



*Operating System*

## Directory Service Migration Tool

### **Beta 3 Technical Walkthrough**

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#### **Abstract**

This technical walkthrough describes the steps for migrating from a Novell NetWare Directory Services (NDS) tree to a Microsoft® Active Directory™ directory service domain. This procedure makes use of the Directory Service (DS) Migrate Tool, provided with the Beta 3 release of the Microsoft Windows® 2000 operating system.

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## CONTENTS

INTRODUCTION .....	1
INSTALLING THE DIRECTORY SERVICE MIGRATION TOOL ....	2
THE DIRECTORY MIGRATION PROCESS .....	3
PERFORMING A SAMPLE MIGRATION .....	4
Planning	4
Create a Project	4
Create a New View	4
Modify Your Offline Database	6
Export Your Offline Database into Active Directory	6
Migrate Files	8
Verify the Newly Written Data in Active Directory	8
FOR MORE INFORMATION .....	9
Before You Call for Support	9
Reporting Problems	9

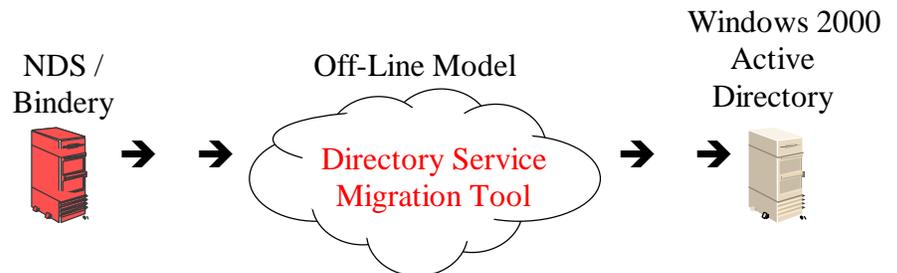


## INTRODUCTION

Many customers with mixed network environments have asked for tools that ease the transition from Novell NetWare to Microsoft® Windows® 2000. In earlier versions of the Microsoft WindowsNT® operating system, this transition was accomplished with utilities such as NetWare Convert (nwconv.exe), which non-destructively migrated bindery based users, groups, files, and file ACLs to a Windows NT Server domain controller.

With the introduction of Windows 2000 and Active Directory, Microsoft has replaced NetWare Convert with a next-generation Directory Service Migration Tool. This new utility non-destructively migrates both NetWare binderies and NetWare Domain Services (NDS) into an offline database, and permits administrators to model the account information before committing it to Active Directory.

Note that this walkthrough assumes that you have already setup an Active Directory environment and have Administrator credentials for both Active Directory and NetWare.



◆ **Features:**

- ◆ Comprehensive Bindery and NDS migration
  - Migrates NetWare Users, Groups, Files, Rights, and container structure.
  - Non-Destructive - Across-the-wire migration (not in-place migration)
- ◆ GUI Modelling Environment
  - Safely modify an Off-line copy of the data to be Migrated (ex: Change passwords or
  - Project Based - Migrate branches or whole departments at your own pace
  - Comprehensive Logging - Permits you to preview warning messages before changes are
- ◆ Ships with and leverages Windows 2000
  - Uses the Microsoft Management Console (MMC)
  - Written with Active Directory ServicesInterface (ADSI)

Figure 1. Migration from NDS to Windows 2000 Active Directory

## INSTALLING THE DIRECTORY SERVICE MIGRATION TOOL

To install the Directory Service Migration Tool, you must be using Windows 2000. To minimize network traffic during migration, you should run the Directory Service Migration Tool directly on a domain controller.

As part of the installation process, your Start menu will be updated and Gateway Services for NetWare (GSNW) will be installed if not already present.

### To install the Directory Service Migration tool

1. From the Control Panel, click **Add/Remove Programs**.
2. Select **Add/Remove Windows Components** and then click the **Components** button.
3. From the wizard, select **Management and Monitoring Tools** and click **Details**.
4. Be sure that the **Directory Service Migration Tool** check box is selected.
5. Click **OK** and **Next** until you return to the Control Panel.

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**Note:** *If Gateway Services for NetWare is not already installed, it will be automatically installed at this time.*

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6. To start the Directory Service Migration Tool, from the **Start** menu, click **Programs**, then **Administrative Tools**, and then click **Directory Service Migration Tool**.

### Alternatively, you can create your own console

1. From the **Start** menu, click **Run**.
2. Type **mmc.exe** in the box, and click **OK**. This starts the Microsoft Management Console (MMC).
3. From the **Console** menu, click **Add/Remove Snap-in**.
4. Click **Add**, click Directory Service Migration Tool, and continue clicking **OK** until you return to the Console root.

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**Note:** *The Directory Service Migration tool has comprehensive online Help, which you can view by selecting Help (Alt -H).*

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## THE DIRECTORY MIGRATION PROCESS

A directory migration has the following basic steps:

- Planning the project.
- Creating a project in the Directory Service Migration Tool, and selecting the NetWare resources to import into your offline project.
- Modeling the project offline (this includes changing user IDs and establishing fresh passwords).
- Exporting the offline model into Active Directory.
- Migrating selected files.
- Confirming the results of the migration.

The next few sections use a sample migration to demonstrate each of these basic steps.

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## PERFORMING A SAMPLE MIGRATION

To walk through a sample migration of users and groups and their structure, follow these steps. This procedure assumes that you have Administrator rights to read in all properties from NDS. Note that Beta 3 includes a sample project, so you do not need to create a new project for this walkthrough.

### Planning

Every migration has unique characteristics, and it is beyond the scope of this walkthrough to list them all.

In short, you should:

- Know what you're migrating from. Document your existing NDS structure, understand how it is administered, who administers it, how it evolved to have the hierarchy it has now, how groups are leveraged, how containment is leveraged, and so forth.
- Know what you're migrating to. Read other walkthroughs pertaining to designing and configuring your Active Directory structure, have Active Directory operational, know the difference between the two environments (for example, are your naming conventions the same between both directories or are there things you need to tweak while in the offline model?), and so forth.
- Don't attempt too much change at any one time. The Directory Service Migration Tool permits you to perform your migration incrementally. You can choose a limited number of objects to migrate at any given time. This permits you to transition at your own pace, and more importantly, transition your users at a pace that they find acceptable.

### Create a Project

As stated previously, Beta 3 includes a sample project. You do not need to create a new project for this walkthrough.

### Create a New View

This step discovers NetWare resources and creates a copy of selected resources in your offline migration database.

#### To create a new view

1. If you have not already done so, start the Directory Service Migration Tool.
2. In the left pane of the console, rightclick **Sample Project**.
3. Point to **New**, and click **View From NetWare**.

This starts a wizard that enables you to select the NetWare resources to discover (see Figures 2 and 3).

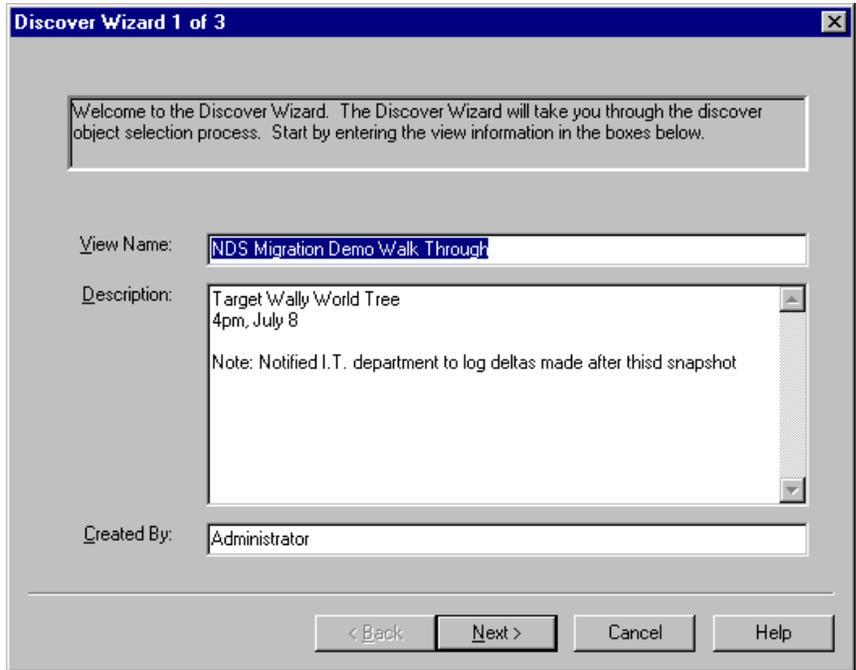


Figure 2. Defining a view name in the Discover Wizard

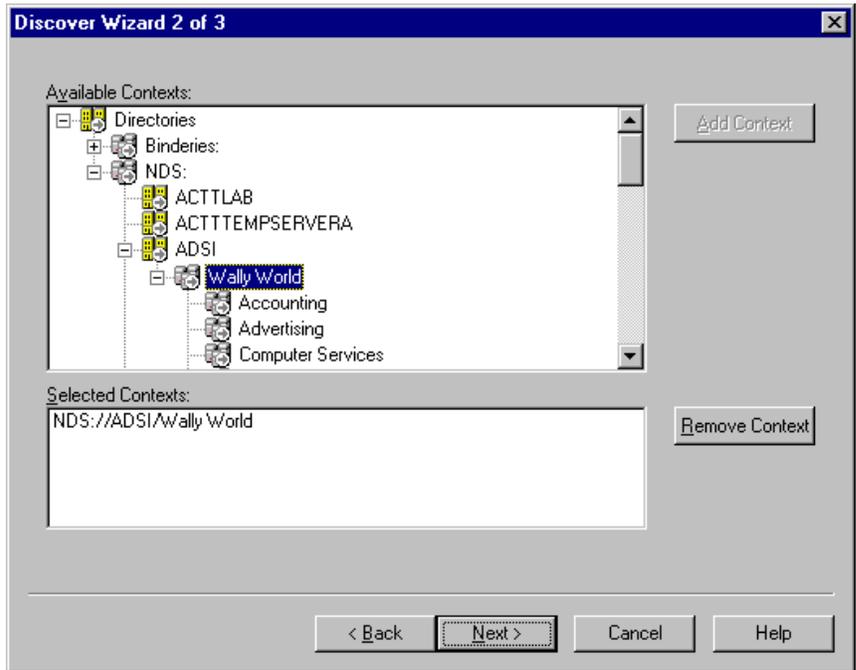


Figure 3. Selecting NetWare resources (Add Context) from the Discover Wizard to populate the offline Directory Service Migration database.

## Modify Your Offline Database

After you have selected resources, such as users, groups, and containers, to store in the offline database, you can rightclick on any object to add, delete, or modify the object properties.

**Note:** *This version of this tool allows you to drag users between containers, and also includes other modeling enhancements. Multiselect drag -and-drop is enabled between containers, between views, and between projects.*

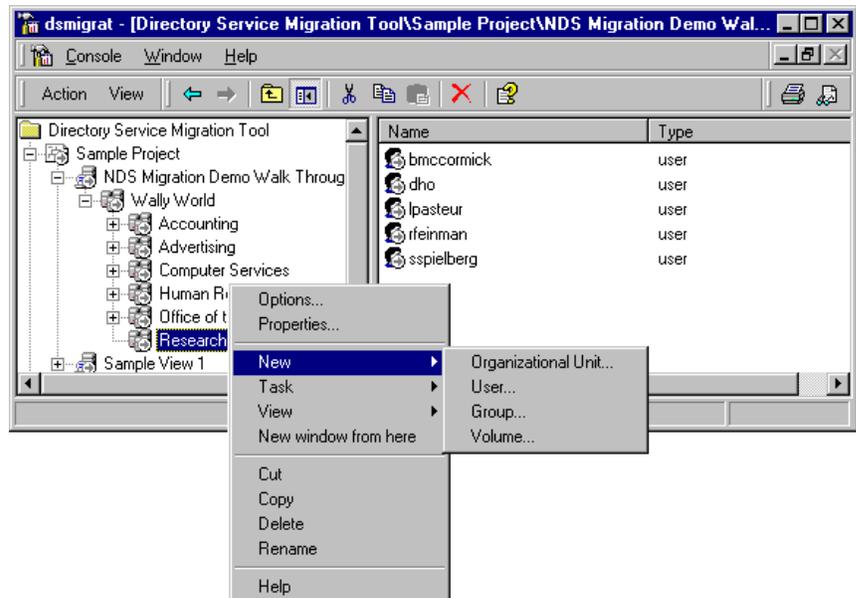


Figure 4. Modeling the offline database.

## Export Your Offline Database into Active Directory

Once you have completed updating your offline database, you are ready to write this data to Active Directory. To do this, you must decide what part of your offline data (which branches) you wish to migrate and what the destination container in Active Directory will be. If you have not already set up a structure in Active Directory, you should do so.

### To set up a structure in Active Directory

1. Open the Directory Management tool.
2. On the **Start** menu, click **Programs**, point to **Administrative Tools**, and click **Directory Management**.
3. Right-click the name of your domain, point to **New**, and click **Organizational**

**Unit.** Then type a name for the new Organizational Unit(OU). (In the screen diagrams in this document, the destination OU is "Sample.")

**Once you have a destination container, export items as follows**

1. Right-click a source in the offline database, click **Task**, and click **Configure Object to NTDS**. This starts the Configure Objects to NTDS wizard.
2. Select your destination container (for example **Sample**) and click **Finish**.

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**Important:** *It is possible that when selecting a NetWare Resource, you focused on an "Organization" rather than an "Organizational Unit." The TYPE of container you have is displayed in the Type column (right panel) when focused on your View. It is important to note that you can only migrate an "Organization" to the Domain Root in Active Directory (an OU cannot contain an O). If this is not what you wish to do, then return to the step above and select a new source in the offline database that has a Type of "Organizational Unit."*

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The wizard will perform a pre-configure verification, and once it is complete, you must click **Continue** to begin writing to Active Directory. Once this step has been completed, these new users can begin logging in with Windows 2000 and Active Directory.

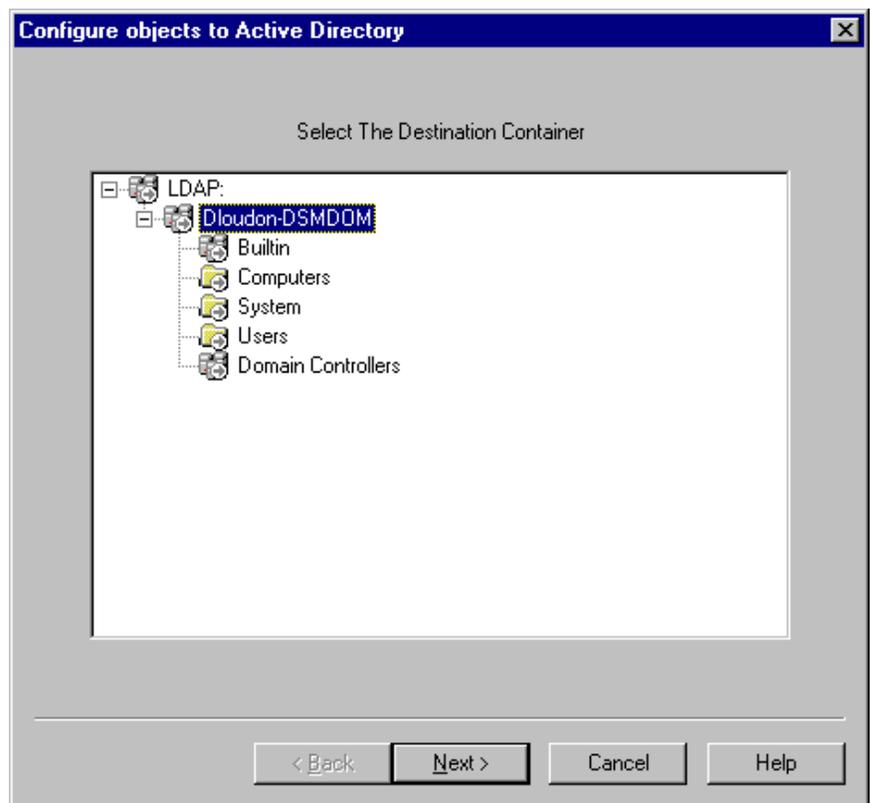


Figure 5. Selecting the destination container from the Configure Objects to NTDS Wizard.

## Migrate Files

If you discover Volume Objects during the discovery phase, you can rightclick their names to start the File Migration wizard. Alternatively, you can start a manual file migration by right-clicking any project, and selecting **File Migrate** from the Task list.

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**Note:** *You do not need to perform this step immediately after migrating users and groups—you can return at any point to migrate files.*

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## Verify the Newly Written Data in Active Directory

After you have exported objects and migrated files, you can begin using the live data as it was written to Active Directory by viewing the destination container with the Directory Service Manager snapin.

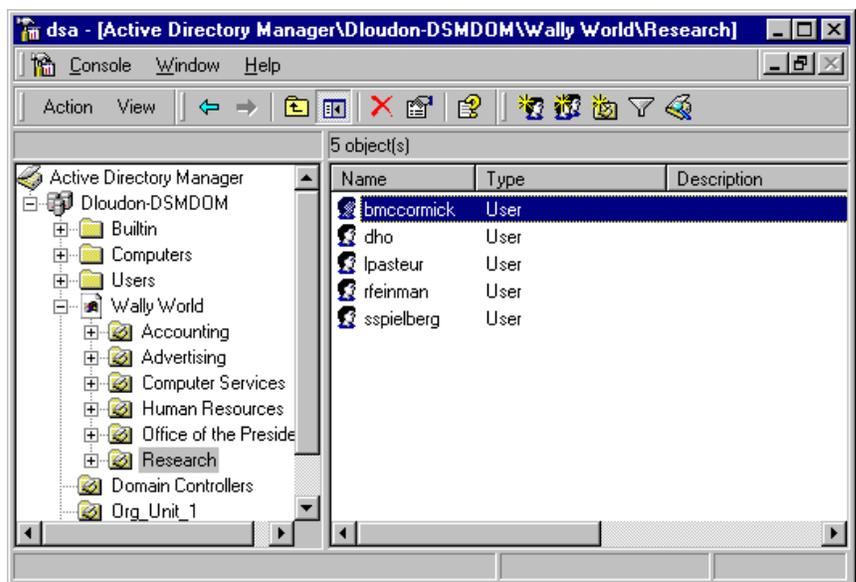


Figure 6. Directory Service Manager showing the migrated containers and users

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## FOR MORE INFORMATION

For the latest information on Microsoft Windows 2000 network operating system, visit our World Wide Web site at <http://www.microsoft.com/windows/server/> and the Windows NT Server Forum on the Microsoft Network (GO WORD: MSNTS).

For the latest information on the Windows2000 Beta 3, visit the World Wide Web site at <http://ntbeta.microsoft.com/>.

### Before You Call for Support

Please keep in mind that Microsoft does not support these walkthroughs. The purpose of the walkthroughs is to facilitate your initial evaluation of the Microsoft Windows 2000 features. For this reason, Microsoft cannot respond to questions you might have regarding specific steps and instructions.

### Reporting Problems

Problems with Microsoft Windows 2000 Beta 3 should be reported via the appropriate bug reporting channel and alias. Please make sure to adequately describe the problem so that the testers and developers can reproduce it and fix it. Refer to the Release Notes included on the Windows 2000 Beta 3 distribution media for some of the known issues.