

Novell DirXML[®] Driver for GroupWise[®]

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IMPLEMENTATION GUIDE

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Novell[®]

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DirXML Driver for GroupWise Implementation Guide

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About This Guide

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

The driver provides data integration between users in eDirectory with GroupWise accounts in the GroupWise domain. For example, the driver can create e-mail accounts automatically 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 The driver can also disable an e-mail account when a user is no longer active.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 DirXML Driver for GroupWise,” on page 9
- ♦ Chapter 3, “Installing and Configuring the DirXML Driver for GroupWise,” on page 33
- ♦ Chapter 2, “Using Policies and Filters,” on page 15
- ♦ Chapter 4, “Troubleshooting the DirXML Driver for GroupWise,” on page 47
- ♦ Appendix A, “Class and Attribute Descriptions,” on page 53

Additional Documentation

For documentation on using DirXML and the other DirXML drivers, see the [DirXML Documentation Web site](http://www.novell.com/documentation/lg/dirxmldrivers) (<http://www.novell.com/documentation/lg/dirxmldrivers>).

Documentation Updates

For the most recent version of this document, see the [DirXML drivers documentation Web site](http://www.novell.com/documentation/lg/dirxmldrivers/index.html) (<http://www.novell.com/documentation/lg/dirxmldrivers/index.html>)

Documentation Conventions

The term *driver* refers to all components of DirXML 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.

User Comments

We want to hear your comments and suggestions about this manual and the other documentation included with Novell DirXML. To contact us, send e-mail to proddoc@novell.com.

1

Introducing the DirXML Driver for GroupWise

The DirXML[®] Driver for GroupWise[®] is designed to synchronize user data between Novell[®] eDirectory[™] and to manage GroupWise accounts and account information. When a user in eDirectory is modified, created, renamed, moved, or deleted, the driver synchronizes the changes with the GroupWise account.

Because eDirectory is the authoritative data source, any data created, modified, renamed, and deleted in eDirectory will synchronize to GroupWise.

The driver runs on the Windows* NT*/2000 and NetWare[®] platforms. When used in conjunction with the DirXML Remote Loader, the driver can operate on Linux or Solaris platforms.

New Features

The following section contains information about the new driver features, as well as new features provided in DirXML 2.0.

Driver Features

- ◆ You can now synchronize eDirectory groups with GroupWise distribution lists.

DirXML 2.0 Features

DirXML 2.0 includes the following new features. For more information, refer to the *Nsure Identity Manager 2 Administration Guide* (<http://www.novell.com/documentation/lg/dirxml20/admin/data/alxnk27.html>).

Password Management

The new password management framework includes the following benefits:

- ◆ New Password Policies let you create rules for passwords and assign them to users, containers, or the whole eDirectory tree. You can enable Universal Password, which lets you enforce detailed criteria for passwords and allows for special characters.
- ◆ Password Synchronization 2.0 is now cross-platform, and it lets you enforce your Password Policies across connected systems. New notification templates let you automatically send messages to users about their password synchronization status.
- ◆ Using Password Policies, you can also provide Forgotten Password Self-Service and Reset Password Self-Service to your users. These new features can help you reduce help desk calls. Notification templates are also included for automatically sending forgotten password and password hint messages to users.

Policy Builder Interface and DirXML Script for Creating Policies

For the most common tasks, you can now use the new Policy Builder interface to create policies for your driver without writing XSLT code. The Policy Builder helps you set up policies using the new DirXML Script.

Role-Based Entitlements

For many drivers, Role-Based Entitlements is an option in the sample driver configuration that you can choose when importing the driver.

Role-Based Entitlements let you grant entitlements on connected systems to a group of Novell® eDirectory™ users. Using Entitlement Policies, you can streamline management of business policies and reduce the need to configure your DirXML drivers.

Novell Nsure Audit

Novell Nsure™ Audit is a centralized, cross-platform auditing service. It collects event data from multiple applications across multiple platforms and writes the data to a single, non-repudiable data store. Nsure Audit is also capable of creating filtered data stores. Based on criteria you define, Nsure Audit captures specific types of events and writes those events to secondary data stores.

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 value for a particular GCV, the driver inherits the value for that GCV from the driver set.

GCVs allow you to specify settings for new DirXML features such as Password Synchronization, as well as settings that are specific to the function of an individual driver configuration. Some GCVs are provided with the drivers, but you can also add your own. You can refer to these values in a policy to help you customize your driver configuration.

Driver Heartbeat

The DirXML engine now accepts driver heartbeat documents from drivers, and drivers can be configured to send them.

Methods for Managing GroupWise Accounts

Before the DirXML 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 through the use of DirXML. We recommend that you do not use the ConsoleOne snap-ins for anything the driver is configured to do.

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

- ◆ Distribution List administration
- ◆ GroupWise system-wide parameters, such as nickname expiration date
- ◆ X.400 information
- ◆ Resources
- ◆ Internet Addressing

- ◆ Mailbox library maintenance
- ◆ Client options and preferences
- ◆ Grafting
- ◆ Backup and restore

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 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, it will result in redundant synchronization of data. Data changes will be synchronized by both the snap-ins and the driver. Redundant synchronization of data might result in warnings or errors in the DirXML logs. However, these warnings or errors can usually be ignored.

IMPORTANT: If you create eDirectory users with ConsoleOne, be sure to use a ConsoleOne without the GroupWise snap-ins installed. The ConsoleOne snap-ins for GroupWise will come behind the driver and remove some vital data from eDirectory. This has been fixed in the snap-ins released with GroupWise 6.5.

Driver Components

The driver uses the following components:

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

GroupWise API

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

Driver Shim

A Java* driver shim that communicates between the DirXML engine and the GroupWise API. This driver shim is installed together with the GroupWise API.

Driver Configuration

This XML file contains all eDirectory objects necessary for the driver, including the appropriate policies for adding, modifying, and deleting or disabling GroupWise accounts. In addition, the driver file controls the information being sent from eDirectory to GroupWise. The driver configuration file should be installed to computer where your management tool (iManager) resides.

Publisher Channel Issues

Objects in eDirectory also contain GroupWise attributes. The Publisher channel specifies these attributes. It is not recommended that you make any modifications to the Publisher channel.

Subscriber Channel Issues

GroupWise accounts are administered through eDirectory. The Subscriber channel is used to keep GroupWise synchronized with eDirectory. Driver customizations will usually be done in the Subscriber channel or at the driver level. The Subscriber channel receives commands from the DirXML 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 preconfigured attributes from the Subscriber filter or the Mapping policy.

Subscriber Filter

The Subscriber filter provided with the driver consists of the following class and attributes. Do not remove attributes from the Subscriber channel filter.

Classes	Attributes
User	company CN Description FacsimileTelephone Number Generational Qualifier Given Name Initials Login Disable Login Expiration Time NGW: GroupWise ID OU personalTitle Surname Telephone Number Title

Publisher Filter

The Publisher Filter provided with the driver consists of the following classes and attributes. The Publisher Filter should not be modified or changed in any way. Attributes added to the Publisher Filter would not be processed. These classes and attributes are in the Publisher Filter so the shim can set them based on events from eDirectory. Each of these events requires special processing by the shim. The driver does not receive events from GroupWise. The shim must read these attributes from GroupWise in order to set them in eDirectory. Do not add to, modify, or delete from the Publisher Filter.

Classes	Attributes
GroupWise Distribution List	Member NGW: Blind Copy Member NGW: Carbon Copy Member
GroupWise Resource	NGW: Owner

Classes	Attributes
User	EEmail Address Internet EMail Address NGW: Account ID NGW: File ID NGW: GateWay Access NGW: GroupWise ID NGW: Mailbox Expiration Time NGW: Object ID NGW: Post Office NGW: Visibility Surname
GroupWise Post Office	NGW: Distribution List Member Member

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Using Policies and Filters

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.

Using Policies

The DirXML® Driver for GroupWise synchronizes data and events from eDirectory through a series of policies. Policies help DirXML make decisions as the documents transverse a channel. A policy may determine that a document needs to be transformed in some way before being given 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 will not be allowed by that policy.

The policies in this chapter 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.

What the Driver Does by Default

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.

Modifying Default Settings in Policies and Filters

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

1. Modify the Subscriber channel filter to include additional attributes to be synchronized. See [“Modifying the Subscriber Channel Filter” on page 16](#) 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 16](#) for more information.
3. Modify the Subscriber Create policy. See [“Modifying the Create Policy” on page 16](#) for more information.
4. Modify the Subscriber Placement policy. See [“Modifying the Subscriber Placement Policy” on page 17](#) for more information.

Modifying the Subscriber Channel Filter

The Subscriber Channel filter consists of the classes and attributes listed in the table below. You modify the Subscriber Channel filter by adding all the attributes to the filter that you want synchronized or available for use in style sheets. Do not remove any attributes from the Subscriber channel filter that are included in the driver configuration. You should only add attributes to the Subscriber Channel filter.

Class	Attributes
User	CN Description Facsimile Telephone Number Given Name Login Disable Login Expiration Time NGW: GroupWise ID OU Surname Telephone Number Title company Generational Qualifier Initials personalTitle

To modify the Subscriber Channel filter:

- 1** In Novell iManager, search for the Subscriber object.
- 2** Make sure the Filter property page is displayed.
- 3** Click an existing class in the filter to display the Edit Filter dialog box.
- 4** Add the attributes you want synchronized.
- 5** Click OK.

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 may, 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 sets the initial password to <surname>-<CN>.

Modifying the Subscriber Placement Policy

This policy is used to specify the GroupWise post office. The Subscriber Placement policy places all new users in the same post office in GroupWise. The Subscriber Placement policy can also determine the post office based on an attribute value or the eDirectory user container.

Modifying Policies

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

Specifying the GroupWise Post Office

The Subscriber Placement rule is used to specify the GroupWise post office. By default, the GroupWise Subscriber Placement rule puts all new users in the same post office. The Placement rule can also determine the post office based on an attribute value or the eDirectory user container. The following example determines the post office based on the eDirectory container where the user was created.

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- NDS paths are in "slash" format.-->
<!-- GroupWise paths are in "slash" format. -->
<placement-rules dest-dn-format="slash" src-dn-format="slash">
  <!-- Placement rule for Engineering -->
  <placement-rule>
    <match-class class-name="User"/>
    <match-path prefix="\GWDriverTree\Novell\Users\Engineering"/>
    <placement>\GWDRIVERTREE\Novell\GroupWise\Post Offices\Engineering PO</placement>
  </placement-rule>
  <!-- Placement rule for Sales -->
  <placement-rule>
    <match-class class-name="User"/>
    <match-path prefix="\GWDriverTree\Novell\Users\Sales"/>
    <placement>\GWDRIVERTREE\Novell\GroupWise\Post Offices\Sales PO</placement>
  </placement-rule>
</placement-rules>
```

Specifying Distribution Lists

The code segments in this section show how to:

- ◆ Create a user as a member of two distribution lists
- ◆ Add a user to two distribution lists
- ◆ Deleting a user from all distribution lists
- ◆ Creating a new user as a member of a distribution list based on the User's eDirectory container

```
<!-- While creating a new user, place it in two the Distribution Lists -->
<add-attr attr-name="Distribution List DN">
  <value type="string">
    <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Sales DL]]>
  </value>
  <value type="string">
    <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Engr DL]]>
  </value>
</add-attr>
```

```
<!-- Add an existing user to two Distribution Lists -->
```

```

<modify-attr attr-name="Distribution List DN">
  <add-value>
    <value type="string">
      <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Sales DL]]>
    </value>
    <value type="string">
      <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Engr DL]]>
    </value>
  </add-value>
</modify-attr>

<!-- Remove a user from two Distribution Lists -->
<modify-attr attr-name="Distribution List DN">
  <remove-value>
    <value type="string">
      <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Sales DL]]>
    </value>
    <value type="string">
      <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Engr DL]]>
    </value>
  </remove-value>
</modify-attr>

<!-- Remove a user from all Distribution Lists -->
<modify-attr attr-name="Distribution List DN">
  <remove-all-values/>
</modify-attr>

<!-- add a Distribution List based on the User's container -->
<xsl:variable name="container-dn">
  <xsl:call-template name="get-container-dn">
    <xsl:with-param name="dn" select="@src-dn"/>
  </xsl:call-template>
</xsl:variable>
<xsl:choose>
  <xsl:when test="$container-dn = '\GWDRIVERTREE\Novell\Users\Sales'">
    <add-attr attr-name="Distribution List DN">
      <value type="string">
        <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Sales DL]]>
      </value>
    </add-attr>
  </xsl:when>
  <xsl:when test="$container-dn = '\GWDRIVERTREE\Novell\Users\Engineering'">
    <add-attr attr-name="Distribution List DN">
      <value type="string">
        <![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution Lists\Engr DL]]>
      </value>
    </add-attr>
  </xsl:when>
</xsl:choose>
<!-- this template returns the container object's DN -->
<xsl:template name="get-container-dn" xmlns:jstring="http://www.novell.com/nxsl/java/
java.lang.String">
  <xsl:param name="dn"/>
  <xsl:variable name="fulldn" select="jstring:new($dn)"/>
  <xsl:variable name="index" select="jstring:lastIndexOf($fulldn,'\')"/>
  <xsl:if test="$index != -1">
    <xsl:value-of select="jstring:substring($fulldn,0,$index)"/>
  </xsl:if>
</xsl:template>

```

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 only set in GroupWise, it could be overwritten with the value in eDirectory. The following example shows setting the Description 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>
```

Configuring the GroupWise UserID

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

Note that when an attribute used to construct the CN is modified, a GroupWise rename event should be generated via the style sheets. 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 User ID contains 1 to 256 characters, and cannot contain the following characters: ()@.,{}*". An Output Transformation style sheet or event can monitor the attributes used to build the CN. If one of these attributes change, a rename event should also be generated. Any attributes used here need to be added to the list of required attributes. You should also strip out <rename> and <newname> tags.

```
<!--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>
```

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 Subscriber filter. In addition, the eDirectory and GroupWise attribute names must be connected in the Schema Mapping rule.

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

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

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 with the Create Nicknames option on the Driver Properties Page on the Driver Options tab. When you set this option to Yes, nicknames will automatically be created when an eDirectory rename occurs or when a GroupWise account is moved. When you set this option to No, nicknames are not created. Nickname creation requires GroupWise 6 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.

This XSLT code segment specifies that a GroupWise nickname will 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>
```

The XSLT code segment below specifies that a GroupWise nickname will not be created:

```
<!--
  Override the "Create Nicknames" Driver Option
-->
<xsl:template match="rename">
  <xsl:copy>
    <!-- Do not create a GroupWise nickname. -->
    <xsl:attribute xmlns:gw="http://www.novell.com/dirxml/gwdriver" name="gw:create-
nickname">false</xsl:attribute>
    <xsl:apply-templates select="@*|node()"/>
  </xsl:copy>
</xsl:template>
```

Adding New GroupWise Accounts to a Distribution List

You can automatically add new GroupWise accounts to a distribution list when they are created. Distribution lists are used by organizations to assure the appropriate individuals are included in various internal communications. Wherever possible, organizations want to 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 XSLT code segment is:

```
<!-- add a Distribution List based on the User's container -->
<xsl:variable name="container-dn">
  <xsl:call-template name="get-container-dn">
    <xsl:with-param name="dn" select="@src-dn"/>
  </xsl:call-template>
</xsl:variable>
<xsl:choose>
  <xsl:when test="$container-dn = '\GWDRIVERTREE\Novell\Users\Sales'">
    <add-attr attr-name="Distribution List DN">
      <value type="string"><![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution
Lists\Sales DL]]></value>
    </add-attr>
  </xsl:when>
  <xsl:when test="$container-dn = '\GWDRIVERTREE\Novell\Users\Engineering'">
    <add-attr attr-name="Distribution List DN">
      <value type="string"><![CDATA[\GWDRIVERTREE\Novell\GroupWise\Distribution
Lists\Engr DL]]></value>
    </add-attr>
  </xsl:when>
</xsl:choose>
```

Specifying a New Resource Owner on an Owner Delete

If the owner of a resource (a conference room, for instance) is deleted, the driver will automatically assign 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, it will create the default user and assign 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 will always be 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>
```

Specifying a New Resource Owner on an Owner Disable

If the owner of a resource (a conference room, for instance) is disabled, the driver will automatically assign that resource to another owner. In this process, you designate a default user for all resource assignments Default Resource Owner UserID in the parameter.

When an eDirectory User Login Expiration Time attribute is set, the GroupWise resources of the 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 expire 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.

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:

```
<!-- 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>
```

Specifying a New Resource Owner on an Owner Expire

If the owner of a resource (a conference room, for instance) is expired, you can configure the driver to automatically assign that resource to another owner. 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, it creates a default user and assigns it as the default owner only if the Reassign Resource Ownership driver parameter is set to Yes.

When an eDirectory User Login Expiration Time attribute is set, the GroupWise resources of the 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 expire 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 <modify-attr> element.

The resources are assigned to the override owner even when the Reassign Resource Ownership parameter is set to No. 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 segment is:

```
<!-- 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>

```

Controlling Creation of GroupWise Accounts

There may 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 will 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 an attribute on the eDirectory user that specifies whether a GroupWise account is to be created (true/false). For example, the attribute would be: createGroupWiseAccount.

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 will cause the GroupWise account to be created.

The attribute createGroupWiseAccount must be added to the Create policy as a required attribute and 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>

```

Moving Users from One Post Office to Another Post Office

When a style sheet is not configured to move GroupWise accounts, it is recommended that you use the GroupWise 6 snap-ins (or higher) for user moves. If you use an older version of the GroupWise snap-ins, it can cause the driver to generate errors.

When the Output Transformation style sheet is configured to move GroupWise accounts, it is recommend that user moves be made in eDirectory and let the driver assign the object to a new post office in GroupWise. The XSLT code segment for the Output Transformation policy is 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

```

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 or 55002-55011. You must first add these eDirectory attributes to the Subscriber filter. Any attribute names you add to the Subscriber filter must be added to the Schema Mapping policy. You must configure these attributes in the GroupWise snap-ins for these attributes to appear in the GroupWise address book.

Renaming Users

It is recommended 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 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.

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.

It is not recommended 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 SP1 or higher. If you use an older version of the GroupWise snap-ins, it can cause the driver to generate errors.

First Example

```
<!-- 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>
```

Second Example

```
<!--
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>
```

Creating a Gateway Alias

It may be useful to set a gateway alias for a user. The following XSLT code segment shows how to set a gateway alias in the Output Transformation stylesheet. Your code is responsible for generating the value of the gateway alias.

```
<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>
  </xsl:copy>
</xsl:template>
```

```

        </add-attr>
        <xsl:apply-templates select="*" | comment() | processing-instruction()
        | text()"/>
    </xsl:copy>
</xsl:template>

```

Querying for a Nickname

It may be useful for you to know the GroupWise Nickname. The following Output Transformation stylesheet shows how to query for the GroupWise Nickname. 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 which is 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 will want to 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>

```

Querying for a Gateway Alias

The following XSLT code segment shows how to query in the Output Transformation policy for the 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>

```

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="gw-aliases" select="query:query($destQueryProcessor, $query)//
instance"/> </xsl:template>

```

```

    </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>

```

Synchronizing 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 employees' information. The driver has the ability to create GroupWise external users, which enables the driver to obtain data from other e-mail systems (via eDirectory) and display it in 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.
- ◆ 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, rules, and style sheets based on your business processes.

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 30](#).
- ◆ Identify the external post office by [“Specifying an External Post Office in an Add Event” on page 30](#).

You must 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. When creating accounts in eDirectory for a non-GroupWise user, the user's class name must become GroupWise External User.

When a new GroupWise External User is added to GroupWise, the driver creates an association on the eDirectory user. If the non-GroupWise user's information changes in eDirectory, the driver will synchronize those changes to GroupWise. If the association key is altered or deleted, the connection will be broken, and GroupWise will not synchronize any changes made to the eDirectory user.

Specifying an External Post Office in an Add Event

If you do not use the driver to create an external post office, you will 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 rule will be 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 or Output Transformation policy so that it changes the class name to a GroupWise External Post Office.

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 30](#).

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 will be 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 want to 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

Installing and Configuring the DirXML Driver for GroupWise

This section helps you do the following:

- ◆ “Meeting the Requirements for the Driver” on page 33
- ◆ “Planning for the Installation” on page 33
- ◆ “Installing the Driver” on page 40
- ◆ “Upgrading from the 2.0 Version of the Driver” on page 42
- ◆ “Post-Installation Tasks” on page 43

Meeting the Requirements for the Driver

This section lists the software requirements necessary to run the DirXML[®] Driver for GroupWise[®].

- ◆ Novell Nsure Identity Manager 2
- ◆ Novell Client™ 4.81 or later for Windows NT/2000
- ◆ GroupWise 5.5, GroupWise 5.5 Enhancement Pack, GroupWise 6, or GroupWise 6.5.

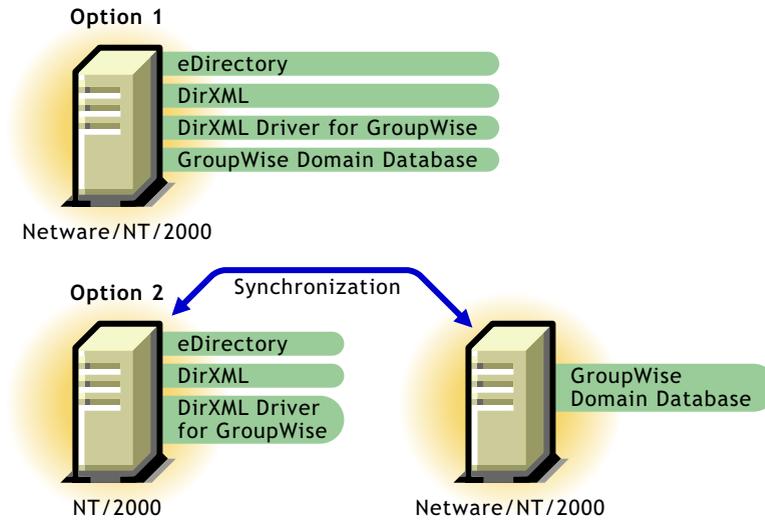
Planning for the Installation

Before you install and use the driver, you must plan a local or remote installation and define user accounts for GroupWise driver access.

Understanding a Local Installation

A local installation installs the driver on the same Windows NT/2000 or NetWare computer where you installed DirXML and eDirectory. The GroupWise domain database can either be on the same computer or a different computer.

Local System Configuration

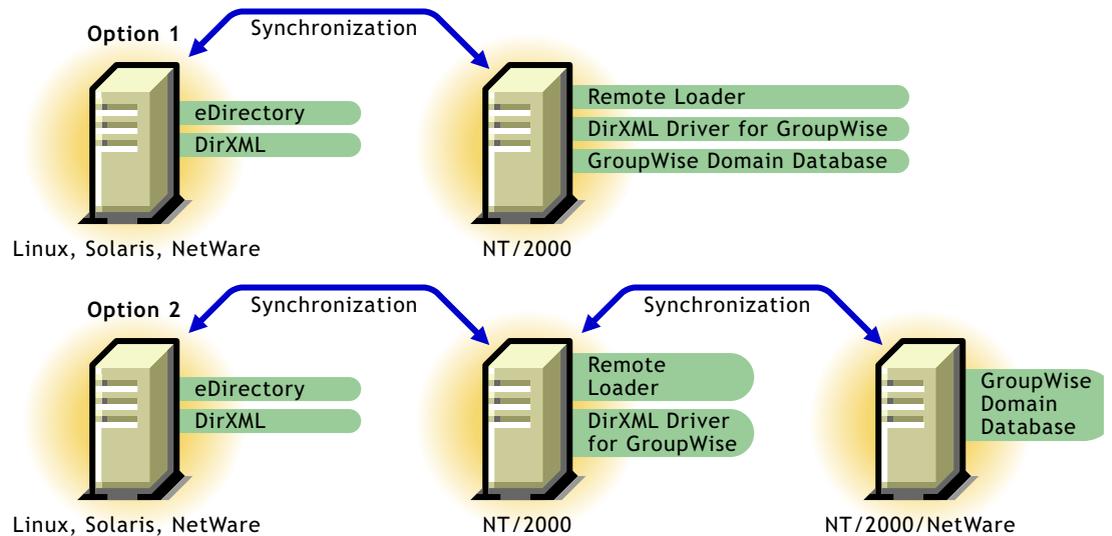


Understanding a Remote Installation

A remote installation installs the driver on a different computer than the one where DirXML and eDirectory are installed. You will want to use this configuration when DirXML and eDirectory are installed on a Linux* or Solaris* platform. In this case, the driver is installed with the DirXML Remote Loader on a Windows NT/2000 system. The GroupWise domain database can be on any of the systems or on a separate system.

GroupWise can be installed on a separate system, on the DirXML system, or on the driver system (two-system installation), or all components can be installed on a single Windows NT/2000 system.

Remote System Configuration



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 will create the same username 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.

In order to configure authentication you should:

- ◆ “Create a User Account for the System Containing the Driver” on page 35
- ◆ “Create a User Account for the System Containing the GroupWise Domain” on page 38

Create a User Account for the System Containing the Driver

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

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.

After you have created the user account for the driver system, refer to “[Create a User Account for the System Containing the GroupWise Domain](#)” on page 38.

When the Driver is on Windows NT

- 1** From the Start Menu, select Programs, Administrative Tools (Common), then click User Manager.
- 2** Select User > New User, then enter a new user name.
The user name must be the same on both systems.
- 3** Enter a case-sensitive password.
The password must be the same on both systems.
- 4** Select Password Never Expires, then uncheck all other boxes.
- 5** Select Groups > Add Administrators to the "Member of", and click OK.
IMPORTANT: This user should be part of the administrator group.
- 6** Click OK.
- 7** Select the user you just created.
- 8** Select Policies > User Rights.
- 9** Mark the Show Advanced User Rights check box.
- 10** Select Log on as a Service from the Rights drop-down list.
- 11** Click Add, then Show Users.
- 12** Select the user you just created.
- 13** Click Add, then click OK.
- 14** Click OK.
- 15** Close the User Manager window.
- 16** Restart the system.

When the Driver is on Windows 2000

To define a user account when the driver is on Windows 2000:

- 1** From the Start Menu, click Settings, Control Panel, Administrative Tools, then click Computer Management.
- 2** In the Tree view, open Local Users and Groups.
- 3** Click Users, Action, then click New User.
- 4** Enter a user name, and enter a case-sensitive password.
The user name and password must be the same on both systems.
- 5** Click Password Never Expires, click Create, then click Close.
- 6** Uncheck all other boxes.
- 7** In the Tree view, select Groups.
- 8** Double-click Administrators.
- 9** Click Add.

- 10** Select the user you just created by clicking Add, then click OK.
- 11** Click OK.
- 12** Close the Computer Management window.
- 13** Select Local Security Policy from the Administrative Tools window.
- 14** Open Local Policies in the Tree view.
- 15** Select User Rights Assignment.
- 16** Double-click Log On As a Service.
- 17** Make sure your user is displayed and has the "effective rights" box checked.
- 18** Select Add.
- 19** Enter the user you just created, click Add, then click OK.
- 20** Click OK.
- 21** Close the Local Security Settings window.
- 22** Close the Administrative Tools window.
- 23** Restart your computer.

When the Driver is on Windows 2000 AD Domain Controller

To define a user account when the driver is on the Windows 2000 AD domain controller:

- 1** From the Start Menu, click Settings, Control Panel, Administrative Tools, then click Active Directory Users and Computers.
- 2** In the Tree view, click Users, Action, New, then click User.
- 3** Enter the full name, then enter the user login name.
The user login name is used in the driver configuration. The user name must be the same on both systems.
- 4** Click Next.
- 5** Enter 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** In the Tree, select Builtin, then click Administrators, Members, then click Add.
- 9** Select the full name of the user you entered in step 3, 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** In Tree, expand the Security Settings, click Local Policies, then User Rights Assignment.
- 14** Select Log On As a Service and check Define these policy settings. Click Add. > Add > Browse.
- 15** Browse to and select the user you created in step 3. Click Add, OK, then OK.
- 16** Click OK and close the Domain Controller Security Policy window.

- 17** In the Administrative Tools window, select Local Security Policy.
- 18** In Tree, expand Local Policies, then click User Rights Assignment.
- 19** Select Logon as a service, check Local Policy Settings for the user created in step 3, then click OK.
- 20** Close the Local Security Policy window.
- 21** Restart the system.

Create a User Account for the System Containing the GroupWise Domain

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

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 [“Create a User Account for the System Containing the Driver” on page 35](#).

When the GroupWise Domain is on Windows NT

To define a user account the driver is on Windows NT:

- 1** From the Start Menu, select Programs > Administrative Tools (Common) > User Manager.
- 2** Select User > New User > enter a name.
The user name must be the same on both systems.
- 3** Enter a case-sensitive password.
The password must be the same on both systems.
- 4** Select Password Never Expires and uncheck all other boxes.
- 5** Select Groups > Add Administrators to the "Member of", and click OK.
- 6** Click OK.
- 7** Select the user you just created.
- 8** Select Policies, User Rights, then click the Show Advanced User Rights check box.
- 9** Select Log on as a Service from the Rights drop-down list.
- 10** Click Add, Show Users, then click the user you just created.
- 11** Click Add, then click Ok.
- 12** Click Ok and close the User Manager window.
- 13** Double-click the My Computer icon on the desktop.
- 14** Right-click the drive that contains the GroupWise Domain > Properties > Sharing.
- 15** Select New Share.
- 16** Enter a share name to be used by the drive.
- 17** Restart the system.
- 18** Select Permissions > Everyone > Remove.
- 19** Select Add.

- 20** Select the user you added above.
- 21** Click Add > OK.
- 22** Select Permissions: Full Control > then click OK three times.
- 23** Restart the system.

When the GroupWise Domain is on Windows 2000

To define a user account when the GroupWise domain is on Windows 2000:

- 1** From the Start Menu, click Settings > Control Panel > Administrative Tools > Computer Management.
- 2** In the Tree view, open Local Users and Groups > Users > Action > New User.
- 3** Enter a user name.
The user name must be the same on both systems.
- 4** Enter a case-sensitive password.
- 5** Select Password Never Expires, and then uncheck all other boxes.
- 6** Click Create > Close.
- 7** Close the Windows Manager window.
- 8** Double-click the My Computer icon on the desktop.
- 9** Right-click the drive that contains the GroupWise Domain > Properties > Sharing.
- 10** Select New Share.
- 11** Enter a share name to be used by the drive.
- 12** Restart the system.
- 13** Select Permissions > Everyone > Remove.
- 14** Select Add.
- 15** Select the user you added above.
- 16** Click Add > OK.
- 17** Select Permissions: Full Control > OK > OK > OK.
- 18** Restart the system.

When the GroupWise Domain is on NetWare

If the driver is running on Windows NT/2000 and the GroupWise domain is on NetWare, it's especially important to verify that this user has rights to the GroupWise primary domain database. If access is not granted to this user, changes will not replicate to the rest of the GroupWise system.

To define a user account when the GroupWise domain is on NetWare:

- 1** In ConsoleOne, create a user in NetWare with the same user name and password as the Windows user account.
- 2** Give the user Read, Write, Create, Erase, Modify, and File Scan access to the GroupWise primary domain database and subdirectories.

Installing the Driver

You install the driver as part of the Novell Nsure Identity Manager 2 installation program. For installation instructions, refer to the *Novell Nsure Identity Manager 2 Administration Guide* (<http://www.novell.com/documentation/lg/dirxml20/index.html>).

This section explains how to import the driver configuration for the DirXML 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.

In this section, you will find information for:

- ◆ “Configuration Information” on page 40
- ◆ “Importing the Driver Configuration” on page 42
- ◆ “Activating the Driver” on page 43

Configuration Information

As you import the driver configuration file, you will be prompted for the following information.

Parameter name	Parameter Description
Driver name	The actual name you want to use for the driver.
GroupWise Domain Database Version	The version of the GroupWise domain database to which this driver should connect.
Primary Domain Server	<p>The host name or IP address for the server that contains the GroupWise primary domain database (wpdomain.dp) to which the driver connects. The format is [hostname], [hostname.com], or [###.###.###.###] when GroupWise is on a remote system, or [blank] when the GroupWise domain database is on the same physical system as the driver.</p> <p>When this driver is installed on NetWare, it can access a GroupWise domain database only on the local NetWare file system.</p>
Primary Domain Path	<p>The path to the directory containing the GroupWise primary domain database (wpdomain.db) to which this driver should connect.</p> <p>When this driver is installed on NetWare, the format is:</p> <ul style="list-style-type: none">◆ [volume:\Novell\GroupWise\Domain] - The database is on the local or remote NetWare server (there is a colon after the volume) <p>When this driver is installed on Windows, the format options are:</p> <ul style="list-style-type: none">◆ [volume\Novell\GroupWise\Domain] - The database is on a remote NetWare system (there is no colon after the volume)◆ [c:\Novell\GroupWise\Domain] - The database is on the local Windows system◆ [c\$\Novell\GroupWise\Domain] - The database is on a remote Windows system
Username	The username this driver uses to authenticate to the remote system that contains the GroupWise database. It must be the name of a user account on the remote system. When this driver is installed on Windows, the same username and password must also be configured on that Windows system. Leave this field blank when the GroupWise database is on the same physical system as this driver.
Password	The password for the username entered above. If the username field is blank, you should not enter a password.

Parameter name	Parameter Description
eDirectory User Context	When the GroupWise domain database is on a remote NetWare server, use the eDirectory context of the Username specified above. The context is specified as [TREE\Novell\admins], [ou=admins.o=Novell], or [admins.Novell]. Otherwise, leave this field blank.
Default Post Office	The DN of the default GroupWise post office for creating accounts. The format is either in slash notation [Novell\GroupWise\PO], dot notation [PO.GroupWise.Novell], or you can browse to the post office.
Synchronize Groups	Select Yes if you want this driver to synchronize eDirectory groups to GroupWise distribution lists. Otherwise, select No.
Create Nicknames	Select Yes to specify that the driver creates GroupWise nicknames when GroupWise accounts are renamed or moved to another post office. Otherwise, select No. When a GroupWise account is renamed or moved to another post office, you need to decide if the driver should create a nickname using the old account name. Rename and Move events change the e-mail address of the account. When Yes is specified, e-mails sent to the old E-mail address will be delivered to this account. The GroupWise 6 SP1 agents are required for nicknames to be created. The default is No.
Reassign Resource Ownership	Select Yes to specify that this driver should reassign ownership of resources when GroupWise accounts are disabled or expired. Otherwise, select No. If you choose Yes, the resources are assigned 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. The default is No.
Default Resource User ID	Specify the prefix of the default user who will become the new owner of resources that are reassigned. The default is IS_admin. You should always specify this name even when the Reassign Resource Ownership option is No. 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. IMPORTANT: The driver will not start if a default user prefix is not specified.
Create Accounts During Migration	Select Yes or No to specify that this driver should create new GroupWise accounts for users without a current account during a migration from eDirectory. Migration causes DirXML 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. If a corresponding GroupWise account already exists, the association key is set. Otherwise, when you specify Yes, the driver creates a GroupWise account. When No is specified, the add event is ignored and the driver issues a warning that this option is set to No. The default is No.
Configure Data Flow	Data flow can be configured at this time for the driver. Select the data flow that you desire. Bidirectional means that both GW and eDirectory are authoritative sources of the data synchronized between them. GW to eDirectory means that GroupWise is the authoritative source. eDirectory to GW means that eDirectory is the authoritative source.
Enable Entitlements	Select Yes if you are also using the Entitlements Service driver and want this driver to use Role-Based Entitlements. Otherwise, select No.
Action On eDirectory User Delete	When a user is deleted in eDirectory, specify the action you want the driver to take on an associated GroupWise account. Choose from Delete the GroupWise Account, Disable the GroupWise Account, Expire the GroupWise Account, or Disable and Expire the GroupWise Account.
Action On eDirectory User Expire/Unexpire	When a user login in eDirectory is expired/unexpired, specify the action you want the driver to take on an associated GroupWise account. Choose from Expire/Unexpire the GroupWise Account, Disable/Enable the GroupWise Account, or Disable/Enable and Expire/Unexpire the GroupWise Account.

Parameter name	Parameter Description
Action On eDirectory User Disable/Enable	When a user login in eDirectory is disabled/enabled, specify the action you want the driver to take on an associated GroupWise account. Choose from Expire/Unexpire the GroupWise Account, Disable/Enable the GroupWise Account, or Disable/Enable and Expire/Unexpire the GroupWise Account.
Remove GW account from all Distribution Lists on expire	Select Yes if you want the driver to remove the GroupWise account from all distribution lists when the account is expired. Otherwise, select No.
Remove GW account from all Distribution Lists on disable	Select Yes if you want the driver to remove the GroupWise account from all distribution lists when the account is disabled. Otherwise, select No.

Importing the Driver Configuration

The Create Driver Wizard 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. The driver code is now installed and ready for configuration.

1 In Novell iManager, click DirXML Utilities > Create Driver.

2 Select a driver set.

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

3 Select Import a Driver Configuration from the Server, then select GroupWise.xml.

The driver configuration files are installed on the Web server when you install DirXML. During the import, you will be prompted for the driver's parameters and other information. Refer to [“Configuration Information” on page 40](#) for more information.

4 Enter the driver's parameters, then 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. 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.

5 Review the driver objects in the Summary screen and 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 the Driver” on page 43](#).

Upgrading from the 2.0 Version of the Driver

Use the steps in this section to upgrade the DirXML Driver 2.0 for GroupWise. You might want to export your existing driver configuration before upgrading. (Your existing driver configurations will be converted to the Identity Manager 2 format when you modify policies.)

To upgrade to version 2.1:

NOTE: You should delete GWADJ1.DLL from any DirXML-related directories. If the file exists in any other directory in the search path, you might encounter problems. Do not delete this file from the ConsoleOne directory.

- 1** In Novell iManager, click eDirectory Administration > Modify Object.
- 2** Specify the driver object's name, then click OK.
- 3** Scroll down to the Startup Option section, click Manual, then click OK.
- 4** Shut down eDirectory or the Remote Loader.
- 5** Run the Identity Manager 2 installation program and select the GroupWise driver.
You install the driver over the existing 2.0 driver files. This step will update all necessary driver files.
- 6** When the installation completes, reboot the computer where the driver exists. Also restart eDirectory or the Remote Loader.

Activating the Driver

DirXML and DirXML drivers must be activated within 90 days of installation, or they will not run. At any time during the 90 days, or afterward, you can choose to activate DirXML products to a fully licensed state.

To activate your driver, you should:

- ◆ Purchase DirXML licenses
- ◆ Generate a Product Activation Request
- ◆ Submit the Product Activation Request
- ◆ Install the Product Activation Credential received from Novell

For more information about completing these tasks, refer to [Activating Your DirXML Product \(http://www.novell.com/documentation/lg/dirxml20/index.html\)](http://www.novell.com/documentation/lg/dirxml20/index.html).

Post-Installation Tasks

This section explains what you need to do after a local or remote installation.

- ◆ Modify policies
This includes modifying the default policies to meet your specific business needs.
- ◆ Starting the driver
You do this task to set the driver startup option at auto start or manual.
- ◆ Verify that the driver works
You do this task to test the driver to see if data is being synchronized.
- ◆ Migrate eDirectory users to GroupWise
You do this task to establish initial association between eDirectory and GroupWise.
- ◆ Installation on NetWare

If you installed the driver on the same NetWare server where the GroupWise agents exist and run, 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, insert the following:

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

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

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 2, "Using Policies and Filters," on page 15](#) for complete information.

Starting the Driver

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

NOTE: It is important not to disable the driver. When a driver is disabled, eDirectory events are not cached for the driver. When the driver is again started, DirXML attempts to synchronize any objects that were modified while the driver was disabled. The driver does not support the query command. Therefore, the synchronization does not happen and the updates for GroupWise made while the driver was disabled are lost.

Verifying That the Driver is Working Properly

After the driver is installed, the driver configuration is imported, and the rules and style sheets have been customized, you should test the driver to see that it is working properly. (For more information on customizing rules and style sheets, see [Chapter 2, "Using Policies and Filters," on page 15](#).)

Use the following steps to verify that the driver is working properly. When properly installed and configured, the driver will synchronize the changes to GroupWise. Use ConsoleOne with the GroupWise snap-ins to verify that the changes have been synchronized with GroupWise.

To verify the driver is working properly:

- 1 In Novell iManager, click DirXML Management > DirXML Overview.
- 2 Do one of the following options:
 - ◆ Click Search Entire Tree to search your entire tree for the Driver set which contains the driver, and click Search.
 - ◆ Click Search in Container, and enter or browse for and select the container which holds the driver, and click Search.
- 3 Click the DirXML Driver for GroupWise driver status button > 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.
- 8** Using ConsoleOne with the GroupWise snap-ins, verify that the GroupWise account is deleted from the post office.

WARNING: If you create eDirectory users with ConsoleOne, be sure to use a ConsoleOne without the GroupWise snap-ins installed. The ConsoleOne snap-ins for GroupWise will come behind the driver and remove some vital data from eDirectory. This has been fixed in the snap-ins released with GroupWise 6.5.

Migrating eDirectory Users to GroupWise

Under most circumstances, eDirectory and GroupWise will contain information prior to the installation of DirXML. The Migrate function in DirXML 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 will not work properly unless you do this.

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

To migrate eDirectory users to GroupWise:

- 1** In Novell iManager, search for the DirXML Driver Set object with the driver.
- 2** Click the driver to which you will be migrating data.
- 3** Click Migrate from eDirectory.
- 4** Click Add > select the user objects you want to migrate.
- 5** Click OK.

4

Troubleshooting the DirXML Driver for GroupWise

This section explains how to troubleshoot the DirXML[®] Driver for GroupWise[®].

Viewing Driver Errors in the DirXML Trace Screen

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

The following table lists values for the 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 will be shut down.
Retry	Application server was unavailable. Send this event or operation later.

Understanding Error Text Descriptions

The table below contains errors from the driver that displays in the Trace screen. The Error Reason Text column in the following table contains the error condition text returned to DirXML in the Trace screen. The Level column in the following table specifies the status level. The Description column describes the situations that may 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 DirXML log.

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>Missing domain path initialization parameter.</p> <ul style="list-style-type: none"> The 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>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. Missing or invalid authentication information. Incorrect setup of authentication accounts. 	
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 access rights (read/write). Unsupported Class. The driver received an event for an object other than a Novell® eDirectory™ User object. No user name specified. The CN attribute was not specified. java.lang.NullPointerException. The XML document is not correctly formed. It may be syntactically correct, but it doesn't make sense. 	
Unsupported operation	Error	The driver does not understand the XML event.	
Event failed. The DirXML association for this driver has been removed.	Error	The driver received an event for an object without an expected GroupWise ID. This is most likely caused when the GroupWise account is deleted through the GroupWise snap-ins. The driver has removed the DirXML association to the driver in eDirectory.	
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.	
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 only supports a single GroupWise system.	Add a rule to only allow items for this GroupWise system.

Error Reason Text	Level	Description	Recommended Action
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 only supports a single GroupWise system.	Add a rule to only allow items for this GroupWise system
Error publishing to eDirectory.	Error	GroupWise tried to update attributes in eDirectory for an object. The error message is from DirXML or eDirectory. 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.	
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	This error is generated for the following conditions: <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 will 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.	
'Create Accounts During Migration' is set to "No"	Warning	The Migrate from NDS operation will try to create a GroupWise account for each eDirectory User that does not have a GroupWise account. Whether the GroupWise account is created depends on the driver Create Accounts During Migration option on the driver parameters page. When set to yes, the GroupWise Account will be created. When set to no, the GroupWise account will not be created and this warning will be generated.	
Query Rejected	Warning	The driver style sheets reject all Subscriber channel query requests from DirXML and this warning is generated.	
Invalid reference to GroupWise	Warning	This eDirectory user references a GroupWise account that does not reference this eDirectory user. This eDirectory user may contain old data. You should remove or disable the association for the DirXML driver for GroupWise until the problem is resolved.	

Notes

This section contains information to help you as you use the DirXML Driver for GroupWise.

Disabling the Driver

It is important not to disable the driver. When a driver is disabled, eDirectory events are not cached for the driver. When the driver is again started, DirXML will attempt to re-synchronize objects. The driver does not support the query command. As a result, the synchronization will not happen and the updates for GroupWise will be completely lost.

DirXML 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.)

Driver Access Rights and Membership

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

Managing Distribution Lists from the GroupWise Snap-ins

The driver does not manage distribution lists directly and will not be aware of the changes to distribution lists. Distribution lists must be managed by the GroupWise snap-ins. When a user is initially created the GroupWise account can be added to one or more distribution lists.

Removing a GroupWise Account Using the GroupWise Snap-in

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

To remove a GroupWise account using the GroupWise snap-ins:

1 Do one of the following:

- ◆ If a DirXML association exists, change the state to Disabled.

When the user has a DirXML association to the driver with the state set to Disabled, and an attribute is changed in eDirectory, DirXML will disregard the modify request.

- ◆ If a DirXML association does not exist, manually create one > set the associated object ID to any value > set the state to Disabled.

When the user does not have a DirXML association and an attribute is changed on the eDirectory user, the GroupWise account will be re-created. When a user has a DirXML association to the driver with the state set to Disabled, and an attribute is changed in eDirectory, DirXML will discard the modify request.

2 Delete the GroupWise account.

3 To re-create the GroupWise account, delete the association.

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) that eDirectory user with the GroupWise account it was originally associated with. This action is done to reset 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 will not be synchronized to GroupWise. This is not a recommended procedure.

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.

Migrate from eDirectory

The migrate process validates that eDirectory users have GroupWise accounts. The migrate process causes DirXML to examine every specified object in eDirectory. When an object does not have a driver association, the Create rule is applied. If the object meets the Create rule criteria, the object is passed to the driver as an Add event. When the Driver Parameter Create Accounts During Migration parameter is set to Yes, the driver will create a GroupWise account. If a corresponding GroupWise account already exists, only the association key is set. When No is specified, a new account will not be created, but existing accounts will be associated. The association key is used to keep eDirectory users and GroupWise accounts correctly synchronized.

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. 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 DirXML 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. The object might have already been removed by the GroupWise snap-ins when the driver tries to delete it.

A

Class and Attribute Descriptions

The table in this appendix lists each Novell® eDirectory™ class and attribute used by the DirXML Driver for GroupWise®. The Secondary Effects column in the following 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	Channel (Subscriber or Publisher)	Description	Secondary Effects
NDS User				
CN	None	Subscriber	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	Subscriber	User's first name	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Surname	50093	Subscriber Publisher	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 Important Note at the end of this table for additional information about this attribute.
Title	50096	Subscriber	User's title	Synchronizes from eDirectory to GroupWise create and modify events. See the Important Note at the end of this table for additional information about this attribute.
OU	50089	Subscriber	User's department	Synchronizes from eDirectory to GroupWise create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Telephone Number	50095	Subscriber	User's telephone number	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Facsimile Telephone Number	50145	Subscriber	User's facsimile telephone number	Only synchronizes the telephone number portion from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Description	50032	Subscriber	Provides additional information.	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.

eDirectory Class or Attribute	GroupWise Attribute	Channel (Subscriber or Publisher)	Description	Secondary Effects
company	55022	Subscriber	User's company.	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Initials	55019	Subscriber	Middle initials, up to 8 characters.	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
Generational Qualifier	55020	Subscriber	Jr., III, and so forth, up to 8 characters.	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
personalTitle	55021	Subscriber	Dr., Mr., Ms., and so forth, up to 8 characters.	Synchronizes from eDirectory to GroupWise on create and modify events. See the Important Note at the end of this table for additional information about this attribute.
NGW: Object ID	50073	Publisher	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: <code>()@.:",{}*</code> .	<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 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 ◆ DirXML association key <p>This attribute should not be modified except as the result of a rename.</p>
NGW: Account ID	50116	Publisher	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 Important Note at the end of this table for additional information about this attribute.
NGW: Gateway Access	59001	Publisher		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 Important Note at the end of this table for additional information.
NGW: Mailbox Expiration Time	50138	Publisher		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.

eDirectory Class or Attribute	GroupWise Attribute	Channel (Subscriber or Publisher)	Description	Secondary Effects
Login Disabled	50058	Subscriber	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 Important Note at the end of this table for additional information.
Login Expiration Time	None	Subscriber	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	Publisher	This is 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 operation could cause this attribute to change. This attribute should not be modified in any style sheet.
NGW: GroupWise ID	None	Publisher Subscriber	Uniquely identifies object in GroupWise. This value is used for the DirXML 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 operation or a rename will cause this attribute to change. On any modify operation, 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 DirXML association value.</p> <p>This attribute only comes through the Subscriber channel when the GroupWise snap-ins change this value. The shim will then change the DirXML 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 DirXML. This is a rare occurrence.</p>

eDirectory Class or Attribute	GroupWise Attribute	Channel (Subscriber or Publisher)	Description	Secondary Effects
NGW: Visibility	50076	Publisher	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 Important Note at the end of this table for additional information about this attribute.
Email Address	None	Publisher		This attribute is generated by GroupWise on create, rename, or move operations. The shim queries GroupWise for this value and writes it via the publisher channel to eDirectory.
Internet Email Address	None	Publisher		This attribute is generated by GroupWise on a create or rename operation, 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	Publisher	DN of the Post Office object.	The driver writes this on create and move operations.
Any User attribute whose value can be represented as a string.	50106 to 50115, 55002 to 55011	Subscriber	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 subscriber 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 Important Note at the end of this table for additional information about this attribute.
GroupWise Post Office				
Member	None	Publisher		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 PO and writes the user DN to the new post office.
GroupWise Resource				
NGW: Owner	50081	Publisher	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 Important Note at the end of this table for additional information about this attribute.
GroupWise Distribution List				

eDirectory Class or Attribute	GroupWise Attribute	Channel (Subscriber or Publisher)	Description	Secondary Effects
Member	None	Publisher		On eDirectory user create or modify operations, 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 DLs (member, BC or CC). The shim will remove the user from the appropriate DL.
NGW: Blind Copy Member	None	Publisher		The driver cannot set this attribute. This attribute is only populated via the GroupWise snap-in.
NGW: Carbon Copy Member	None	Publisher		The driver cannot set this attribute. This attribute is only populated via the GroupWise snap-in.
	50319		Preferred internet eMail ID	
	50013		Preferred internet address format	0 - Prefer Domain, Host, and User ID 1 - Prefer Host and User ID 2 - Prefer User ID 3 - Prefer lastname.firstname 4 - Prefer firstname.lastname 5 - Overriden no setting 6 - Prefer first initial and last name
	50320		Disallowed internet address formats	0 - None 1 - Full 2 - Host 3 - User ID 4 - Lastname.Firstname 5 - Firstname.Lastname 6 - First initial and last name
	50045		Internet domain name	
	50157		Exclusive use of internet domain name	
	59028		LDAP Authentication ID in typeful format	

IMPORTANT: When this 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 DirXML 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>

```

B

Upgrading from the 1.0a Version of the Driver

Use the steps in this section to upgrade the DirXML Driver 1.0a for GroupWise, which released with DirXML 1.1a.

After you upgrade the driver, you will need to obtain a new activation credential for the DirXML Driver 2.0 for GroupWise. If you do not complete the activation process within 90 days, the upgraded driver will not run. For additional information, refer to [“Activating the Driver” on page 43](#).

To upgrade to version 2.0:

- 1** In Novell iManager, click eDirectory Administration > Modify Object.
- 2** Specify the driver object’s name, then click OK.
- 3** Scroll down to the Startup Option section, click Manual, then click OK.
- 4** Shut down eDirectory or the Remote Loader.
- 5** Run the DirXML Driver 2.0 for GroupWise installation program.

You install the driver over the existing 1.0a driver files. This step will update all necessary driver files.

- 6** Start eDirectory or the Remote Loader, then open Novell iManager.
- 7** In Novell iManager, click eDirectory Administration > Modify Object.
- 8** Specify the driver object’s name, then click OK.
- 9** Click the Driver Configuration tab > Authentication context.
- 10** Do one of the following:
 - ◆ If the driver is installed on Windows and the GroupWise domain database is on NetWare, enter the eDirectory context of the specified Authentication ID. Otherwise, you should leave this field blank.
 - ◆ If the driver is installed on NetWare, you should leave the eDirectory context of the specified Authentication blank.
- 11** In Novell iManager, add the following attributes to the User Class in the Subscriber Channel Filter:
 - ◆ company
 - ◆ Generational Qualifier
 - ◆ Initials
 - ◆ personalTitle
- 12** Add the following definitions to the Schema Mapping rule.

If you are using GroupWise 5.5 or 6.0:

```

<attr-name class-name="User">
  <nds-name>company</nds-name>
  <app-name>55022</app-name>
</attr-name>
<attr-name class-name="User">
  <nds-name>Initials</nds-name>
  <app-name>55019</app-name>
</attr-name>
<attr-name class-name="User">
  <nds-name>Generational Qualifier</nds-name>
  <app-name>55020</app-name>
</attr-name>
<attr-name class-name="User">
  <nds-name>personalTitle</nds-name>
  <app-name>55021</app-name>
</attr-name>

```

If you are using or upgrading to GroupWise 6.5:

```

<attr-name class-name="User">
  <nds-name>company</nds-name>
  <app-name>50310</app-name>
</attr-name>
<attr-name class-name="User">
  <nds-name>Initials</nds-name>
  <app-name>50322</app-name>
</attr-name>
<attr-name class-name="User">
  <nds-name>Generational Qualifier</nds-name>
  <app-name>50323</app-name> ` ` 1
</attr-name>
<attr-name class-name="User">
  <nds-name>personalTitle</nds-name>
  <app-name>50324</app-name>
</attr-name>

```

13 In Novell iManager, click eDirectory Administration > Modify Object.

14 Specify the driver object's name, then click OK.

15 Scroll down to the Startup Option section, click Auto Start, then click OK.

IMPORTANT: When working with Distribution Lists, you must change all instances of the Groups attribute to Distribution DN in all style sheets.

If you are upgrading the driver on the Windows platform, the installation program removes gwadj1.dll and replaces it with gwadj2.dll. You should search the system where the driver resides for additional copies of gwadj1.dll and delete these files. If both versions of the DLL exist, the driver will use the older version.