr-name="50062"/>
        <!-- Object Name of Nickname Record -->
        <read-attr attr-
name="50073"/>
    </query>
</input>
</nds>
</xsl:variable>
<xsl:variable name="gw-nickname"
select="query:query($destQueryProcessor, $query2)//instance"/>
</xsl:template>

```

Result

```

<nds dtdversion="1.1" ndsversion="8.6">
  <source>
    <product build="20020409_1220" instance="GroupWise ZDS
Driver" version="1.0a Beta">DirXML Driver for GroupWise</product>
    <contact>Novell, Inc.</contact>
  </source>
  <output>
    <instance class-name="GroupWise Nickname" event-id="0">
      <attr attr-name="50035">
        <value type="string">TaoDom</value>
      </attr>
      <attr attr-name="50062">
        <value type="string">TaoPO</value>
      </attr>
      <attr attr-name="50073">
        <value type="string">User2b</value>
      </attr>
    </instance>
    <instance class-name="GroupWise Nickname" event-id="0">
      <attr attr-name="50035">
        <value type="string">TaoDom</value>
      </attr>
      <attr attr-name="50062">
        <value type="string">TaoPO</value>
      </attr>
      <attr attr-name="50073">
        <value type="string">User2a</value>
      </attr>
    </instance>
    <status level="success"/>
  </output>
</nds>

```

3.2.18 Querying for a Gateway Alias

The following XSLT code segment shows how to query in the Output Transformation policy for a gateway alias.

```
<xsl:template match="modify[@class-name='User']">
  <xsl:copy>
    <xsl:apply-templates select="@*|node()" />
  </xsl:copy>
  <xsl:variable name="query">
    <nds dtdversion="1.0" ndsversion="8.5">
      <input>
        <query class-name="{@class-name}" event-id="query-groupwise" scope="entry">
          <association>
            <xsl:value-of select="association" />
          </association>
          <read-attr attr-name="Gateway Alias" />
        </query>
      </input>
    </nds>
  </xsl:variable>
  <xsl:variable name="gw-aliases"
select="query:query($destQueryProcessor, $query)//instance"/>
</xsl:template>
</xsl:template>
```

Result

```
<nds dtdversion="1.0" ndsversion="8.5">
  <source>
    <product version="1.0 SP1 Beta, 20020307_1205">GroupWise ZDS
Driver</product>
    <contact>Novell, Inc.</contact>
  </source>
  <output>
    <instance class-name="User" event-id="0" src-dn="TaoDom.TaoPO.User1{106}DFD036A0-0776-0000-A246-4100F0001300">
      <association>TaoDom.TaoPO.User1{106}DFD036A0-0776-0000-A246-4100F0001300<association>
      <attr attr-name="Gateway Alias">
        <value type="structured">
          <component name="50140">SMTP</component>
          <component name="50077">UserOne@novell.com</component>
        </value>
      </attr>
    </instance>
    <status level="success" />
  </output>
</nds>
```

3.2.19 Querying for Internet EMail Address

The following XSLT code segment shows how to query in the Output Transformation policy for the Internet Email Address generated by GroupWise.

```
<xsl:template match="modify[@class-name='User']">
  <xsl:copy>
    <xsl:apply-templates select="@*|node()" />
  </xsl:copy>
  <xsl:variable name="query">
    <nds dtdversion="1.0" ndsversion="8.5">
      <input>
        <query class-name="{@class-name}" event-id="query-
groupwise" scope="entry">
          <association>
            <xsl:value-of select="association"/>
          </association>
          <read-attr attr-name="Internet EMail Address"/>
        </query>
      </input>
    </nds>
  </xsl:variable>
  <xsl:variable name="inet-address"
select="query:query($destQueryProcessor, $query)//instance"/>
</xsl:template>
```

Results

```
<nds dtdversion="1.1" ndsversion="8.6">
  <source>
    <product build="20020502_1251" instance="GroupWise Driver"
      version="1.0a Beta">DirXML Driver for GroupWise</product>
    <contact>Novell, Inc.</contact>
  </source>
  <output>
    <instance class-name="User" event-id="0"
      src-dn="TaoDom.TaoPO.User2{106}5B8C40F0-0E79-0000-9ADA-
350037009300">
    <association>TaoDom.TaoPO.User2{106}5B8C40F0-0E79-0000-9ADA-
350037009300</association>
      <attr attr-name="Internet EMail Address">
        <value type="string">User2@domain.com</value>
      </attr>
    </instance>
    <status level="success"/>
  </output>
</nds>
```

3.2.20 Synchronizing GroupWise External Users

In your business, you might have several different e-mail applications. Although not all employees will have GroupWise e-mail accounts, you want the GroupWise address book to contain all employee information. The driver has the ability to create GroupWise external users, which enables the driver to obtain data from other e-mail systems (via the Identity Vault) and display it in the

GroupWise address book. The users in the Identity Vault can be assigned to a GroupWise external Post Office.

If you are using multiple e-mail systems (GroupWise and NetMail[®]/Notes/Exchange) you can create external users and external post offices to add the users in the non-GroupWise systems to the GroupWise address book.

To synchronize data between external e-mail systems and GroupWise, your implementation must meet the following conditions:

- ◆ External users must be assigned to or be created in an external post office. These users do not have a GroupWise mailbox.
- ◆ External post offices must belong to a non-GroupWise domain.

The default driver configuration does not include this customization. To implement this functionality, you should make appropriate changes to your filters, policies, and style sheets based on your business processes.

TIP: In the `\nt\dirxml\drivers\groupwise\extensions` directory of the software, you can find examples of how to implement this solution. These are samples only and not intended for production use; customization is required. If users are in a tree other than where the GroupWise users are, you can use the simple example. If the GroupWise and non-GroupWise users are in the same tree, use the merged example.

Creating External Users

There are two ways you can specify placement when creating external users:

- ◆ In the Placement rule, you can specify the DN of an eDirectory object associated with the external post office. For additional information, refer to [“Creating External Post Offices” on page 59](#).
- ◆ Identify the external post office by [“Specifying an External Post Office in an Add Event” on page 59](#).

When creating accounts in eDirectory for a non-GroupWise user, make sure the attribute `gw:classification=”external”` is part of the Add event. The attribute can be used on the User object and on the Post Office object.

You can modify the Schema Mapping policy or Output Transformation policy so that it modifies the class name of the user based on some criterion, such as the parent container name. The external users were formerly a separate class. The preferred method is to add the attributes instead of adding a new class. These two methods are mutually exclusive.

When a new GroupWise external user is added to GroupWise, the driver creates an association on the User object in the Identity Vault. If the non-GroupWise user’s information changes in the Identity Vault, the driver synchronizes those changes to GroupWise. If the association key is altered or deleted, the connection is broken, and the driver does not synchronize any changes made to the User object in the Identity Vault to GroupWise.

Specifying an External Post Office in an Add Event

If you do not use the driver to create an external post office, you need to generate the following information in the XML Add event. You must replace the external post office name and non-GroupWise domain values with names specific to your system.

```
<!-- The external post office name to which the user belongs. -->
  <add-attr attr-name="50062">
    <value type="string"><![CDATA[External post office
name]]></value>
  </add-attr>

<!-- The non-GroupWise domain name to which the external post office
belongs. -->
  <add-attr attr-name="50035">
    <value type="string"><![CDATA[Non-GroupWise domain name]]></
value>
  </add-attr>
```

NOTE: If you include the additional XML in the Add event, the value in your Placement policy is overridden.

Creating External Post Offices

There are two ways you can create external post offices:

- ◆ Let the driver create a GroupWise external post office and associate it to an eDirectory object, such as an Organizational Unit (recommended).
- ◆ Create an external post office through ConsoleOne®.

If you want the driver to create an external post office, you should modify the Schema Mapping policy to map the class name of “GroupWise Post Office” and modify the Output Transformation policy to add the XML attribute gw:classoication=“external”.

NOTE: Before you can create an external post office, you must create a non-GroupWise domain in ConsoleOne.

There are two ways you can specify placement when creating external post offices:

- ◆ In the Placement policy, you can specify the name of the non-GroupWise domain in which to create the external post office.
- ◆ Identify the non-GroupWise domain by generating XML code to specify the non-GroupWise domain. For additional information, refer to [“Specifying a Non-GroupWise Domain in an Add Event” on page 59](#).

Specifying a Non-GroupWise Domain in an Add Event

You can generate the following information in the XML Add event. You must replace the non-GroupWise domain value with the name specific to your system.

```
<!-- The non-GroupWise domain name to which the external post office
belongs. -->
  <add-attr attr-name="50035">
```

```
        <value type="string"><![CDATA[Non-GroupWise domain name]]></value>
    </add-attr>
```

NOTE: If you include the additional XML in the Add event, the value in your Placement policy is overridden.

If you associate the external post office with an Organizational Unit, you must also map the OU attribute to the CN attribute for the Organizational Unit class, and the driver will use that attribute value for the post office name.

NOTE: The Schema Mapping policy has a mapping for the OU attribute on the User class. Do not change the User class mapping.

When creating external users, you should use the DN of the Organizational Unit in the Placement policy. When an external post office is added, you should specify the GroupWise domain to which the external post office belongs:

When you create an external post office with the driver, GroupWise uses the default time zone setting on the non-GroupWise domain. If you want to change the time zone setting for the post office, generate the following XML in the Add event. Insert the appropriate time zone value in place of EST.

```
    <add-attr attr-name="50088" >
        <value type="string">EST</value>
    </add-attr>
```

3.2.21 Verifying an E-mail Address or Gateway Alias is Unique

The GroupWise driver has a special query that allows you to see if a proposed Internet e-mail address or gateway alias is unique. If the address is unique, a success status without an instance node is returned. If the address is not unique, the record owning the conflicting address is returned.

Here is a query example with a hardcoded value *helloworld@mydomain.com*. Make sure to replace each instance of the hardcoded value with your value.

```
<query event-id="query-groupwise" scope="subtree">
    <search-class class-name="User"/>
    <search-attr attr-name="Internet EMail Address">
        <value>helloword@mydomain.com</value>
    </search-attr>
    <!-- Domain Name of Object -->
    <read-attr attr-name="50035"/>
    <!-- Post Office Name of Object -->
    <read-attr attr-name="50062"/>
    <!-- Object Name of Object -->
    <read-attr attr-name="50073"/>
</query>
```

If there is a gateway alias with this value, you receive the following:

```
<instance class-name="GroupWise GateWay Alias" event-id="0">
```

```

    <attr attr-name="50035">
      <value type="string">gwdom</value>
    </attr>
    <attr attr-name="50062">
      <value type="string">gwpo</value>
    </attr>
    <attr attr-name="50073">
      <value type="string">User3</value>
    </attr>
  </instance>

```

The value of the `<attr attr-name>` elements give the name of the user to which the gateway belongs.

If an existing user owns the Internet e-mail address, you receive the following:

```

<instance class-name="User" event-id="0" src-
dn="gwdom.gwpo.User3">
  <association>gwdom.gwpo.User3{106}7F7B2F70-0434-000-A0DE-
DB0019009700</association>
  <attr attr-name="50035">
    <value type="string">gwdom</value>
  </attr>
  <attr attr-name="50062">
    <value type="string">gwpo</value>
  </attr>
  <attr attr-name="50073">
    <value type="string">User3</value>
  </attr>
</instance>

```

Only one instance is returned, even if there are multiple conflicts.

3.2.22 Setting GroupWise Client Options with the Driver

- ◆ [“Archive Directory” on page 62](#)
- ◆ [“Disk Space Management” on page 62](#)

The driver allows you to set some of the environment and send options of the GroupWise client. They are set by using policies. There are many fields for the client options and they are divided up into attributes.

The structure for all attributes is the same. The policy creates the attribute, identifies the correct field, sets the value for the field, and allows you to lock the field.

```

<attr attr-name="">
  <value type="structured">
    <component name="lock-level"></component>
    <component name="value"></component>
    <component name="field"></component>
  </value>
</attr>

```

The value and field components must be present. The lock-level is optional. If the lock-level is specified, it must have a value specified as well. The absence of the lock-level is the same as setting the lock-level to 0.

The lock-level locks the ability to modify the field. The lock-level is normally set through ConsoleOne snap-ins. It can be set at the user, post office, or domain level. If the field is locked at the post office, the user cannot modify the field. There are many different lock-levels:

- ◆ 0: Not locked. Default
- ◆ 2: Set on the user, but not locked.
- ◆ 3: Set on the post office, but not locked.
- ◆ 4: Set on the domain, but not locked.
- ◆ 5: Locked on the user.
- ◆ 6: Locked on the post office.
- ◆ 7: Locked on the domain.

Lock levels can be shared by a group of fields. If you want to lock one field, you must lock all fields. A value must be set, even if it is the default value for the lock to function.

Archive Directory

The archive directory is found in ConsoleOne through the GroupWise client options under *Environment > File Location > Archive Directory*. *Archive Directory* sets the directory to be used for archiving items. Each user must have his or her own archive directory, so this can be a local directory (for example, `c:\novell\groupwise`) or a personal user directory on a network server. If you set a local drive, make sure the users have the directories created. If you select a network drive, make sure users have the necessary rights to access the directories.

```
<attr attr-name="LocationsSettings">
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value">c:\grpwise</component>
    <component name="field">archiveLocation</component>
  </value>
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value"></component>
    <component name="field">archiveLocationLinux</component>
  </value>
</attr>
```

The `archiveLocation` field is the UNC Path or local path of the personal directory where archived messages are stored for Windows clients. The `archiveLocationLinux` field is the Linux path of a local or personal directory where archived messages are stored for Cross-Platform clients. You do not need to include both fields.

Disk Space Management

The archive directory is found in the GroupWise client under *Send > Disk Space Management*. *Disk Space Management* enforces disk space limitations for users on a post office. There are multiple settings for customizing how the disk space is limited for the user.

```

<attr attr-name="DiscardSettings">
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value">1</component>
    <component name="field">userLimitSet</component>
  </value>
  <value type="structured">
    <component name="value">10485760</component>
    <component name="field">boxSizeLimit</component>
  </value>
  <value type="structured">
    <component name="value">75</component>
    <component name="field">boxThresholdLimit</component>
  </value>
  <value type="structured">
    <component name="value">0</component>
    <component name="field">messageSendLimit</component>
  </value>
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value">1</component>
    <component name="field">boxLimitAppliesToCache</components>
  </value>
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value">1</component>
    <component name="field">enableBoxThresholdNotification</
component>
  </value>
  <value type="structured">
    <component name="lock-level">0</component>
    <component name="value">1</component>
    <component name="field">enableBoxSizeNotification</
component>
  </value>
</attr>

```

- ◆ **User Limits:** Disables or enables the other Disk Space Management settings. By default, this option is disabled. The userLimitSet field has two values; 0 is disabled and 1 is enabled.

If you enable it, you can modify the following options otherwise, they are ignored. If you want the lock-level enabled for these options, it must be enabled simultaneously for all options in this group of fields.

- ◆ **Mailbox Size Limit:** Controls the maximum logical amount of disk space available to users for storing messages and attachment files. The setting uses logical disk space because attachments are shared by all recipients users on the same post office. Messages in shared folders are counted as disk space only for the owner of the shared folder.

The boxSizeLimit field is set in bytes. If the value is set to 0 there is no limit on the box size. If you want to set the limit to 10 MB, enter 10485760. The maximum value is 4 GB (64,294,967,295).

- ◆ **Threshold for Warning Users:** Sets a percentage value of the user's mailbox size (specified in the Mailbox Size Limit). When this value is reached, GroupWise triggers a warning to users that the space in their mailboxes is reaching its limit. If users continue to send messages until the limit is met, they are not able to send more until they delete or archive items.

The `boxThresholdLimit` field is set as a percentage. Set the value to 0 or 100 if you do not want GroupWise to send a warning.

- ◆ **Maximum Send Message Size:** Specify the maximum size of a message that a user can send using the GroupWise client. If the user sends an item that exceeds this size, a message notifies the user that the item is too large to send.

The `messageSendLimit` field is set in bytes. If the value is set to 0, there is no limit on the message size. If you want to set the limit to 10 KB, enter 10240. The maximum value is 4 GB (64,294,967,295).

- ◆ **Limits Apply to Cache:** Use the same disk space limits for users' Caching mailboxes on local workstations as you are using for their Online mailboxes in the post office. If you impose this limit on users who have existing Caching mailboxes, their Caching mailboxes might be reduced in size in order to meet the new disk space limit. Such users should be warned in advance so that they can back up their Caching mailboxes before the size reduction takes place. Otherwise, users could lose messages that they want to keep.

The `boxLimitAppliesToCache` field is set to 0 or 1. 0 is No and 1 is Yes. The `userLimitSet` field must be set to 1 for this to function.

- ◆ **Notify the Administrator When Threshold Limit is Exceeded:** Select this option so that the administrator is notified along with the user when the user's mailbox exceeds the size established in the Threshold for Warning Users. The administrator who receives the notification must be defined on the Identification page of the Domain object in ConsoleOne. The administrator cannot be set through the driver.

The `enableBoxThresholdNotification` field is set to 0 or 1. 0 is No and 1 is Yes. The `userLimitSet` field must be set to 1 for this to function.

- ◆ **Notify the Administrator When Size Limit is Exceeded:** Select the option so that the administrator is notified when the user's mailbox exceeds the size established in the Mailbox Size Limit. The administrator who receives the notification must be defined on the Identification page of the Domain object in ConsoleOne. The administrator cannot be defined through the driver.

The `enableBoxSizeNotification` field is set to 0 or 1. 0 is No and 1 is Yes. The `userLimitSet` field must be set to 1 for this to function.

Troubleshooting the Identity Manager Driver for GroupWise

4

This section explains how to troubleshoot the Identity Manager Driver for GroupWise®.

- ♦ [Section 4.1, “Avoiding Data Corruption,” on page 65](#)
- ♦ [Section 4.2, “Viewing Driver Errors in the DS Trace Screen,” on page 65](#)

4.1 Avoiding Data Corruption

If you are running the GroupWise driver on a Windows server and the domain database is on a NetWare® server, you can have data corruption if the Novell Client™ is not configured properly. The default setting for the Novell Client can cause problems for the GroupWise driver.

Make sure that *File Commit* is set to *On* and *File Caching* is set to *Off*. These are properties of the Novell NetWare client and they are not set to these values by default. To change the Novell Client:

- 1 Right-click the red N in the taskbar, then click *Novell Client Properties*.
- 2 Click the *Advanced Settings* tab, then scroll to verify that *File Caching* is *Off* and that *File Commit* is *On*.
- 3 Click *OK*.

4.2 Viewing Driver Errors in the DS Trace Screen

For each event or operation received from the engine, the driver returns an XML document containing a status report in DSTrace. If the operation or event is not successful, the status report also contains a text message describing the error condition.

Table 4-1 Status Levels

Status Level	Description
Success	Operation or event was successful.
Warning	Operation or event was partially successful.
Error	Operation or event failed.
Fatal	A fatal error occurred. The driver shuts down.
Retry	Application server was unavailable. Send this event or operation later.

4.2.1 Understanding Error Text Descriptions

The table below contains errors from the driver that display in the Trace screen. The Error Reason Text column in the table contains the error condition text returned to the Metadirectory engine in the Trace screen. The Level column in the table specifies the status level. The Description column

describes the situations that might cause the condition and possible actions you can take to fix the problem. The status level and error condition text are recorded in the Driver log.

Table 4-2 *Error Descriptions*

Error Reason Text	Level	Description	Recommended Action
Driver initialization error	Fatal	On driver initialization, no parameters were provided.	

Error Reason Text	Level	Description	Recommended Action
Failure initializing GroupWise	Fatal	<p>During initialization the driver cannot communicate with GroupWise. <text> can be one of the following:</p> <p>Error getting driver DN from src-dn attribute</p> <ul style="list-style-type: none"> ◆ The src-dn attribute value in <init-params> did not have a value or the value was not recognized by the driver. <p>Invalid GroupWise Primary Domain Path initialization parameter</p> <ul style="list-style-type: none"> ◆ An invalid format was used to specify the domain path. <p>Invalid Admin User ID.</p> <ul style="list-style-type: none"> ◆ The value of this parameter cannot be "mapi", which is a reserved ID. <p>Missing domain path initialization parameter.</p> <ul style="list-style-type: none"> ◆ The GroupWise primary domain path has not been specified in the Driver Parameters page in iManager. <p>Missing Admin User ID initialization parameter</p> <ul style="list-style-type: none"> ◆ The Admin User ID has not been specified in the Driver Parameters page in iManager. <p>Invalid character in Admin User ID.</p> <ul style="list-style-type: none"> ◆ An invalid character is used in the Admin User ID in the Driver Parameters page in iManager. <p>The User ID contains 1 to 256 characters, and cannot contain the following characters: ()@.:,{}*". The UserID must be unique within its namespace (UserID shares the same namespace as nicknames, resources, and distribution lists.) Do not use "mapi" (reserved IDs) for this value.</p> <p>Various text messages.</p> <ul style="list-style-type: none"> ◆ JNDI Naming exception, class not found exception, unsatisfied link error (can't load .dll), unable to determine initial context, or domain path not correct. <p>Unable to make connection with remote server</p> <ul style="list-style-type: none"> ◆ Missing or invalid authentication information. ◆ Incorrect setup of authentication accounts. 	

Error Reason Text	Level	Description	Recommended Action
GroupWise error	Error	<ul style="list-style-type: none"> ◆ Invalid post office specified. Either the post office does not exist or the driver does not have eDirectory™ access rights (read/write). ◆ The parent of an external post office must be an external domain. ◆ Invalid post office or domain specified. ◆ Query Scope Entry: No base object identified. ◆ Requested Query operation is not supported. ◆ Unsupported Class. The driver received an event for an object other than a Novell® eDirectory User object. ◆ No username specified. The CN attribute was not specified. ◆ java.lang.NullPointerException. The XML document is not correctly formed. It might be syntactically correct, but it doesn't make sense. 	
Unsupported operation	Error	The driver does not understand the XML event.	
Event failed. The Identity Manager association for this driver has been removed.	Error	The driver received an event for an object without an expected GroupWise ID. This is probably caused when the GroupWise account is deleted through the GroupWise snap-ins. The driver has removed the association to the driver in eDirectory for this object.	
Move pending	Retry	When GroupWise is in the process of moving an account from one post office to another, other operations cannot be performed on the account.	
Prior modification pending	Retry	Attempted to move a user to another post office, but previous modifications have not been processed.	
Name already exists in GroupWise	Error	This can occur on an account create, rename, or post office move event.	
Event is for a different system.	Warning (for event)	The received event is not for this GroupWise system and is ignored by the driver. There can be multiple GroupWise systems in a single eDirectory tree. An instance of the driver supports only a single GroupWise system.	Add a rule to allow only items for this GroupWise system.
Event is for a different system.	Error (for query)	The received query is not for this GroupWise system and is ignored by the driver. There can be multiple GroupWise systems in a single eDirectory tree. An instance of the driver supports only a single GroupWise system.	Add a rule to allow only items for this GroupWise system

Error Reason Text	Level	Description	Recommended Action
Error publishing to eDirectory.	Error	<p>GroupWise tried to update attributes in eDirectory for an object. The error message is from Identity Manager or eDirectory.</p> <p>You might have a GroupWise object without a corresponding object in eDirectory. If the corresponding object does exist in eDirectory, the attribute values in eDirectory might not be correct.</p>	
No commands to execute	Error	An input document without any commands was received. This is a probably a style sheet error, where the style sheet didn't pass any commands through.	
Query posted to publisher failed	Error	<p>This error is generated for the following conditions:</p> <ul style="list-style-type: none"> ◆ The driver received a query for an object other than user. ◆ The object to be queried does not exist or cannot be read. 	
Waiting for publisher to start	Retry	The Subscriber channel does not process events until the Publisher channel is initialized and running. The Subscriber channel can initialize before the Publisher channel. Normally both channels initialize within a short time.	
Invalid reference to GroupWise	Warning	<p>This error occurred because there is an invalid reference to GroupWise. This is OK if it occurred on a Modify event that is generated by eDirectory in response to a Move event.</p> <p>This could also occur if required data is missing, incorrect, invalid, or refers to the wrong type of object. In these cases, the error message includes specific information.</p>	
Password synchronization was not processed	Success	The post office security is set to LDAP Authentication. You cannot set the GroupWise password, which would be ignored.	
Rename or Move	Warning	<p>Rename or Move error: The operation might not be supported with this GroupWise domain version.</p> <p>An error probably occurred processing a move or rename. Part of the event might have been processed. Most likely, this operation is not supported in the GroupWise domain version. Please upgrade the GroupWise system.</p>	
eDirectory Error	Retry or Error	This attempt to read from or write to eDirectory failed. See the error message and prior result from eDirectory for more details.	

Documentation Updates

A

The documentation was updated on the following dates:

- ♦ [Section A.1, “May 17, 2006,” on page 71](#)
- ♦ [Section A.2, “May 9, 2006,” on page 72](#)
- ♦ [Section A.3, “March 8, 2006,” on page 74](#)

A.1 May 17, 2006

Updates were made to the following sections.

A.1.1 Using Policies and Filters

The following updates were made in this section:

Location	Change
“Creating External Users” on page 58	Added the following information to the Note: When creating accounts in eDirectory for a non-GroupWise user, make sure the attribute gw:classification=“external” is part of the add event. The attribute can be stored on the User object and on the Post Office object.
“Creating External Post Offices” on page 59	Added the following: If you want the driver to create an external post office, you should modify the Schema Mapping policy or Output Transformation policy to add the XML attribute gw:classification=“external” and the class name of “GroupWise Post Office”.
“Verifying an E-mail Address or Gateway Alias is Unique” on page 60	Added this section.
“Setting GroupWise Client Options with the Driver” on page 61	Added this section.
“Adding a User as a Blind Copy or Carbon Copy participant to a Distribution List” on page 42	Add this section.

A.1.2 Installing and Configuring the Identity Manager Driver for GroupWise

The following updates were made in this section:

Location	Change
Section 2.5.1, "Using Anti-virus Software on a GroupWise System," on page 34	Added this section.

A.1.3 Troubleshooting the Identity Manager Driver for GroupWise

Location	Change
Section 4.1, "Avoiding Data Corruption," on page 65	Added this section.

A.2 May 9, 2006

Updates were made to the following sections. The changes are explained below.

A.2.1 Introducing the Identity Manager Driver for GroupWise

The following updates were made in this section:

Location	Change
Section 1.1.1, "Driver Features," on page 9	Added a new item about the ability to set GroupWise® client options through the driver.
Section 1.1.1.1, "Driver Features," on page 9	Changed each item to a link to where the item is discussed in the documentation.
Section 1.2.3, "Supported Platforms," on page 10	Removed the following: <ul style="list-style-type: none"> ◆ Red Hat* Linux* AS or ES 2.1 or AS 3.0 ◆ SUSU® LINUX Enterprise Server 8 ◆ Solaris* 8 or 9 ◆ AIX* 5.2 L <p>The GroupWise driver cannot run on these platforms, but the Identity Manager engine can run on these platforms.</p>

A.2.2 Installing and Configuring the Identity Manager Driver for GroupWise

The following updates were made in this section:

Location	Change
Table 2-1 on page 14	Added the following to the table: The GroupWise database can be installed on the same NetWare [®] server as Identity Manager or on another NetWare server.
Table 2-1 on page 14	Added the following to the table: The GroupWise database can be installed on the same Linux server as Identity Manager or on another Linux server.
Section 2.2.2, "Understanding a Remote Installation," on page 14	Changed the graphic and text in this section to reflect that you cannot run a Remote Loader driver on a NetWare server. This is not a supported configuration.
"Creating a User Account for the System Containing the GroupWise Domain" on page 18	Removed the second paragraph "If the GroupWise domain exists on Linux, and the driver is on Windows, the Linux account must be created in Samba. For all other platforms, use the following instructions." This is no longer supported.
"Creating a User Account for the System Containing the GroupWise Domain" on page 18	Removed "Linux or" from the last paragraph, because this is no longer supported.
"Defining an Account when the GroupWise Domain Is on NetWare" on page 19	Changed the first paragraph to state: "...user has file system rights to the GroupWise domain directory structure" instead of "...user has rights to the GroupWise domain file structure."
Section 2.3.2, "Importing the Driver Configuration in iManager," on page 20	In Step 6, changed the reference from Step 2 to Step 5. Changed the last sentence to mention the Identity Vault instead of Identity Manager.
"Enforce Admin Lockout Setting" on page 28	Normally it is set to <i>True</i> . You might need to set it to <i>False</i> , if the GroupWise support pack is installed and ConsoleOne is configured to lock out previous versions.
"Create Nicknames" on page 28	Added the following Note: <hr/> NOTE: This option should not be used with GroupWise 6.5.0 or earlier. <hr/>
"Create Accounts During Migration" on page 29	Added: Migration sets the driver association on all users with GroupWise accounts. See Section 2.4.6, "Migrating eDirectory Users to GroupWise," on page 33 for more information.
"Remove GW Account from All Distribution Lists on Expire" on page 29	Changed the description to: When this option is set to <i>True</i> , the driver removes the GroupWise account from all distribution lists when the next event is processed.
"Remove GW Account from All Distribution Lists on Disable" on page 29	Changed the description to: When this option is set to <i>True</i> , the driver removes the GroupWise account from all distribution lists when the next event is processed.

Location	Change
Table 2-5 on page 30	Removed all of the duplicate entries in this table that are in the Table 2-4 on page 27.
Section 2.3.7 Upgrade Paths	Deleted this section. This information is no longer correct.
Section 2.3.6 Upgrading from the 2.1 Version of the driver	Deleted this section. It is not applicable.
Section 2.4.1, "Installation on NetWare," on page 31	Added the Note: "If the GroupWise agents are installed in SYS:\SYSTEM, Novell recommends moving the agents to another directory and modifying the autoexec.ncf file accordingly."
Section 2.5.4 Managing Distribution Lists from the GroupWise Snap-ins	Deleted this section, the driver manages the distribution lists now.

A.3 March 8, 2006

Updates were made to the following sections. The changes are explained below.

A.3.1 Planning for the Installation

The following updates were made in this section:

Location	Change
Section 2.2, "Planning for the Installation," on page 13	Removed the statement: "Configuring the driver to provision accounts between a secondary GroupWise domain and the Identity Vault is not supported. Add more information about supported configurations."
Figure 2-1 on page 14	Removed Linux from Option 2.
Table 2-1 on page 14	Changed where the GroupWise driver and GroupWise can be installed.
Figure 2-2 on page 15	Removed Linux from Option 2.
Section 2.2.2, "Understanding a Remote Installation," on page 14	Changed the Note to contain more information about mounted file system support for the GroupWise driver.

Class and Attribute Descriptions

B

The table in this section lists each Novell® eDirectory™ class and attribute used by the Identity Manager Driver for GroupWise®. The Secondary Effects column in the table contains information about how the attribute is used, special handling, conversions, and relationships of the attributes to other attributes.

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
NDS User			
	50319	Preferred Internet eMail ID	<p>Example: JohnDoe</p> <p>“mapi” is not allowed because it is reserved.</p> <p>This ID must be unique in the entire GroupWise system. It contains 1 to 256 characters, and cannot contain the following characters: () @ . : , { } * ”. The ID must be unique within its namespace (UserID, nicknames, resources, and distribution lists share the same namespace.)</p>
	50045	Internet domain name	Example: MyDomain.com
	59028	LDAP authentication ID in typeful format	Example: cn=admin, o=novell
	50013	Preferred Internet address format (numeric value)	<p>0 - Full (Name.PostOffice.Domain@IDomain.com)</p> <p>1 - Host and User ID (Name.PostOffice@IDomain.com)</p> <p>2 - User ID (Name@IDomain.com)</p> <p>3 - Lastname.firstname</p> <p>4 - Firstname.lastname</p> <p>5 - No setting (reserved)</p> <p>6 - First initial and last name</p>
	50320	Disallowed Internet address formats (bit settings)	<p>0 - None</p> <p>1 - Full (never set this bit)</p> <p>2 - Host</p> <p>4 - User ID</p> <p>8 - Lastname.Firstname</p> <p>16 - Firstname.Lastname</p> <p>32 - First initial and last name</p> <p>You should not set bit one in this attribute value. It is an illegal operation to disallow the Full format.</p> <p>You can “or” values together. For instance, to allow only full name (but disallow all but full name) you would use a value of 62 (0x3E).</p>

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
	50157	Exclusive use of Internet domain name	0 = Off (requires setting an Internet domain name:50045) 1 = On (only recognizes the domain name set in Internet domain name:50045)
CN	None	Common Name of a User object.	When a GroupWise account is created or renamed, this value is used to name the GroupWise account and to set NGW: Object ID. For all other operations, this value is ignored.
Given Name	50091	User's first name	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Surname	50093	User's last name	Synchronizes from eDirectory to GroupWise on Create and Modify events. This attribute is only used on the Publisher channel when creating a default user for resource reassignment. See the note at the end of this table for additional information about this attribute.
Title	50096	User's title	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
OU	50089	User's department	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Telephone Number	50095	User's telephone number	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Facsimile Telephone Number	50145	User's facsimile telephone number	Only synchronizes the telephone number portion from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Description	50032	Provides additional information.	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
company	55022 50310 for GW 6.5 or later	User's company.	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Initials	55019 50322 for GW 6.5 or later	Middle initials, up to 8 characters.	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
Generational Qualifier	55020 50323 for GW 6.5 or later	Jr., III, and so forth, up to 8 characters.	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
personalTitle	55021 50324 for GW 6.5 or later	Dr., Mr., Ms., and so forth, up to 8 characters.	Synchronizes from eDirectory to GroupWise on Create and Modify events. See the note at the end of this table for additional information about this attribute.
NGW: Object ID	50073	GW mailbox name. The name must be unique within a post office. The name contains 1 to 256 characters, and can not contain the following characters: ()@.:",{}*.	<p>This attribute takes its value from the CN attribute. The shim writes it via the Publisher channel to eDirectory. It is set when an account is created and modified, and when an account is renamed. Modifying this value might cause the following attributes to be modified:</p> <ul style="list-style-type: none"> ◆ Email Address ◆ Internet Email Address ◆ NGW: GroupWise ID ◆ Identity Manager association key <p>This attribute should not be modified except as the result of a rename.</p>
NGW: Account ID	50116	Optional field for accounting. It can contain a cost account used for posting charges to this user.	When an account is created, the shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. Normally the driver does not set this value. However, this attribute can be set through the Create rule or Create style sheet. See the note at the end of this table for additional information about this attribute.
NGW: Gateway Access	59001		When an account is created, the shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. Normally the driver does not set this value. However, this attribute can be set through the Create rule or style sheet. See the note at the end of this table for additional information.
NGW: Mailbox Expiration Time	50138		When an account is created, the shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. This attribute can be set through the Create rule or style sheet. For example, the default Output Transformation style sheet uses the eDirectory login expiration time to set this value.
Login Disabled	50058	A Boolean value that indicates whether eDirectory login (authentication) is allowed.	Synchronizes from eDirectory to GroupWise on Create and Modify events. The shim converts true to 1 and false to 0. Setting the GroupWise 50058 attributes to 1 disables the GroupWise account. See the note at the end of this table for additional information.

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
Login Expiration Time	None	Date and time when authentication rights expire.	This eDirectory attribute has no corresponding GroupWise attribute. The value of this attribute is used to set the eDirectory attribute NGW: Mailbox Expiration Time and the GW attribute 50138, which are connected through the Schema Mapping rule.
NGW: File ID	50038	Three characters used to name system files for the user. The value must be unique within a post office. This value is set by GroupWise.	This attribute is set in GroupWise by GroupWise when an account is created. The shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. A Move event could cause this attribute to change. This attribute should not be modified in any style sheet.
NGW: GroupWise ID	None	Uniquely identifies an object in GroupWise. This value is used for the Identity Manager association.	<p>When an account is created or modified, the shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. A GroupWise Move or a Rename event causes this attribute to change. On any Modify event, the shim reads this value through the GroupWise API and, if it has changed, writes it to eDirectory through the Publisher channel. The shim also changes the Identity Manager association value.</p> <p>This attribute only comes through the Subscriber channel when the GroupWise snap-ins change this value. The shim then changes the Identity Manager association key.</p> <p>This value, not the association key, is used to read the GroupWise object. If the association key does not match this attribute value, the association key is updated. This is because the GroupWise snap-ins can change this attribute and the GroupWise snap-ins do not update the association key.</p> <p>On all events, except delete, the shim queries eDirectory for this value. If the value does not exist, the event is discarded.</p> <p>If the shim cannot read the GroupWise object using this value, an error is returned to Identity Manager. This is a rare occurrence.</p>

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
NGW: Visibility	50076	Visibility is used to specify the databases into which an object should be replicated. Controls whether objects appear in the address book.	This attribute is set in GroupWise by GroupWise when an account is created. The shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory. Normally the driver does not set this value. However, this attribute can be set through the Create rule or style sheet. To set, add code to the Create rule. Use 2 for global visibility, or 4 for no visibility. See the note at the end of this table for additional information about this attribute.
Email Address	None		This attribute is generated by GroupWise on create, rename, or Move events. The shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory.
Internet Email Address	None		This attribute is generated by GroupWise on a Create or Rename event, or when any attributes used to generate Internet Email Address are modified. The shim queries GroupWise for this value and writes it via the Publisher channel to eDirectory.
NGW: Post Office	None	DN of the Post Office object.	The driver writes this on Create and Move events.
Any User attribute whose value can be represented as a string.	50106 to 50115, 55002 to 55011	Up to 20 eDirectory user attributes can be mapped to generic GroupWise attributes and displayed in the address book.	The eDirectory attribute names must be added to the filter. The eDirectory and GroupWise attribute names must be added to the Schema Mapping rule. NOTE: For these attributes to appear in the address book, GroupWise must be configured through ConsoleOne®. See the note at the end of this table for additional information about this attribute.
GroupWise Post Office Member	None		On a user create, the shim writes the eDirectory DN of the user to this attribute using the Publisher channel. On a post office move, the shim deletes the user DN from the old post office and writes the user DN to the new post office.
GroupWise Resource			

eDirectory Class or Attribute	GroupWise Attribute	Description	Secondary Effects
NGW: Owner	50081	The user (NGW: Object ID) that owns the resource. An owner is identified by its Object Name.	The shim writes this value to GroupWise and to eDirectory via the Publisher channel. The value is provided by a style sheet or driver option. See the note at the end of this table for additional information about this attribute.
GroupWise Distribution List			
Member	None		On eDirectory user Create or Modify events, a set of Distribution Lists can be specified. The user can only be added as a Member. The shim fills in this attribute through the Publisher channel. On a modify event, a user can be removed from a specified Distribution List (member, BC or CC) or from all distribution lists (member, BC or CC). The shim will remove the user from the appropriate distribution list.
NGW: Blind Copy Member	None		The driver cannot set this attribute. This attribute is populated only via the GroupWise snap-in.
NGW: Carbon Copy Member	None		The driver cannot set this attribute. This attribute is populated only via the GroupWise snap-in.

IMPORTANT: When the Visibility GroupWise attribute is explicitly changed by a style sheet, the corresponding eDirectory attribute must also be updated by the style sheet. Otherwise, the eDirectory User and the GroupWise account are not properly synchronized.

For this attribute, eDirectory is considered the authoritative data source. When the attributes are not synchronized, it is possible that the old value in eDirectory could be used to incorrectly update the correct value in the GroupWise account. Updating the corresponding attribute in eDirectory can prevent this. In the example XSLT code segment below, when an eDirectory User is disabled, the GroupWise account is disabled and the visibility attribute is set to 4. This prevents the account from appearing in the address book. The visibility attribute (50076) is set in GroupWise, together with the disable. The visibility attribute (NGW: Visibility) is set in eDirectory using the channel write-back Identity Manager functionality.

```
<!-- User Disable, Remove Address Book Visibility
  When a GroupWise Account is Disabled
  remove the account from the address book visibility.
  Keep eDirectory and GroupWise object synchronized by
  updating the attributes in both systems.
-->
<xsl:template match="modify-attr[@attr-name='50058']">
  <!-- When Login Disabled is true -->
  <xsl:if test="add-value//value[.='true']">
    <!-- Update the visibility attribute in GroupWise -->
```

```

<!-- Copy the <modify> through to update GroupWise -->
  <xsl:copy>
    <!-- copy everything through -->
    <xsl:apply-templates select="@*|node()"/>
  </xsl:copy>
  <!-- Set the GroupWise visibility attribute (50076) to "4"
  so the account does not show in the address book -->
  <modify-attr attr-name="50076">
    <remove-all-values/>
    <add-value>
      <value type="int">4</value>
    </add-value>
  </modify-attr>
  <!-- Update the visibility attribute in eDirectory -->
  <!-- Send a command to modify "NGW: Visibility" in the
  eDirectory User object -->
  <xsl:variable name="command">
    <modify class-name="User">
      <!-- dest-dn and dest-entry-id identify the
  User object in eDirectory -->
      <xsl:attribute name="dest-dn">
        <xsl:value-of
  select="../@src-dn"/>
      </xsl:attribute>
      <xsl:attribute name="dest-entry-id">
        <xsl:value-of select="../@src-entry-id"/
  >
      </xsl:attribute>
      <!-- Set NGW: Visibility (50076) in eDirectory
  to "4" -->
      <modify-attr attr-name="NGW: Visibility">
        <remove-all-values/>
        <add-value>
          <value type="int">4</value>
        </add-value>
      </modify-attr>
    </modify>
  </xsl:variable>
  <xsl:variable name="result"
  select="cmd:execute($srcCommandProcessor, $command)"/>
  </xsl:if>
</xsl:template>

```