Novell
DirXML® Driver for Exchange 5.5

1.6

IMPLEMENTATION GUIDE

Novell®

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

Contents

About This Guide

This guide explains how to install and configure the DirXML® Driver for Microsoft* Exchange 5.5.

The guide contains the following sections:

Additional Documentation

For information on Nsure™ Identity Manager, see the Identity Manager Documentation Web site (http://www.novell.com/documentation/lg/dirxml20).

For information on other DirXML drivers, see Driver Implementation Guides (http://www.novell.com/documentation/lg/dirxmldrivers/index.html).

Documentation Updates

For the most recent version of this document, see *DirXML Driver for Exchange* in the Driver Implementation Guides (http://www.novell.com/documentation/lg/dirxmldrivers/index.html) section.

Documentation Conventions

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 Identity Manager. Send e-mail to proddoc@novell.com.

1 Overview

The DirXML® Driver for Exchange is a connector that synchronizes data between Novell® eDirectory™ and Microsoft Exchange. This synchronization makes it possible for Exchange accounts to be managed in eDirectory. You no longer need to manage a user's eDirectory and Exchange accounts separately. The DirXML Driver for Exchange increases the efficiency of your network management by allowing you to manage eDirectory and Exchange accounts as a single account in a single management tool.

The DirXML Driver for Exchange runs on Windows* NT*'.

The driver supports only the Distribution List, Remote, and Mailbox classes.

This section provides information on the following:

- "New Features" on page 9
- "Driver Concepts" on page 10
- "Benefits" on page 10
- "Required Skills" on page 11
- "Adding to the Identity Manager Basics" on page 11

New Features

- "Driver Features" on page 9
- "Identity Manager Features" on page 10

Driver Features

- The new AuthoritativeBind parameter lets you use an authoritative LDAP bind instead of an anonymous LDAP bind. See "Using Authoritative Bind" on page 31.
- The Assoc-NT-Account attribute can now be used for queries into Exchange.
- Instead of preferredName, a new attribute named DirXML-NTAccountName now is used in eDirectory. See "Integrating the DirXML Driver for Exchange and the DirXML Driver for NT Domain" on page 27.

  The preferredName attribute can still be used.

- Role-Based Entitlements features are supported. You can choose this option during import.

  Using Role-Based Entitlements is a design decision. Before choosing this option, see "Using Role-Based Entitlements" in *Novell Nsure Identity Manager 2 Administration Guide*.

- The driver can be customized to provide a driver heartbeat. See "Adding Driver Heartbeat" in the *Novell Nsure Identity Manager 2 Administration Guide*.

Identity Manager Features

For information on new features in Nsure™ Identity Manager, see "What's New in Identity Manager 2?" in the *Novell Nsure Identity Manager 2 Administration Guide*.

Driver Concepts

The DirXML Driver for Exchange is a bidirectional synchronization connector between Microsoft Exchange and eDirectory. This connector uses XML to convert Exchange objects to eDirectory objects and vice versa.

eDirectory acts as a hub, with other applications and directories publishing their changes to it. eDirectory then sends changes to the applications and directories that have subscribed for them. This results in two main flows of data:

- The Publisher channel
- The Subscriber channel

Publisher Channel

The Publisher channel reads information from your Exchange Server and submits that information to eDirectory via the DirXML engine.

By using the poll parameters, the Publisher channel polls the Exchange server for changes to objects. If the DirXML Driver for Exchange detects changes in Exchange, the data between Exchange and eDirectory is synchronized. If the change was caused by data sent to Exchange from the Subscriber, no synchronization is necessary.

Subscriber Channel

The Subscriber channel watches for additions and modifications to eDirectory objects and creates changes on your Exchange server via the DirXML engine.

The Subscriber channel synchronizes changes made in eDirectory with data on the Exchange server. If an associated object is changed in eDirectory, the Subscriber channel updates the Exchange with the new information.

Benefits

You can use the driver to automate and maintain business processes in the following ways:

- Automatically create eDirectory objects from Exchange objects
- Synchronize bidirectional data between Exchange and eDirectory
- Maintain accurate and consistent eDirectory IDs
- Enable integration between Exchange and multiple applications (for example, eDirectory, Lotus Notes*, Netscape*, SAP*, and Active Directory*) by using Identity Manager and eDirectory
- Manage Exchange distribution lists and remote objects

You can configure the DirXML Driver for Exchange to enhance your organization's processes by using custom business logic in the form of policies. Before installing and configuring the driver, you evaluate and define those processes. During installation, you configure the driver's policies to automate these processes wherever possible.

Required Skills

Implementing the driver requires expertise in Exchange and Identity Manager.

Expertise in Exchange

This document assumes that your expertise in Exchange is equivalent to one of the following:

- An Exchange developer
- An Exchange administrator
- An application designer
- An upgrade administrator
- A database administrator

Expertise in Identity Manager

This document assumes that your expertise in Identity Manager is equivalent to an eDirectory administrator or an Identity Manager administrator.

Adding to the Identity Manager Basics

The following Identity Manager functionality is important to the driver:

-
-
-

Event Processing Support

The driver supports the following events on the Publisher and Subscriber channels.

Functionality	Event
Publisher	Add Modify Delete Rename Move
Subscriber	Add Modify Delete Rename

The driver also supports a defined query capability so that Identity Manager can query the synchronized application or directory.

Policies

Policies are used to control the synchronization of the driver with eDirectory and the application, database, or directory. Policies help Identity Manager transform an event on a channel input into a set of commands on the channel output.

You can configure policies by using the iManager plug-ins for Identity Manager. The sample driver configuration includes the following set of policies:

Policy	Description
Placement	Operates on both the Publisher and Subscriber channels
Matching	Operates on both the Publisher and Subscriber channels
Mapping	Configured on the Driver object
Input Transform	Configured on the Driver object
Output Transform	Configured on the Driver object
Create	Found on the Publisher and Subscriber channels
Event Transform	Found on the Publisher channel
Command Transform	Found on the Publisher channel

For more information about creating your own policies, see the *Novell Nsure Identity Manager 2 Administration Guide*.

Associations

The driver uses the Exchange DN for associations. A unique ID or unique user name is created for records relating to Exchange objects. However, Identity Manager does not need to share these same unique IDs.

The association attribute received from Exchange is unique to the Exchange application, based on each driver for Exchange that you install and enable. If other drivers are installed, they use an association specific to that application. The association attribute is multivalued. Therefore, if Identity Manager is being used to connect multiple applications, all of their associations can be stored on this attribute.

The unique ID association links an object in Exchange to its associated object in eDirectory. This association allows the driver to perform subsequent tasks on the appropriate object.

The Association field is stored on the eDirectory object on the DirXML property page.

2 **Upgrading**

This section provides information on the following:

Running the Normalize Exchange Associations Utility

If you are upgrading from the DirXML® Driver 1.0 for Exchange, you need to run the Normalize Exchange Associations utility. This utility searches the eDirectory tree and normalizes the DirXML Driver for Exchange associations.

NOTE: If you are upgrading from the 1.0a patch or later, you don't need to run the Normalize Exchange Associations utility.

1 Get the changeAssocKey.zip file from Novell Support.

2 Create a temporary directory on the NT server where the DirXML Driver for Exchange is installed.

3 Expand changeAssocKey.zip into the directory.

4 Open the run.bat file and edit the file with these parameters:

Parameter	Value
Java	Driver letter and path for Java*. For example, enter C:\Novell\consoleone\1.2\jre\bin\java or D:\Novell\NDS\jre\bin\java
LDAP address:port	The IP address and port number of the eDirectory server. Normally, this is localhost:389.
LDAP Bind ID	The LDAP authentication ID.
LDAP Bind Password	The LDAP authentication password.
Driver Name	The name of the Driver object. For example, ExchangeDriver.
Action	Specify one of these desired actions:
	◆ 1- Lists eDirectory objects with no association to the driver specified above.
	◆ 2- Lists eDirectory objects with an incomplete association to the driver specified above.
	◆ 3- Lists eDirectory objects with associations to be normalized.
	◆ 4- Modifies the associations in eDirectory and lists the objects.

NOTE: We recommend that you first set the action to 3 so you can see what associations will change when you set the action to 4. Then, you can set the action to 4 and run the program again. You don't cause any problems by running the program more than once. If you are concerned about the current state of the associations, you can run the utility with the action set to 1 or 2.

5 Run the run.bat file.

Upgrading the Driver Shim

NOTE: Running an Identity Manager driver configuration with a DirXML 1.*x* driver shim is not supported.

When you upgrade, the new driver shim replaces the previous driver shim but keeps the previous driver's configuration. The new driver shim can run the DirXML 1.*x* configuration with no changes.

1 Make sure you have updated your driver with all the patches for the version you are currently running.

 To help minimize upgrade issues, we recommend that you complete this step on all drivers.

2 Install the new driver shim.

You can do this at the same time that you install the DirXML engine, or you can do it after the engine is installed. See "Installing the Driver Shim for Exchange" on page 18.

3 After the shim is installed, restart the driver.

3a In iManager, select DirXML Management > Overview.

3b Browse to the driver set where the driver exists.

3c Select the driver that you want to restart, click the status icon, then select Start Driver.
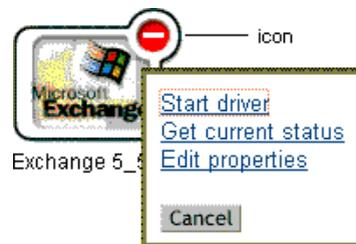
4 Activate the driver shim with your Identity Manager activation credentials.

For information on activation, see "Activating Novell Identity Manager Products" in the *Novell Nsure Identity Manager 2 Administration Guide*.

After you install the driver shim, upgrade the driver configuration. See "Upgrading the Driver Configuration" on page 14.

Upgrading the Driver Configuration

You can run a DirXML 1.*x* driver configuration with an Identity Manager 2.0 driver shim and the new DirXML engine, with no changes to the driver configuration.

However, you might want to edit a DirXML 1.*x* driver configuration. To do this, do one of the following:

- ◆ Use the DirXML 1.*x* iManager plug-ins.

See "Managing DirXML 1.x Drivers in an Identity Manager Environment" in the *Novell Nsure Identity Manager 2 Administration Guide*.

 ◆ Run the wizard that converts DirXML 1.*x* configurations to Identity Manager format so that you can use the iManager plug-ins for Identity Manager.

   See "Upgrading a Driver Configuration from DirXML 1.x to Identity Manager Format" in the *Novell Nsure Identity Manager 2 Administration Guide*.

To take advantage of the features of Identity Manager, do the following:

 ◆ Review the sample configuration provided.

 ◆ See the *Novell Nsure Identity Manager 2 Administration Guide* for information on new features.

3 Installing and Configuring the Driver

This section provides information on the following:

Key Terms

Driver shim. A dynamically linked library (Exchange55Shim.dll) loaded directly by DirXML$^{®}$ or by the remote loader. Collects the changes to be sent from the DirXML Driver for Exchange to eDirectory, communicates changes from eDirectory to the DirXML Driver for Exchange, and operates as the link that connects eDirectory and Exchange.

Driver. A set of policies, filters, and objects that act as the connector between eDirectory and the driver shim.

This software enables an application to publish events from an application to the directory, enables an application to subscribe to events from the directory, and synchronizes data between the directory and applications.

To establish a connection between the DirXML engine and Exchange, you specify the driver's configuration and connection parameters, policies, and filter values.

Driver object. An object in eDirectory.

The Driver object displays information about the driver's configuration, policies, and filters. This object enables you to manage the driver and provide eDirectory management of the driver shim parameters.

Prerequisites

This section lists the software and hardware requirements for running the DirXML$^{®}$ Driver for Exchange.

Software Requirements

- ❑ Novell$^{®}$ Nsure™ Identity Manager 2 or later, and its prerequisites
- ❑ Windows NT 4 with the latest patches and service packs (SP6a or later)
- ❑ Exchange 5.5 with Service Pack 4 or later and the latest patches

    NOTE: If the Exchange Server doesn't have the latest patches, an Entitlement Policy won't correctly assign membership in an Exchange distribution list. Also, proxy addresses are handled improperly because of a defect in Exchange.

Hardware Requirements

❑ 128 MB RAM (256 MB or more recommended)

Installing the Driver Shim for Exchange

You can install the Driver for Exchange (along with other DirXML drivers) at the same time that the DirXML engine is installed. See "Installation" in the *Novell Nsure Identity Manager 2 Administration Guide*.

If you didn't install this driver shim when you installed the DirXML engine, you can install it later. To do this, use the Identity Manager CD/download image instead of the Create Driver option in Novell iManager. Then use the Create Driver option or Import Driver option to configure the driver.

To install the driver after the DirXML engine is installed:

1 From the CD/download image, run the installation program.

If the installation program doesn't autolaunch, you can run \nt\install.exe.

2 In the Welcome dialog box, click Next, then accept the license agreement.

3 In the first DirXML Overview dialog box, review information, then click Next.

The dialog box provides information on the following:

◆ A DirXML server

◆ A DirXML connected server system

4 In the second DirXML Overview dialog box, review the information, then click Next.
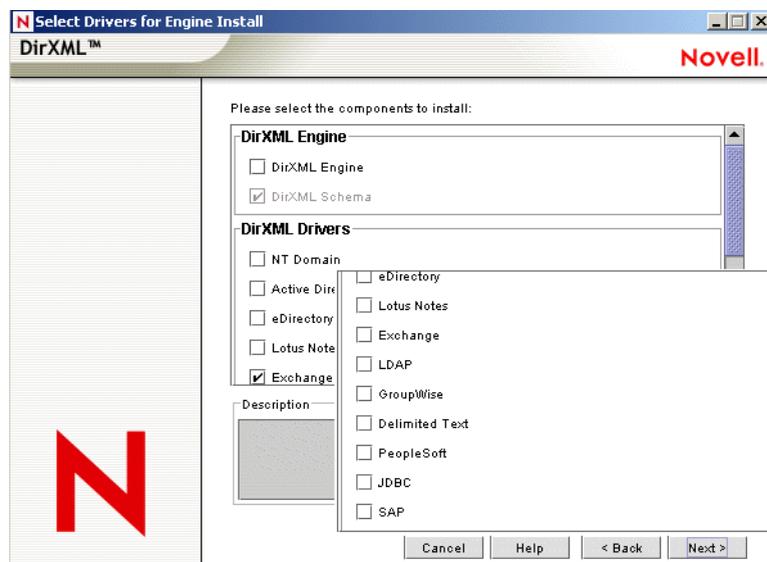
The dialog box provides information on the following:

◆ A Web-based administration server

◆ DirXML utilities

5 In the Please Select the Components to Install dialog box, select only DirXML Server, then click Next.
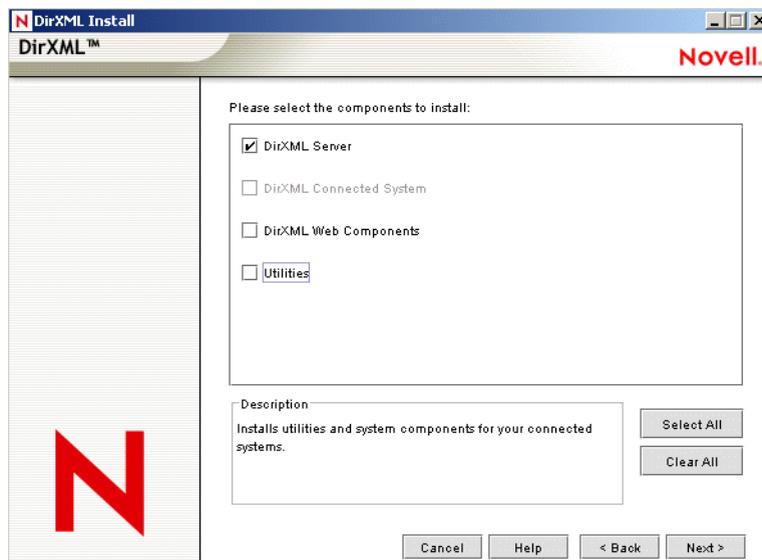
6 In the Select Drivers for Engine Install dialog box, select only Exchange, then click Next.

You can't deselect DirXML Schema, which is dimmed. Later, the installation program will extend the schema to enable the newly installed driver to function.

7 In the DirXML Upgrade Warning dialog box, click OK.

8 In the Schema Extension dialog box, type a username and password, then click Next.

Remember to type in LDAP format, for example:

`cn=admin,o=novell`

9 In the Summary dialog box, review selected options, then click Finish.

10 In the Installation Complete dialog box, click Close.

After installing the driver shim, create and configure a driver object. Do this by completing "Post-Installation Tasks" on page 19.

Post-Installation Tasks

This section provides information on the following:

Importing the Driver Configuration File

The sample Exchange 5.5 driver configuration creates and configures the objects needed to make the driver work properly.

For example, consider the following scenario:

You create a driver set and driver object in the lab. After configuring the driver, you save the configuration. To save time and keep the same settings that worked well in the lab, you import the driver's configuration file from the lab environment into your production environment.

1 In iManager, select DirXML Utilities > Import Drivers.

2 Select whether to place the configuration file in a new or existing driver set.

Select In an Existing Driver Set for the following situations:

- The driver should be logically grouped with the other drivers in the tree.
- The server can handle the additional traffic that would the new driver would generate.
- You want to update or customize an existing driver.

  For example, you can point the driver to a different container but keep all the rules that you have set up.

3 In the Import Drivers dialog box, check the Exchange 5_5 driver, then click Next.

☑ 🖼️ DirXML Driver for Microsoft Exchange 5.5

4 Scroll to the following parameters and provide required information. Refer to the descriptions provided in the interface.

- Driver name
- Domain name
- IP address of the Exchange server
- Authoritative Bind

  See "Using Authoritative Bind" on page 31.

- Exchange Server Name
- Exchange Site Organization
- Exchange Site
- Polling Frequency
- Authoritative User
- User Password
- eDir Users Container
- eDir Groups Container
- Configure Data Flow
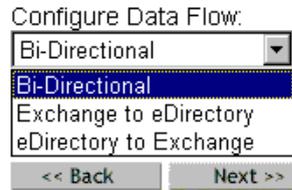
- ◆ Enable Entitlements

  Using Role-Based Entitlements is a design decision. Don't select this option unless you have reviewed "Using Role-Based Entitlements" in the *Novell Nsure Identity Manager 2 Administration Guide*.

  If you select this option, also provide information for Action - Remove Mailbox Entitlement.

- ◆ Action - Remove Mailbox Entitlement

- ◆ Install Driver as Remote/Local

- ◆ Remote Host Name and Port

- ◆ Driver Password

- ◆ Remote Password

5 Define security equivalences.

The tendency is to assign Admin. However, you might want to create a DriversUser (for example) and assign security equivalence to that user.

6 Identify all objects that represent Administrative Roles and exclude them from replication.

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

7 (Conditional) If you are re-creating or updating a driver, select Update Everything about That Driver, then click Next.

8 In the Summary screen, review options, then click Finish.

If you need to make changes, click Back.

After importing, configure the Driver Set object and the Driver object for your setup, then start or restart the driver.

Configuring the Exchange Server

This section contains information on configuring the Exchange server for use with the DirXML Driver for Exchange. You should already be familiar with Exchange administration and deployment.

Before you proceed, you must have the following information about your setup:

- ◆ The name of the Exchange Server that the driver will be synchronizing with.

- ◆ The name of the Exchange site you want to administer.

- ◆ The IP address or hostname of the Exchange server.

- ◆ The name of the Exchange service account and its password.

If the Exchange server is running on the same computer as eDirectory, unload the LDAP server or reconfigure it to run on a different port.

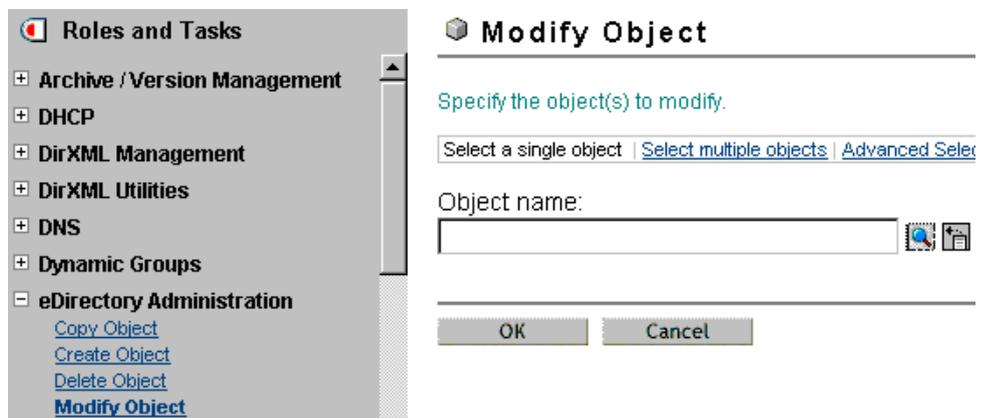To unload LDAP:

1 In the Control Panel, double-click Novell eDirectory.

2 Scroll to and select ldap.dlm, then click Stop.
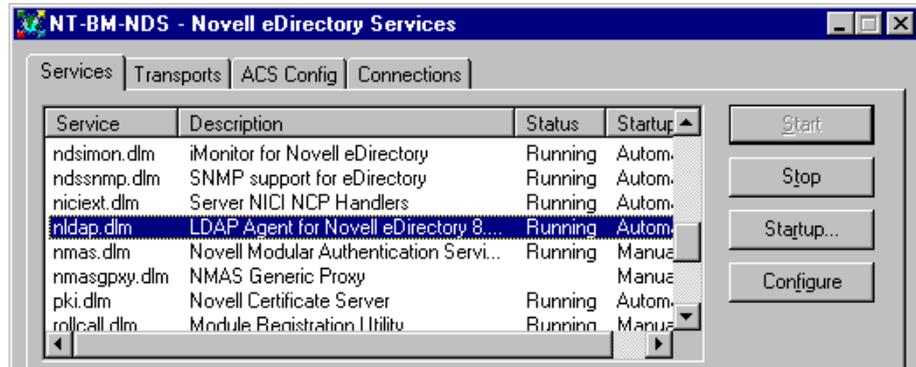
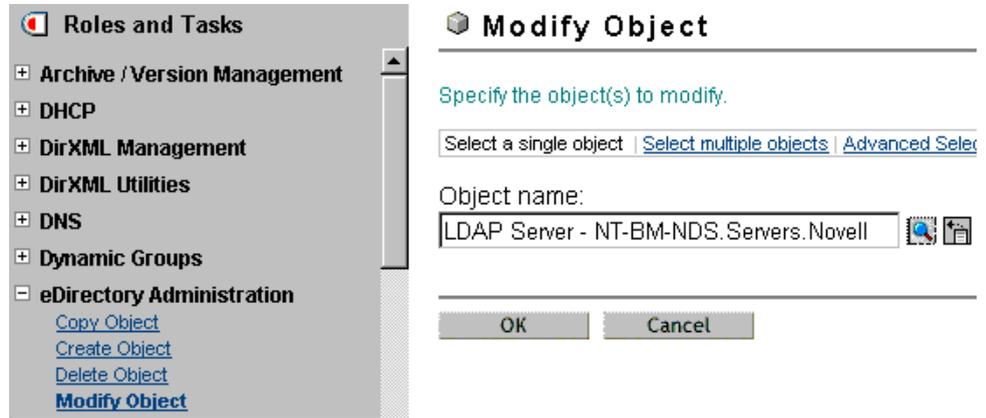To reconfigure LDAP to run on a different port:

1 In Novell iManager, select eDirectory Administration > Modify Object.

2 Navigate to and select the LDAP Server object, then click OK twice.

The second time that you click OK, you save the selected object.

3 In the General page, select Connections, then scroll to the Ports section.

Ports

☑ Enable Encrypted Port

    Port: 637

☑ Enable Non-Encrypted Port

    Port: 390

Restrictions

| OK | Cancel | Apply |

4 Change Enable Non-Encrypted Port to a value other than 389, then click OK.

Installing a Remote Exchange Driver

The driver doesn't need to run on the same machine as the Exchange Server. However, when running remotely, the driver can run only on an NT server or member server that belongs to the same domain as the Exchange server domain. This restriction is a Microsoft-imposed NT credential restriction.

The NT server where you install the driver needs to have three Microsoft .dll files installed before the driver can run: libxds.dll, exchmem.dll, and expsrv.dll. The files are installed by the Exchange Administrator program. You can install Exchange Administrator from the *Microsoft Exchange Server* CD.

A remote driver doesn't create NT accounts when a new Exchange mailbox is created. This is also because of restrictions imposed by the Microsoft DAPI API that the driver uses.

For instructions on installing the Remote Loader, see "Installation" in the *Novell Nsure Identity Manager 2 Administration Guide*.

Configuring the Driver Filter

You should modify the filter on the Publisher and Subscriber channels to include object classes and attributes that you want Identity Manager to process.

1 In iManager, click DirXML Management > Overview.

2 Locate the driver set that contains the Exchange driver, then click the driver's icon to display the DirXML Driver Overview page.

3 Click the driver filter icon.
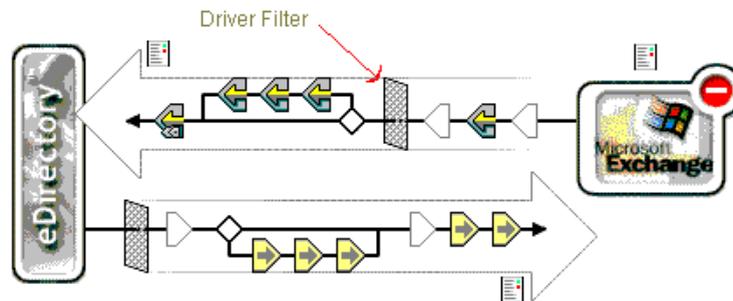
4 (Optional) Add classes that you want Identity Manager to process.

The Exchange driver supports the Distribution List, Remote, and Mailbox classes.

5 Enable synchronization.

As the following figure illustrates with red Xs, when you add a class, the Publisher and Subscriber channels aren't enabled.

To enable a channel, click the channel icon, then click Synchronize.


6 Save changes by clicking OK.

Mail-nickname is the Alias attribute on the General page in the Exchange Administrator. It is the Exchange attribute name that the driver supports but does not map to any existing eDirectory attributes. Based on your organization's needs, you can map this Exchange attribute to existing or new eDirectory attributes (after extending the schema) by modifying the Schema Mapping policy. Make sure that the syntax for any maps you add is valid. You can also handle this in a style sheet.

Starting the Driver

1 In iManager, click DirXML Management > Overview.

2 Browse to and select the driver set where the driver exists.

3 In the driver that you want to start, click the icon for the drop-down list.
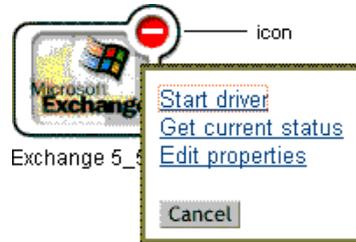
4 Select Start Driver.

After the driver starts, you can open DSTrace to see driver processing details.

Synchronization takes place on an object-by-object basis as changes are made to individual objects. If you want to have an immediate synchronization, you must initiate that process as explained in .

Migrating and Resynchronizing Data

Identity Manager synchronizes data as it changes. If you want to synchronize all data immediately, you can choose from the following options:

- ◆ **Migrate Data from eDirectory:** Allows you to select containers or objects you want to migrate from eDirectory to an application. When you migrate an object, the DirXML engine applies all of the Matching, Placement, and Create policies, as well as the Subscriber filter, to the object.

- ◆ **Migrate Data into eDirectory:** Allows you to define the criteria the DirXML engine uses to migrate objects from an application into Novell eDirectory. When you migrate an object, the DirXML engine applies all of the Matching, Placement, and Create policies, as well as the Publisher filter, to the object. Objects are migrated into eDirectory using the order you specify in the Class list.

- ◆ **Synchronize:** The DirXML engine looks in the Subscriber class filter and processes all objects for those classes. Associated objects are merged. Unassociated objects are' processed as Add events.

To use one of the options explained above:

1 In iManager, select DirXML Management > Overview.

2 Locate the driver set containing the Exchange driver, then double-click the driver icon.

3 Click the appropriate migration button.
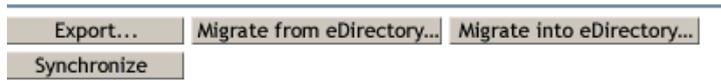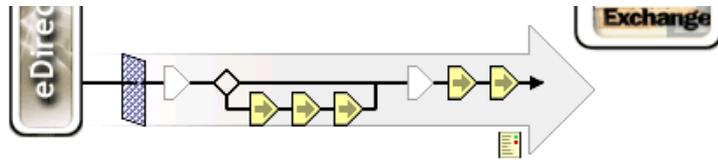
Activating the Driver

Activate the driver within 90 days of installation. Otherwise, the driver will stop working.

For information on activation, refer to "Activating Novell Identity Manager Products" in the *Novell Nsure Identity Manager 2 Administration Guide*.

4 Customizing the DirXML Driver for Exchange

This section provides information on the following:

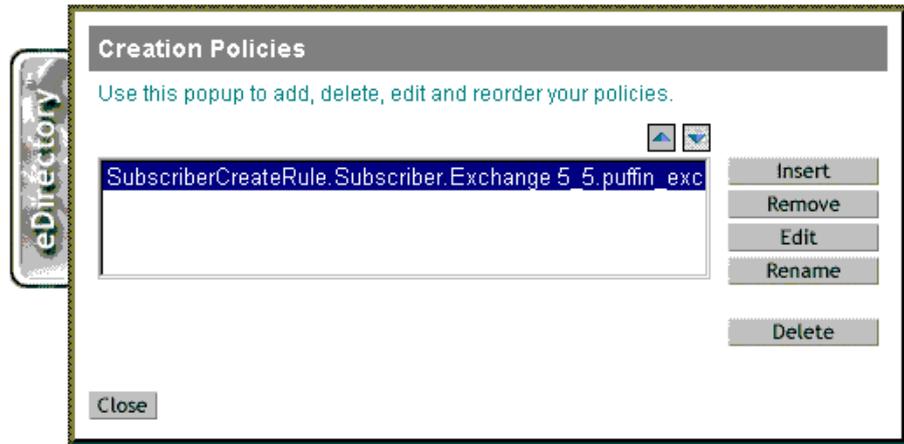## Integrating the DirXML Driver for Exchange and the DirXML Driver for NT Domain

IMPORTANT: If you are using the DirXML Driver for NT Domains and the DirXML Driver for Exchange, edit the default policy or create a new one to resolve an account issue between the two drivers. This policy prevents the Exchange driver from attempting to create an NT Domains account before the NT Domains driver creates the account.

The DirXML Driver for NT Domain has a User attribute called DirXML-NTAccountName. This attribute contains the DomainName/UserName value. The Exchange MailBox object needs the value to associate to a domain account. For that association to occur correctly, the value in DirXML-NTAccountName needs to be put in the MailBox attribute Assoc-NT-Account. Keep in mind that attribute names are case sensitive.

1 Create a new policy so that a new MailBox object isn't created unless the DirXML-NTAccountName attribute is populated.

  1a In iManager, select DirXML Management > Overview.

  1b Search for the driver set that contains the DirXML Driver for Exchange, then select that driver.

  1c Select the Creation Policies object on the Subscriber channel.

The Creation Policies object
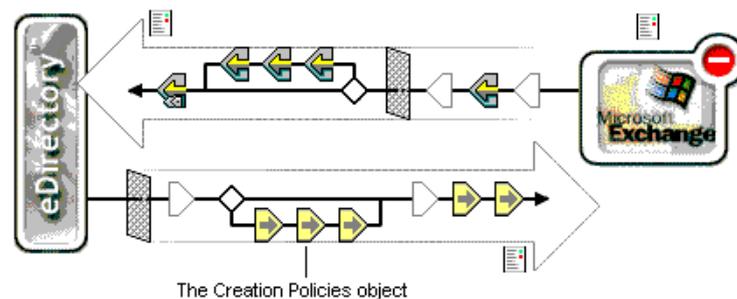
  1d In the Creation Policies dialog box, click Edit.

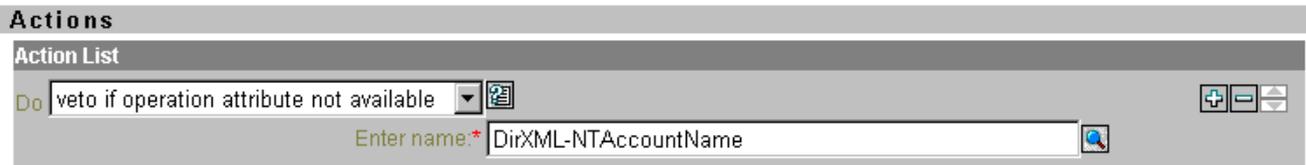**1e** Click User Required Attributes.

1f In the Actions section, add an action for the DirXML-NTAccountName attribute.

Click the + icon, then select Veto If Operation Attribute Not Available from the Do drop-down list.

Select DirXML-NTAccountName from the Enter Name drop-down list.

1g Click OK.

As the following figure illustrates, the action is placed in the User Required Attributes section.

2 Verify that the DirXML-NTAccountName attribute is in the following locations:

- ◆ The Publisher filter on the DirXML Driver for NT Domains
- ◆ The Subscriber filter on the DirXML Driver for Exchange

3 Synchronize the Subscriber channel.
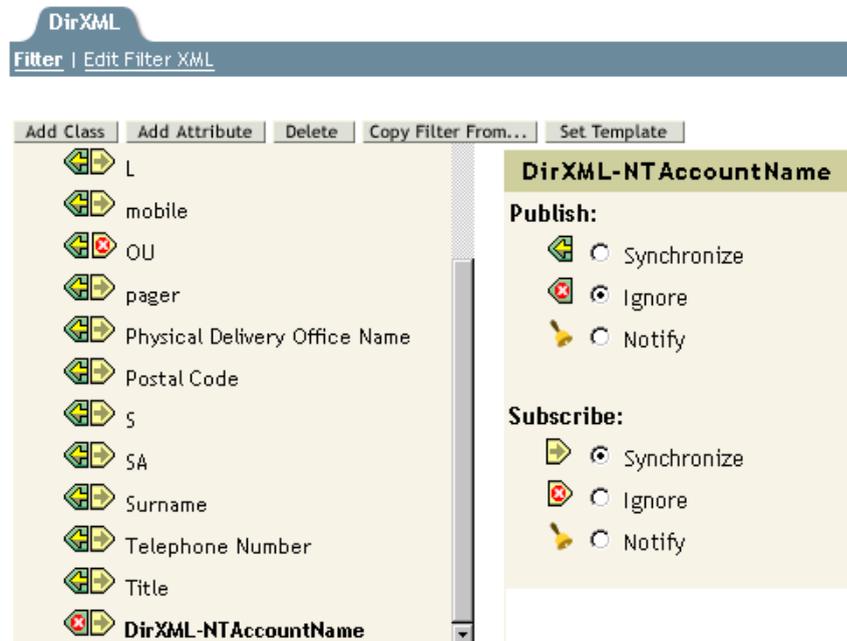
4 Restart both drivers.

After you have made these changes to the drivers, the following control flow occurs when you create a user in eDirectory:

1. The DirXML Driver for NT Domain is handed a create request.

2. The DirXML Driver for Exchange Create event is vetoed because of the absence of the DirXML-NTAccountName attribute.

3. The DirXML Driver for NT Domain creates the NT account and publishes the name of the NT account just created to the DirXML-NTAccountName attribute.

4. The DirXML Driver for Exchange is notified. It creates the mailbox and associates the mailbox with the NT account information stored in eDirectory.

NOTE: The examples used DirXML-NTAccountName as the eDirectory attribute to hold the NT account information, but you can choose any attribute that works for you.

Managing External Recipients

Microsoft Exchange directories let you create special objects called External Recipients. Think of these objects as address book entries that represent recipients in external messaging systems. You can modify the Schema Mapping policy so that you can map a remote object to a User object or any other desired eDirectory object. For example:

```
<class-name>
     <nds-name>User</nds-name>
     <app-name>remote</app-name>
</class-name>
```

If you decide to make this change, you should also add the Internet EMail Address attribute as a required attribute to the Create policy as shown in the following example:

```
<create-rules>
    <create-rule class-name="User">
        <required-attr attr-name="Given Name"/>
    </create-rule>
</create-rules>
```

An Internet EMail Address attribute is required to create an External Recipient object in the Exchange directory. Failure to add the Internet EMail Address attribute results in an error when you try to create an External Recipient.

Synchronizing Proxy-Address and Target-Address Attributes

To synchronize all the e-mail values of the multivalue Proxy-Address and Target-Address attributes, add the <proxyFlg/> tag to the driver parameters.

1 In iManager, click eDirectory Administration > Modify Object.

2 Locate and select the DirXML Driver for Exchange object (for example, EXCHANGE 5_5), then click OK.

3 Locate the Driver Parameters section at the bottom of the Driver Configuration page, then click Edit XML.

4 Click Enable XML Editing so that you can edit the script.
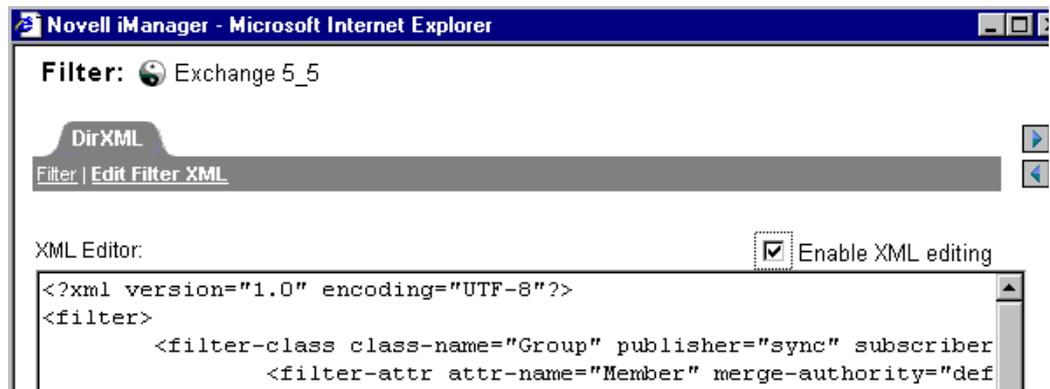
5 Add the <proxyFlg/> tag.

This tag can go anywhere between the <driver-options> tags. The updated parameters could look similar to the following example:

```
<driver-options>
    <x-ldap-server display-name="IP address of Exchange Server(for LDAP
queries):">167.55.135.28</x-ldap-server>
    <x-remote display-name="Remote Exchange Driver?(1=true; 0=false):">0</x-remote>
    <x-server display-name="Exchange Server Name:">DHEAD</x-server>
    <x-site display-name="Exchange Site:">/o=Novell/ou=DOMAINLIMA</x-site>
    <proxyFlg/>
</driver-options>
```

6 Deselect Enable XML Editing, then return to the Driver Parameters section.

7 Click OK.

Using Authoritative Bind

Whenever a query happens with a scope of subordinate or subtree, the driver uses LDAP. In the past, only an anonymous bind was possible. When using an anonymous bind, the driver can't see attributes that are hidden in Exchange.

The new AuthoritativeBind parameter lets you use an authoritative LDAP bind instead of an anonymous LDAP bind. This option is one of the prompts when you import the sample driver configuration.

We recommend that you use authoritative bind only in cases where you need to see hidden attributes, such as when you want to do matching based on a hidden attribute.

Keep in mind that when you use authoritative bind, hidden attributes, such as NT4AccountName, are seen in the trace. After using authoritative bind for a specific purpose such as migrating users, if you no longer need to use authoritative bind, you could change the driver parameters back to using anonymous bind.

5 Troubleshooting the Driver

This section provides information on the following:

Troubleshooting

- Exchange Directory names used in the Placement policy are case-sensitive.

- If Exchange and eDirectory™ are running on the same machine, you must disable the eDirectory LDAP server or change the port assignment from port 389.

- If you encounter syntax errors in XML, use the Web browser required by Nsure™ Identity Manager to verify the syntax.

- The authentication credentials you specify should be for an NT account/domain that has rights to the Exchange Directory.

- CN and Object-Class should not be in the filter.

- If there is an invalid attribute in the filter (for example, one for which Schema Mapping is not defined), the following happens:

  - At each polling loop, the Publisher fails to synchronize the class that contains the invalid attribute, and gives an error indicating an unsupported attribute.

  - The driver is still able to start.

  - The Subscriber channel still functions correctly unless the invalid attribute is referenced. A task that references an invalid attribute gives an error and is not successful.

  The sample driver configuration supports the standard attributes in Exchange, so this issue could occur only for custom attributes you have added in Exchange.

- The DirXML® Driver for Exchange supports the following classes:

  - Distribution List

  - Remote

  - Mailbox

Driver Error Messages

The following is a list of error messages the driver might return:

- `USN Cache Initialized from disk`

  This is an informational message printed at the beginning of the driver initialization indicating that the driver's last state was read from the disk.

- `USN Cache could not be initialized. Most likely reason: Insufficient memory.`

  The previous driver state was not initialized correctly. This means that the registry or the driver configuration file was manipulated by another process. This might happen if you accidentally deleted one of the driver configuration files. This results in a loss of event data.

- `DAPIStart() failed. Please check the Event Log for details. Returned error code =`

  This usually suggests that the Exchange Server is down or could not be reached. The NT Application Event Log should contain a more detailed description of the error.

- `DAPIStart() encountered non fatal error. Please check the Event Log for details. Returned error code =`

  This error message is returned when a warning was returned by Exchange. The returned warning is logged in the NT Application Event Log.

- `Call to Import function failed. Likely cause- bad XML or too little memory.`

- `Subscriber Import attempt failed. Please check the NT Event Log for details. Returned error code =`

  An attempt to write to the Event log did not succeed.

- `Subscriber Import attempt encountered non critical error. Please check the NT Event Log for details. Returned error code =`

- `A bad XML document was sent to the driver. Critical error in the Subscriber XML document.`

- `A bad XML document was sent to the driver. The subscriber could not process the input node.`

- `A bad XML document was sent to the driver. An unsupported operation type was received.`

- `A bad XML document was sent to the driver. The operation node could not be processed.`

- `Bad Subscriber filter or Subscriber filter contains an unsupported attribute. Please check the Subscriber filter.`

  An unsupported attribute was added to the Subscriber filter. Verify the Subscriber filter with the list of supported attributes in the file ATTRIBUTES.TXT (located in the NT\DIRXML\DRIVERS\EXCHANGE\RULES directory).

- `Could not log in to Exchange with the specified credentials. Driver will not start.`

  The authentication credentials supplied were incorrect. The credentials specified should be for an NT account/domain that has rights to the Exchange directory.

- NT Event handles could not be created. The System could be low on memory

- An expected initialization parameter was missing from the parameter list.

  One or more of the initialization parameters was missing. Try restarting. If the problem persists, try retyping the initialization parameters.

- Could not allocate memory.

- Failed to initialize the base of the USN cache. Driver will not start.

A   Documentation Updates

This section contains information about documentation content changes that have been made in this guide.

The information is grouped according to the date the documentation updates were published.

The documentation is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the documentation changes listed in this section.

If you need to know whether a copy of the PDF documentation you are using is the most recent, the PDF document contains the date it was published in the Legal Notices section immediately following the title page.

The documentation was updated on the following dates:

- "March 24, 2004" on page 37
- "April 16, 2004" on page 37

March 24, 2004

- References to DirXML 2.0 have been changed to Identity Manager 2. The engine and drivers are still referred to as the DirXML® engine and DirXML drivers.
- References to Password Synchronization 2.0 have been changed to Nsure™ Identity Manager Password Synchronization. The new Password Synchronization functionality is a feature of Identity Manager. It isn't a separate product.

April 16, 2004

The following updates were made in this section:

Location	Change
"Software Requirements" on page 17	Added a statement that the driver supports the Distribution List, Remote, and Mailbox classes.
Throughout the document	Updated information and added graphics.