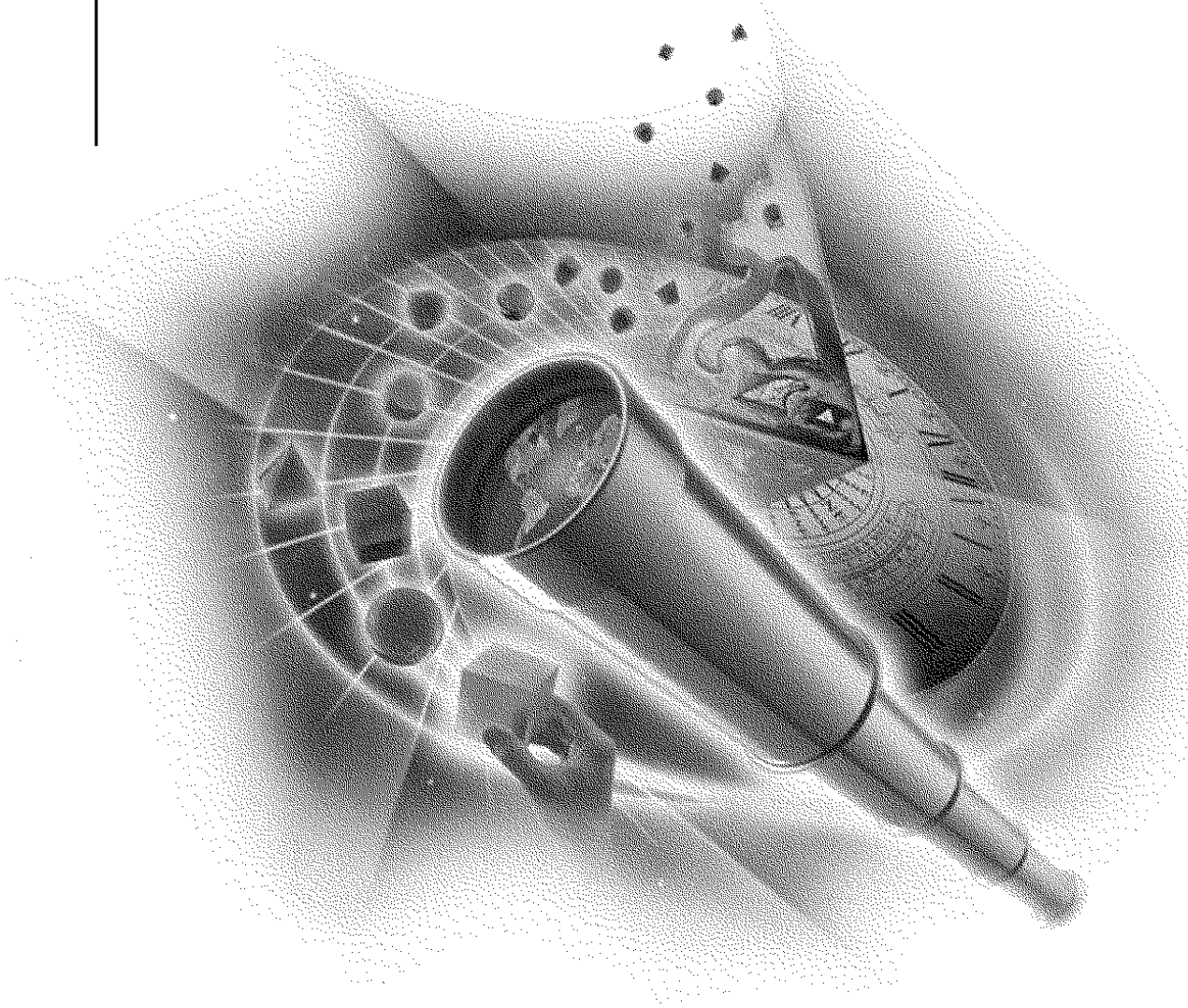


VERSION 2.0

Synchronicity
for Exchange
Administrator Guide



Synchronicity[™]
NETWORK DIRECTORY INTEGRATION SOFTWARE

Novell[®]

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U.S. Patent No. 5,721,825 protects NetVision's Global Event Services.

**Novell, Inc.
122 East 1700 South
Provo, UT 84606
U.S.A.
800-858-4000**

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Overview

This section contains the following information:

- “Product Overview” on page v
- “Product Components” on page v
- “Additional Documentation Resources” on page vii

Product Overview

Synchronicity™ is a solution that automatically synchronizes account and password information for multi-vendor networks. This document provides the necessary information to properly install the various Synchronicity products. The installation process described is the combined installation program capable of installing all of the Synchronicity products at one time.

Before installing any of the Synchronicity products, consult NetVision’s web site to determine if the product versions on the enclosed CD-ROM or floppy disks are still the most recent versions. NetVision’s web site is located at <http://www.netvision.com>. The Product Version Information dialog presented during the installation process clearly indicates the versions of the individual products and components that are part of the installation program being executed.

Product Components

There are four product components.

Component	Description
Global Event Services Broker (NVGES.NLM)	A NetWare® Loadable Module™ (NLM™) for NetWare 4.1 and later that provides event notification as changes are made to NDS™.
Synchronization agent for Exchange	A Microsoft® Exchange™ agent that receives NDS change notifications from the Global Event Services™ NLM and synchronizes those changes with the Exchange Server account database. The synchronization agent requires Microsoft Exchange version 4 or later.
Synchronicity Snapin Modules for 32-bit Netware Administrator for Windows 95/98 and Windows NT and Win32	These NetWare Administrator snapin modules provide capabilities for managing native Exchange accounts from NDS. In addition, these snapins also support management of the Global Event Services NLM. 32-bit Novell® NetWare Administrator for Windows 95/98 and Windows NT® are supported.
Synchronicity Password Utilities for Windows 95/98 and Windows NT	These program files can be executed by users and network administrators to easily change network passwords in a manner which supports synchronization with all products linked with Synchronicity products.

Additional Documentation Resources

For additional information, see the following resources:

To learn more about	See
The installation process that is common to all Synchronicity products	<i>Synchronicity Overview and Installation Guide</i> . This document can be found in electronic form on the CD-ROM or on the NetVision web site, http://www.netvision.com .
The procedures to get started installing the Synchronicity products right away	<i>Quick Starts</i> . This document can be found in electronic form on the product CD-ROM or on the NetVision web site, http://www.netvision.com .
Details about using Synchronicity	Online help. Online help for the Synchronicity product is available within NetWare Administrator. To access Help, select Tools > Synchronicity Product > Help Topics on Synchronicity Product from the NetWare Administrator menu bar. You may also click Help within any dialog for context-sensitive help.
The configuration and operation of the Global Event Services Broker NLM	<i>Global Event Services Administrator Guide</i> . This document can be found in electronic form on the product CD-ROM or on the NetVision web site, http://www.netvision.com .
Vital program information such as changes to the program, files, or documentation	Readme files.

1 **Configuring Synchronicity for Exchange**

Exchange Reference Server

Exchange runs as a set of services on an NT server. The Exchange Organization takes the name of the NT server on which it resides. Since communication to Exchange requires directing requests to an Exchange Organization, a server must be identified. This is the Exchange Reference Server. It tells the Synchronicity for Exchange Synchronization Agent which Exchange Organization to obtain information from. When changes are made to the Exchange Organization object within NDS, the Synchronicity for Exchange NetWare Administrator snapin directs Exchange queries to the specified Exchange Reference Server.

Detailed Requirements for Synchronicity for Exchange

For the Synchronicity for Exchange synchronization agent to be able to perform synchronization with Microsoft Exchange, the following conditions must be met:

- Certain Windows NT system files (MAPI and DAOI) must be present on the computer that is running the synchronization service. These system files are located in the SYSTEM32 subdirectory of the Windows NT installation directory. The simplest way to ensure that these files are present is to install the Exchange Administrator program on the computer, using the Microsoft Exchange Organization installation CD-ROM.
- The synchronization agent must be configured. See “Configuring the Synchronization Service” on page 2.

- For each Microsoft Exchange Organization to be communicated with during the synchronization process, an Exchange Organization object must exist in the NDS tree. The creation of Exchange Organization objects is described in “Configuring Exchange Organization Objects” on page 5.
- For every Exchange Organization object in the NDS tree, each synchronization setting that corresponds to a portion of the NDS tree where synchronization with Exchange is desired must contain a reference to the appropriate Exchange Organization object in the NDS tree. For details, see “Managing Synchronization Settings” on page 7.
- The computer that is running the synchronization agent must have appropriate rights (Permissions Admin) to administer the Exchange Organizations that are part of the configuration information. The best way to verify that the rights are correct is to attempt to run the Exchange Administrator program against each of the Exchange Organizations and attempt to create a new account. If the accounts are created successfully, the rights should be correct.

Configuring the Synchronization Service

For most Exchange service configuration options, click Start > Control Panel > Synchronicity Services and select Synchronicity for Exchange from the Product drop-down list.

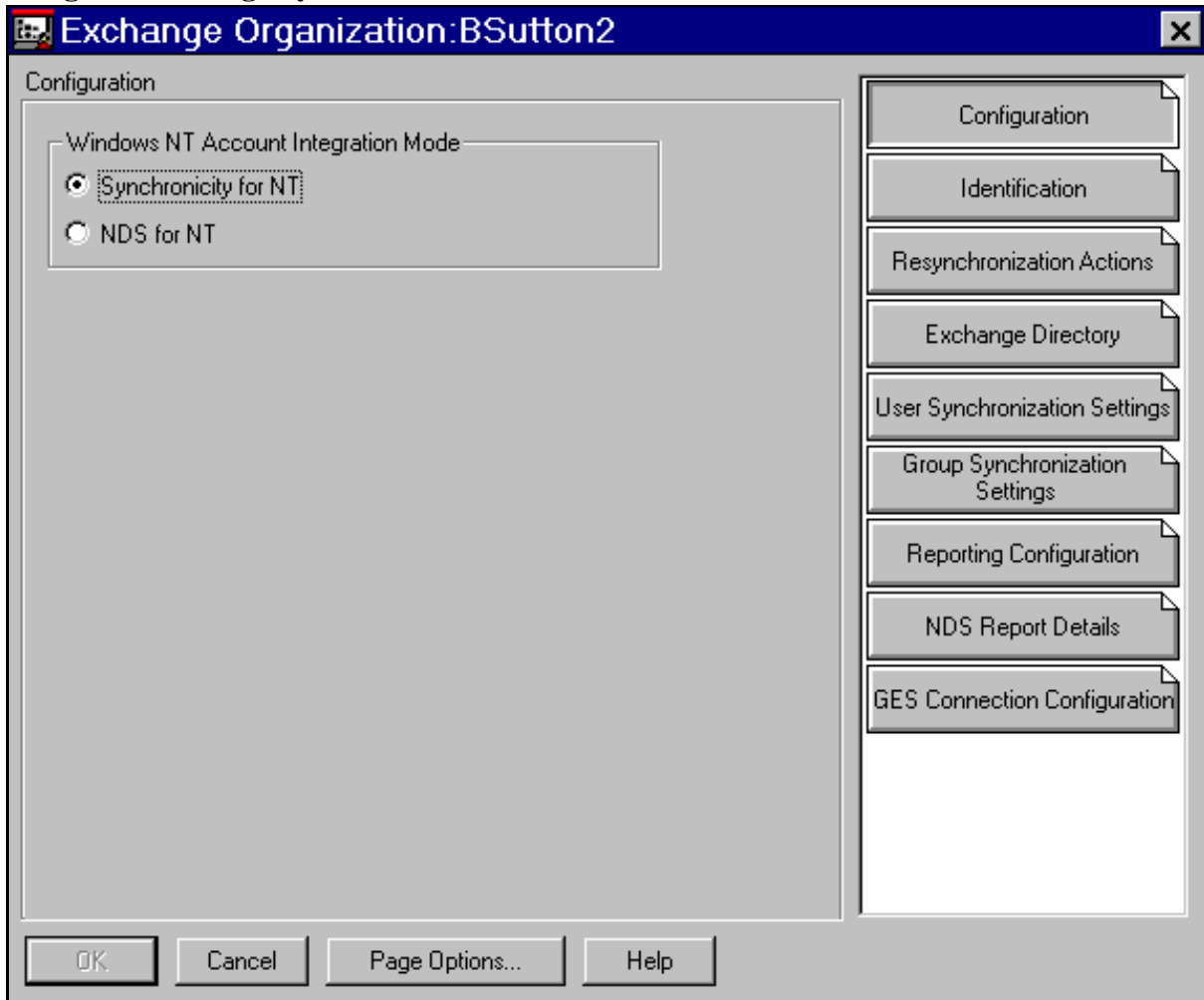
You can run Synchronicity for Exchange with Synchronicity for NT or with NDS for NT. The dialog box shown in Figure 1-1 lets you choose whether Synchronicity for Exchange will key off changes made in Synchronicity for NT or NDS for NT.

If you are running Synchronicity for Exchange in NDS for NT mode, you cannot synchronize or integrate groups to Exchange as Distribution Lists. NDS for NT does not support this feature. You can synchronize and integrate groups if you are running in Synchronicity for NT mode.

To open this dialog box,

- 1. Right-click an Exchange Organization in NetWare Administrator, then click Details.**

Figure 1-1
Activating the Exchange Synchronization



Integration of Existing Objects

Integration of Existing NDS Users and Groups with Exchange

Any existing NDS user and group objects that do not yet have representations in Exchange can be integrated with NetWare Administrator and the supplied snapin modules. The user and group objects must have a valid link to the NT object.

If you are running Synchronicity for Exchange in NDS for NT mode, you cannot synchronize or integrate groups to Exchange as Distribution Lists. NDS for NT does not support this feature. You can synchronize and integrate groups if you are running in Synchronicity for NT mode.

To integrate NDS Users and Groups with Exchange,

1. **In NetWare Administrator, click Tools > Synchronicity for Exchange > Integrate NDS Users and Groups with Exchange.**

If the menu item is not present, the NetWare Administrator snapin modules are not properly installed.

2. **Select the NDS users and groups to be integrated with Exchange.**
3. **Select the Exchange objects with which the NDS objects will be integrated.**
4. **Click Next, then set the name collision and reporting options.**
5. **Click Finish to start the operation.**

Note This process will temporarily disable the synchronization of user and group creations. This is required for the integration to function correctly.

Integration of Existing Exchange Users and Groups with NDS

Any existing Exchange user and group objects that do not yet have representations in NDS can be integrated with NetWare Administrator and the supplied snapin modules. The user and group objects must have a valid link to the NT object.

To integrate existing Exchange Users and Groups with NDS,

1. **In NetWare Administrator, click Tools > Synchronicity for Exchange > Integrate Exchange Users and Groups with NDS.**

If the menu item is not present, the NetWare Administrator snapin modules are not properly installed.

2. **Select the Exchange organization that contains the mailboxes and distribution lists to be integrated with NDS.**
3. **Click Add to select mailboxes and distribution lists for integration.**
4. **Select the NDS container where the corresponding NDS objects will be located.**
5. **Click Next, then set the reporting options.**

6. Click Finish to start the operation.

Note This process will temporarily disable the synchronization of user and group creations. This is required for the integration to function correctly.

Configuring Exchange Organization Objects

Exchange Organization objects can be created anywhere in the NDS tree.

To create a new Exchange Organization object in NetWare Administrator,

- 1. Right-click a container in the NDS tree where user and group objects can be created (usually an Organizational Unit).**
- 2. Click Create, then select Exchange Organization.**

Figure 1-2
Selecting the Exchange Organization Object Class

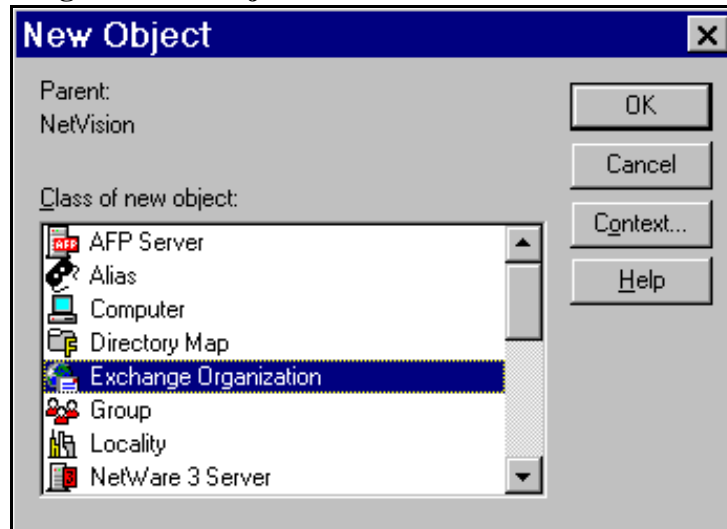
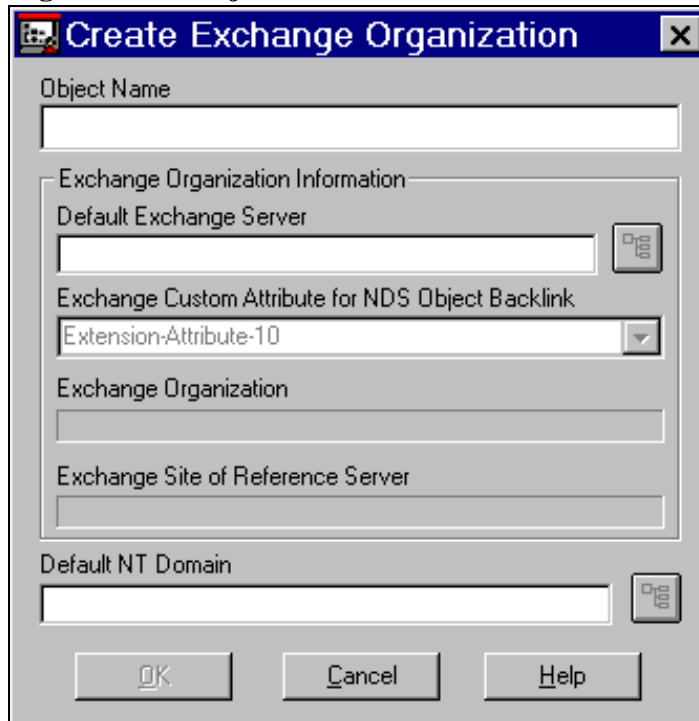


Figure 1-3 shows an example of the information required when the object is created. The name specified in the Object Name field must exactly match the actual Windows NT server name of the Exchange Organization. The field labeled Exchange Site of Reference Server must identify a valid NT server object.

Figure 1-3
Creating an Exchange Organization Object



The value specified for Exchange Custom Attribute for NDS Object Backlink identifies the Exchange custom attribute that will be used to store the name of the NDS object (back link) it is linked to. The value of this field should be determined by your Exchange administrator, who would know if any of the custom attributes are already being used within the organization.

Warning Once the Exchange Custom Attribute for NDS Object Backlink value is specified, it should not be changed, or Synchronicity for Exchange may not correctly identify that an Exchange object is linked to an NDS object.

2 **Managing the Synchronization Process**

Accessing the Details Property Pages

You can control how the synchronization process will function with respect to the selected Exchange Organization by entering data on the Details property pages.

To access the Synchronicity details pages,

1. **Right-click the Exchange Organization object in NetWare Administrator, then click Details.**

Note that Synchronicity has added details pages to the dialog box. If these detail screens do not appear properly or the various objects appear with a question mark graphic (unknown object) instead of the graphics displayed in this chapter, the NetWare Administrator snapin modules supplied with Synchronicity for Exchange may not be properly installed.

Detailed descriptions of each property page can be displayed by clicking the Help button.

Managing Synchronization Settings

Each Exchange Organization object contains a property page named User Synchronization Settings that is used to configure the synchronization process for user mailboxes, as shown Figure 2-1. For each Exchange Organization, multiple synchronization settings can be created, but each must specify a unique portion of the NDS tree. The Exchange synchronization configuration options are not present for an NT Workgroup Server, since only NT Domains can be synchronized with Exchange.

Figure 2-1
Managing User Synchronization Settings

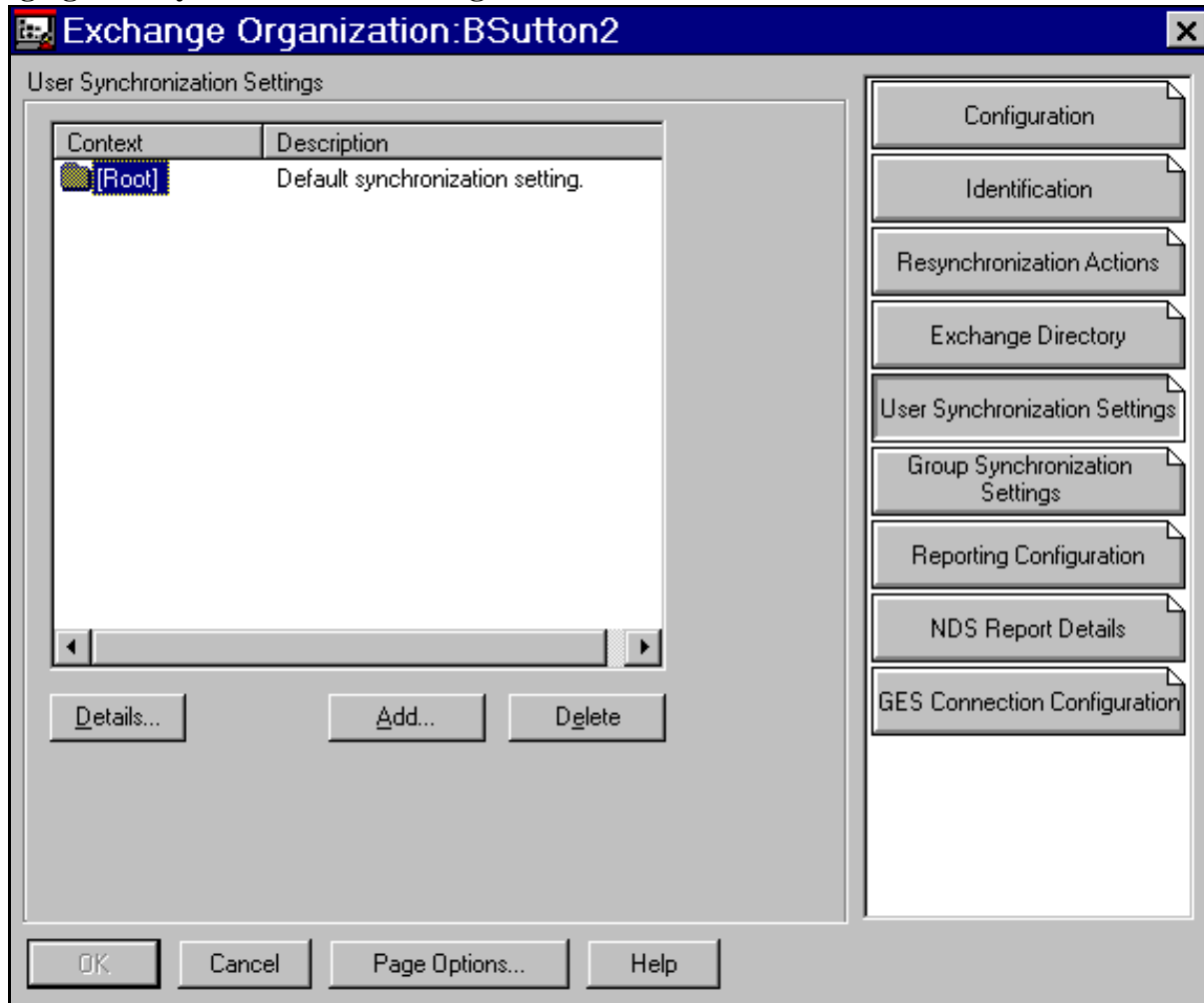
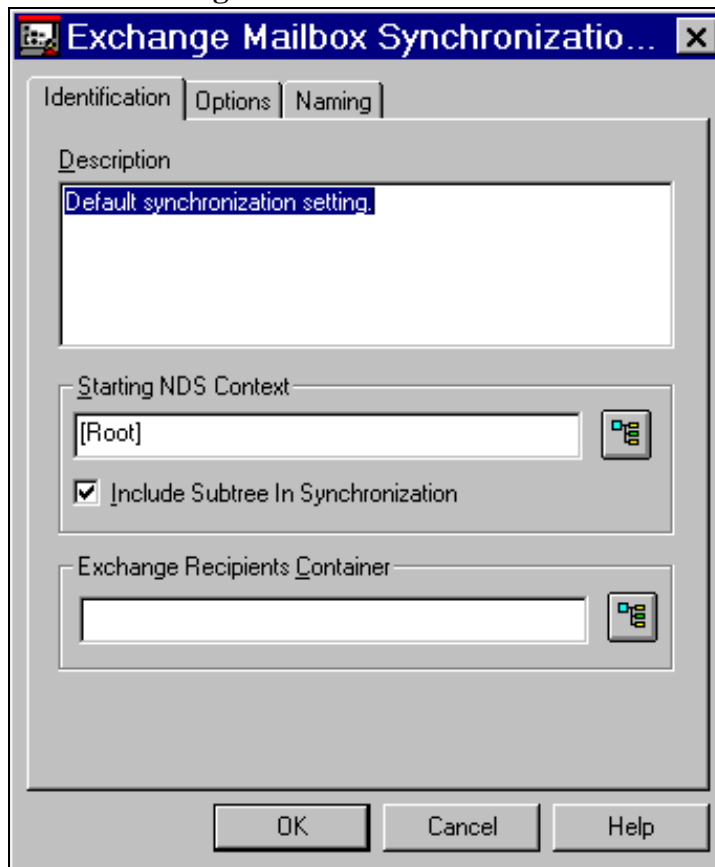


Figure 2-2 shows the dialog box that is displayed when you click either Add or Details on the property page. The fields labeled Starting NDS Context and Include Subtree in Synchronization specify the portion of the NDS tree for which this synchronization setting is active.

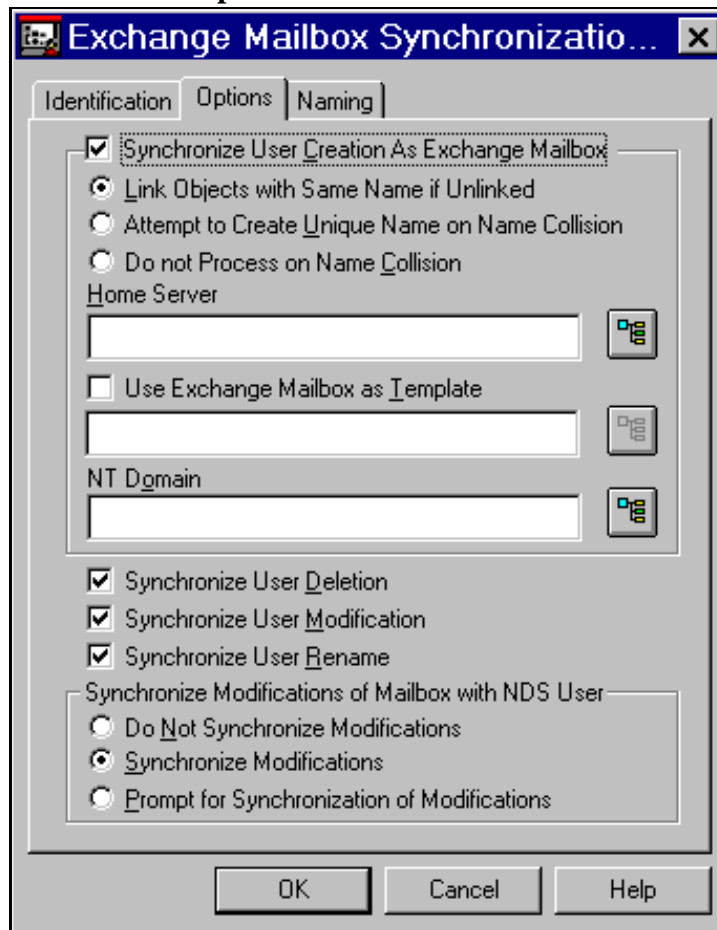
Figure 2-2
Adding a User Synchronization Setting



User Synchronization Options

The property page displayed in Figure 2-3 is used to control the way NDS user accounts are synchronized with the selected Exchange Organization. The radio buttons under Synchronize Modifications of Mailbox with NDS User control how changes made to an Exchange user linked to an NDS user affect the NDS user. The Home Server is the server where the files will actually reside when mailboxes are created. If you have an existing mailbox configured the way you want to configure other mailboxes, check Use Exchange Mailbox as Template and specify the location of that mailbox. Be sure to specify an NT Domain that is linked to the NDS objects you want to synchronize. Only NDS objects linked to the NT Domain you specify here will be synchronized with Exchange.

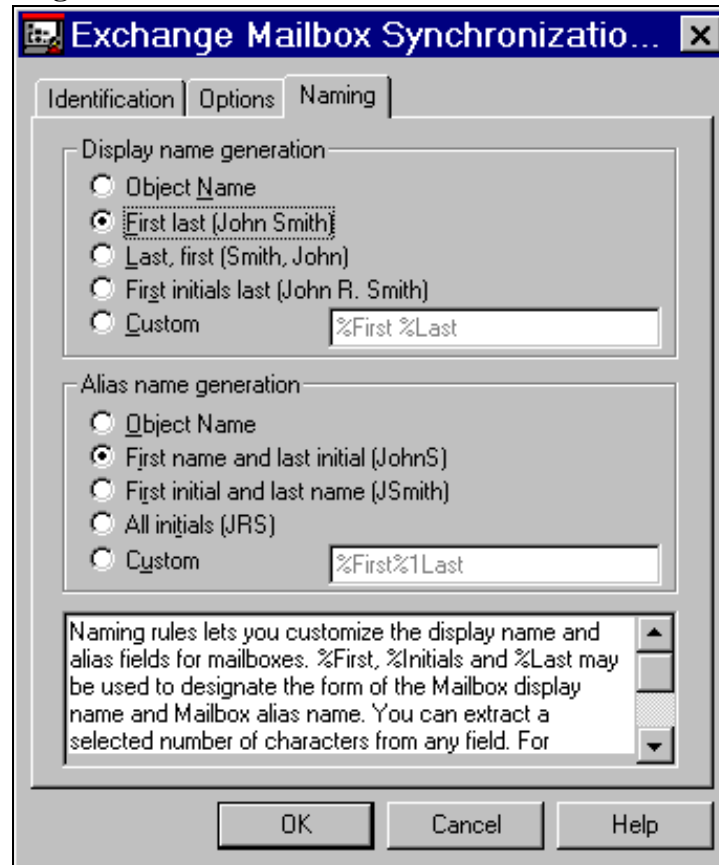
Figure 2-3
Exchange Mailbox Synchronization Options



Naming

Naming rules in Synchronicity for Exchange let you customize the display name and alias fields for mailboxes. %First, %Initials and %Last may be used to designate the form of the Mailbox display name and Mailbox alias name. You can extract a selected number of characters from any field. For example, %1First gives you the first character from the first name field. The display name and alias names will only change when the naming content fields specified have synchronized from the host directory.

Figure 2-4
Naming Rules for Exchange Mailboxes



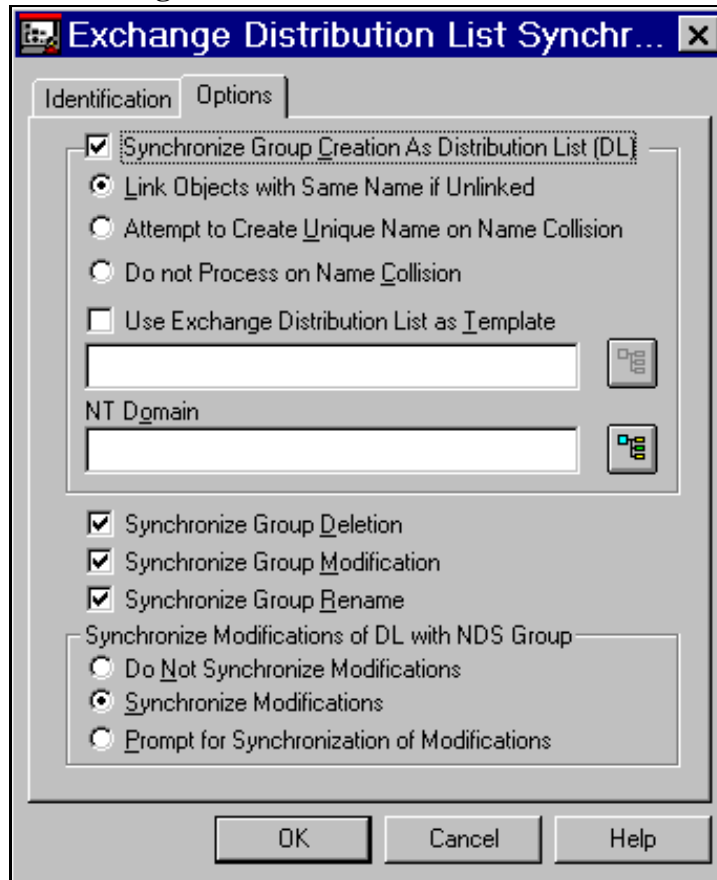
Distribution List Synchronization Settings

The property page displayed in Figure 2-5 is used to control the way NDS group accounts are synchronized with the selected Exchange Organization.

If you are running Synchronicity for Exchange in NDS for NT mode, you cannot synchronize or integrate groups to Exchange as Distribution Lists. NDS for NT does not support this feature. You can synchronize and integrate groups if you are running in Synchronicity for NT mode.

The radio buttons under Synchronize Modifications of DL with NDS Group control how changes made to an Exchange Distribution List that is linked to an NDS group affect the NDS group. If you have an existing distribution list configured the way you want to configure other mailboxes, check Use Exchange Distribution List as Template and specify the location of that distribution list.

Figure 2-5
Exchange Distribution List Settings



Managing Resynchronization Actions

Resynchronization actions allow schedulable actions to be performed to resynchronize NDS and Microsoft Exchange. Resynchronization actions are added, edited, and deleted by selecting the Resynchronization Actions property page in the details for an Exchange Organization object. Resynchronization actions are designed to allow automatic resynchronization in the case of server failures or administrative actions performed using unsupported administration tools, such as Microsoft's User Manager for Domains and Microsoft's Exchange Administrator. The user and group objects to be resynchronized must have a valid link to the NT object.

Adding a Resynchronization Action

The following steps describe the creation of a new resynchronization action:

1. **Right-click the Exchange Organization where the resynchronization action will be executing, then click Details.**
2. **Select the Resynchronization Actions details page for the Exchange Organization.**
3. **Click Add to create a new action.**

The dialog in Figure 2-6 will then be displayed.

4. **Select the appropriate type of action, then click Next to select the detailed options for the resynchronization action type specified.**
5. **Click Next to specify when the resynchronization action is to execute. The default (Once) will be scheduled for immediate execution.**

See the table “Scheduling Options for Resynchronization Actions” on page 15 for explanations of the options.

6. **Click Finish to save the resynchronization action.**

The new action should appear in the list.

Figure 2-6
Adding a Resynchronization Action

Add Resynchronization Action

Description

Resynchronization Action Type

- Resynchronize Exchange Objects to NDS
- Check Object Link Integrity / Repair Bad Links
- Resynchronize NDS Objects to Exchange

Reporting in Synchronicity Server's Log Directory

Report File Name

ExResync.log

< Back Next > Cancel Help

Types of Resynchronization Actions

The following table contains a list of the various types of resynchronization actions that can be scheduled.

Action Type	Description
Exchange to NDS Resynchronization	This type of action will synchronize Exchange user and group accounts with the specified portion of the NDS tree.

Action Type	Description
Link Integrity Check / Repair	This type of action will examine the links between Exchange and NDS accounts. Options are also available to repair any encountered bad links.
NDS to Exchange Resynchronization	This type of action will synchronize users and groups in the specified portion of the NDS tree with the corresponding Microsoft Exchange Organization.

Scheduling Options for Resynchronization Actions

The following table contains a list of the various methods that can be used to schedule a resynchronization action.

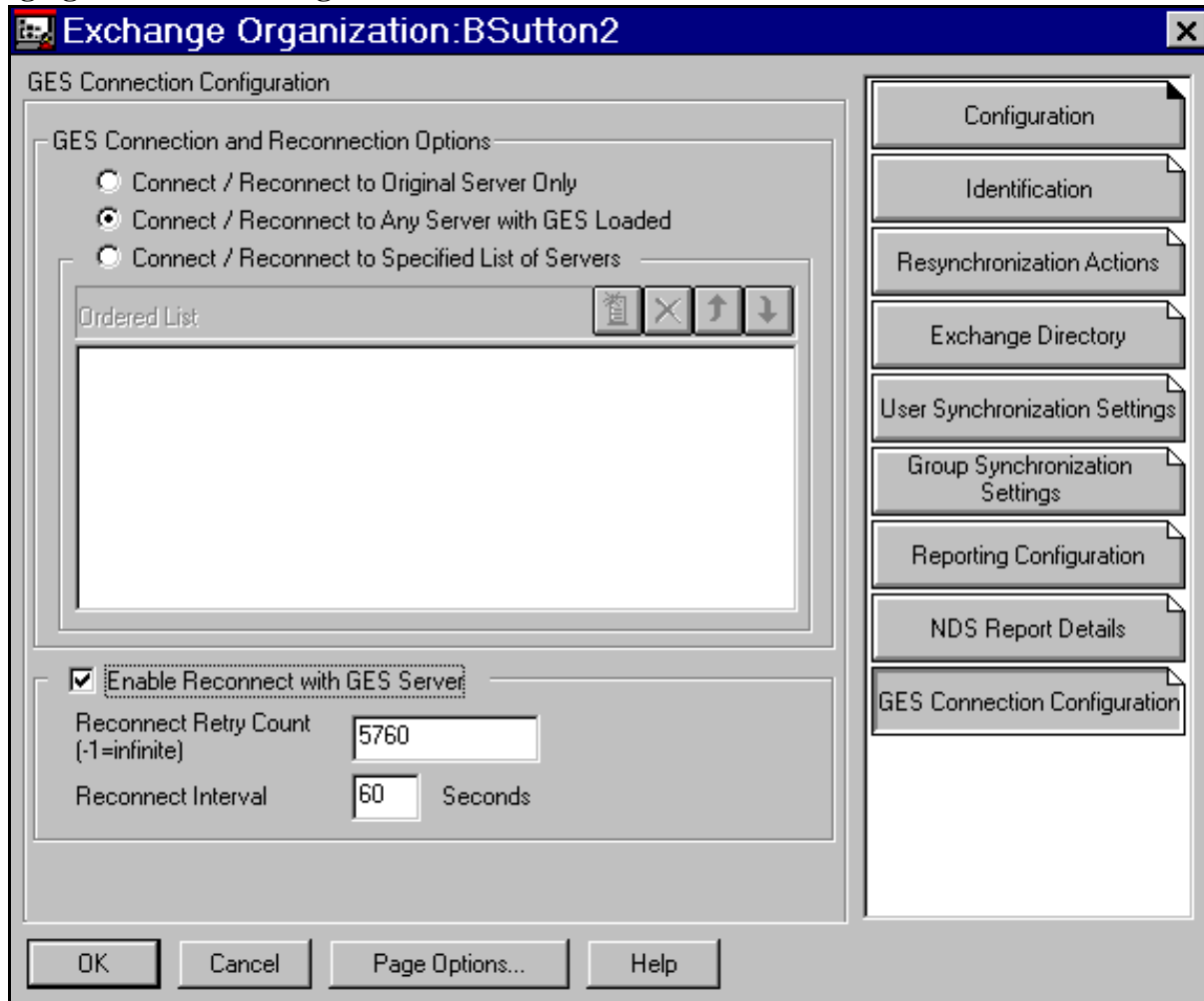
Action Type	When the action will execute
Once (default)	At the specified time on the specified month, day, and year. Once the action has completed, it will be automatically removed from the resynchronization action list.
Hourly	Each hour at the specified number of minutes after the hour.
Daily	Each specified day of the week at the specified hour and minute. Click Which Days to specify which days of the week the action will execute.
Weekly	Each week on the specified day and time.
Monthly	Each month on the specified date and time.
At Service Startup	Each time the NT service agent is started.

Managing Reconnect Settings

A connection between the synchronization service portion of Synchronicity for Exchange and a NetWare 4.1 or later server with the Global Event Services module loaded is required for proper operation of the product. If this

connection is broken for any reason, the product will cease to function until a new connection can be established. The parameters in this dialog control if and how the synchronization service will attempt to reconnect with an appropriate NetWare server that is running Global Event Services. The following figure details the various configuration options that control how the reconnect process works.

Figure 2-7
Managing Reconnect Settings



The following fields, contained in the detail page, describe how the reconnect process will be performed:

- **Connect / Reconnect to Original Server Only.** If a lost connection occurs, the synchronization service will only attempt to establish a connection to the original Global Event Services server. The original Global Event Services server is the NetWare server running the Global

Event Services module that was communicated with when the synchronization service was first loaded this session.

- **Connect / Reconnect to any Server with Global Event Services Loaded.** If a lost connection occurs, the synchronization service will attempt to establish a connection to any NetWare 4 or 5 server to which a current connection exists.
- **Connect / Reconnect to Specified List of Servers.** If a lost connection occurs, the synchronization service will only attempt to establish a connection to the NetWare 4 or 5 servers listed.
- **Ordered List.** The order of the NetWare servers in this list is important, since the reconnect process will attempt to reconnect in the top to bottom order listed.
- **Enable Reconnect with Global Event Services Server.** If this field is checked, the synchronization service will attempt to reconnect to a Global Event Services server if it loses its connection.
- **Reconnect Settings.** The following settings are independent of the method of reconnect being used.
 - **Reconnect Retry Count.** This value contains the maximum number of reconnect attempts that will occur.
 - **Reconnect Interval.** This value contains the time interval, in seconds, between reconnect attempts.

