



Server  
Enterprise

CHAPTER

## Migrating to Windows NT from NetWare

# 18

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## About Chapter 18

**T**his chapter is all about migration. No, we're not talking about flying south for the winter. What we're talking about is converting from Novell NetWare to Microsoft Windows NT, and the process of copying accounts, files, and folders from the NetWare server to the Windows NT Server computer.

Chapter 18 takes you through this migration process from start to finish. It explains how to start the Migration Tool for NetWare; how to select the source NetWare server and destination Windows NT Server computer; and how to configure the way user accounts, group accounts, files, and folders will be migrated. Next, the process of performing one or more trial migrations is outlined. Then the actual migration is performed. Finally, Chapter 18 explains how NetWare client computers must be configured after the migration to enable them to access the Windows NT Server computer.

This chapter is optional if you're preparing for only the Workstation exam, but essential if you're preparing for either the Server or Enterprise exams. This chapter maps to the "Configure Windows NT Server for interoperability with NetWare servers by using various tools . . . including Migration Tool for NetWare" objective for the Server and Enterprise exams.

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## Migrating to Windows NT from NetWare

When an organization decides to replace one or more of its Novell NetWare servers with a Windows NT Server computer, a *migration* to Windows NT from NetWare is performed. The migration process involves copying user and group accounts, files, and folders from the NetWare server(s) to the Windows NT Server computer.

Microsoft supplies an administrative tool with Windows NT Server, called the *Migration Tool for NetWare*, that makes migrating to Windows NT from NetWare possible. The Migration Tool for NetWare can be used to migrate user accounts, group accounts, files, and folders from NetWare 2.x, 3.x, and 4.x servers to a Windows NT Server computer. You can choose to migrate only users, only files, only groups, or any combination of the three.

The migration process involves the following steps:

- Starting the Migration Tool for NetWare
- Selecting the source NetWare server and destination Windows NT Server computer
- Configuring how user and group accounts will be migrated
- Configuring how files and folders will be migrated
- Performing one or more trial migrations to test your configurations
- Performing an actual migration
- Configuring NetWare client computers to access the Windows NT Server computer

Each of these steps is discussed in the sections that follow.

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## Migration Tool for NetWare

You don't have to install the Migration Tool for NetWare — it is automatically installed on a Windows NT Server computer during the installation process.

However, before you can use the Migration Tool for NetWare, several prerequisites must be satisfied:

- NWLink IPX/SPX Compatible Transport must be installed and configured on the Windows NT Server computer.
- Gateway Service for NetWare (GSNW) must be installed and configured on the Windows NT Server computer.
- The user who performs the migration must have Administrator privileges on the Windows NT Server computer, and must also have Supervisor privileges on the NetWare server(s).
- An NTFS partition must be configured on the Windows NT Server computer and must be specified as the destination volume if you want to retain file permissions on migrated files.
- If you are migrating from a NetWare 4.x server, the NetWare server must be configured for bindery emulation.

When planning a migration from NetWare to Windows NT, it's helpful to know exactly what can and can't be migrated. Table 18-1 lists this information.

**TABLE 18-1 WHAT CAN AND CAN'T BE MIGRATED**

<i>WHAT CAN BE MIGRATED</i>	<i>WHAT CAN'T BE MIGRATED</i>
User accounts and their properties	User account passwords
Group accounts and their properties	Print servers, print queues, and their configurations—all printing must be configured manually on the Windows NT Server computer <i>after</i> the migration is complete
Files and their permissions	Workgroup managers and user account managers
Folders (directories) and their permissions	Application-defined bindery objects Login scripts—NetWare login scripts don't run on client computers of Windows NT Server computers

## Using the Migration Tool for NetWare

Using the Migration Tool for NetWare is fairly straightforward. The following section explains how to start and use this tool.

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TO START THE MIGRATION TOOL FOR NETWARE ON A WINDOWS NT SERVER COMPUTER, AND TO SELECT THE SOURCE AND DESTINATION SERVERS, FOLLOW THESE STEPS:

1. Select Start > Programs > Administrative Tools (Common) > Migration Tool for NetWare.
2. The Migration Tool for NetWare dialog box appears with the Select Servers For Migration dialog box on top of it, as shown in Figure 18-1. Notice that you must configure a source and destination server before you can continue.

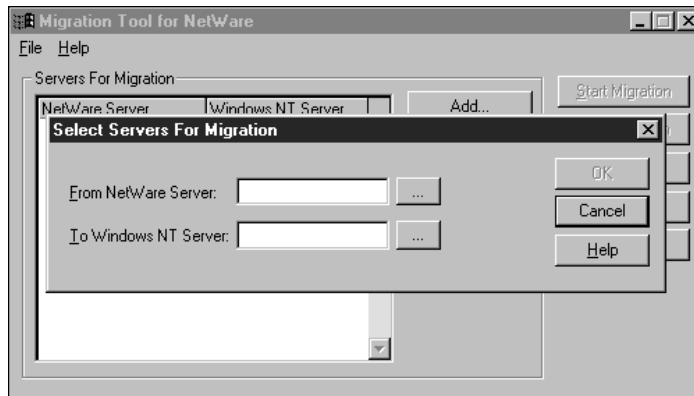


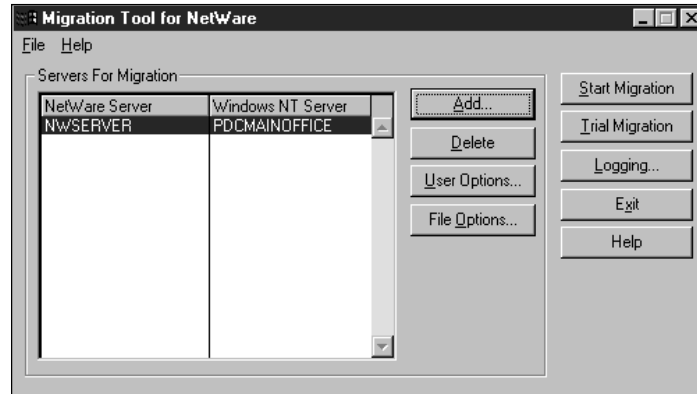
FIGURE 18-1 Starting the Migration Tool for NetWare

Fill in the following text boxes:

- **From NetWare Server** — Type in the name of the NetWare server to be migrated in the From NetWare Server text box, or click the ... command button to browse for the NetWare server to be migrated.
- **To Windows NT Server** — Type in the name of the Windows NT Server computer that will be the destination for the user accounts, group accounts, files, and folders that will be migrated in the To Windows NT Server text box. Or, click the ... command button to browse for the destination Windows NT Server computer.

Click OK.

3. The Migration Tool for NetWare dialog box appears, as shown in Figure 18-2. Note that the NetWare Server and Windows NT Server list boxes display the source and destination servers.



**FIGURE 18-2** Source and destination servers configured for migration

- If you want to add additional source and/or destination servers, click the Add command button.
- If you want to delete a server pair from the Servers For Migration list box, highlight the pair of servers you want to delete and click the Delete command button.
- To configure user and group account migration options, click the User Options command button. (Specific configuration of user options is discussed in the next section.)
- To configure file and folder migration options, click the File Options command button. (Specific configuration of file options is discussed in a later section in this chapter.)

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The next sections discuss the remaining steps in the migration process, including configuring the Migration Tool for NetWare to migrate user and group accounts, configuring the Migration Tool for NetWare to migrate files and file permissions, and performing a trial migration.

### ***Migrating user and group accounts***

An important consideration is determining how duplicate user and group account names will be treated during the migration. If you are migrating more than one

NetWare server, it is likely that users have accounts on more than one NetWare server. This is because each NetWare server maintains its own user account database, much like a stand-alone Windows NT Server computer.

An efficient way to deal with duplicate user and group account names is to create a mapping file. A *mapping file* specifies every source NetWare user and group account name that is being migrated, and specifies a corresponding user or group account name that will be created on the destination Windows NT Server computer during the migration for each specified NetWare user or group. A mapping file can also specify unique passwords for all user accounts being migrated. The following section explains how to configure user and group account migration options.

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TO CONFIGURE USER AND GROUP ACCOUNT OPTIONS IN MIGRATION TOOL FOR NETWARE, FOLLOW THESE STEPS:

1. After starting Migration Tool for NetWare and configuring the source and destination servers, click the User Options command button in the Migration Tool for NetWare dialog box.
2. The User and Group Options dialog box appears, as shown in Figure 18-3. Notice the check boxes next to Transfer Users and Groups and Use Mappings in File.

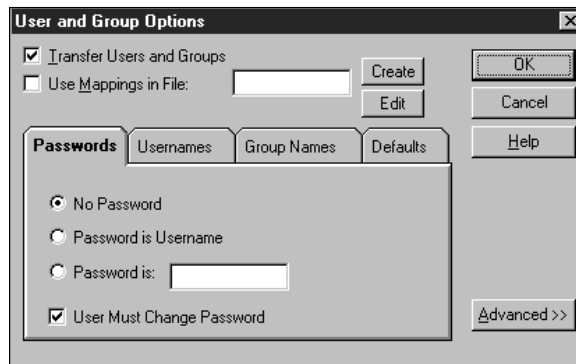


FIGURE 18-3 Configuring options for migrating users and groups

There are several configurable options in this dialog box:

- **Transfer Users and Groups:** Select the check box next to Transfer Users and Groups if you want to migrate user and group accounts from the NetWare server. Clear this check box if you don't want to migrate user and group accounts. This check box is selected by default.

- **Use Mappings in File:** Select the check box next to Use Mappings in File if you want to use a mapping file to migrate user and group accounts. You don't need to select this check box if you are only migrating one NetWare server and you want to retain the same user and group account names on the NT Server computer that were used on the NetWare server. This check box is not selected by default.

For more information on creating a mapping file, click the Help command button in the User and Group Options dialog box.

- **Passwords tab:** Because NetWare user passwords can't be migrated, you can choose from one of three password options to be applied to the migrated user accounts:
  - **No Password:** Select the radio button next to No Password if you want user accounts to be migrated without passwords. This option is selected by default.
  - **Password is Username:** Select the radio button next to Password is Username if you want each migrated user account to have a password consisting of the user account name.
  - **Password is:** Select the radio button next to Password is if you want to specify one password that will be assigned to all user accounts that are migrated. If you select this option, type in the password you want to be assigned.
  - **User Must Change Password:** In addition to choosing from the three radio buttons on the Passwords tab, you can select the check box next to User Must Change Password. When this check box is selected, users whose user accounts are migrated will have to change their password the first time they log on to the Windows NT Server computer. This check box is selected by default.

3. To configure user name options, click the Usernames tab in the User and Group Options dialog box. The Usernames tab appears, as shown in Figure 18-4. There are four radio buttons you can choose from to configure how duplicate user account names will be handled:

- **Log Error:** Selecting this radio button causes an error to be logged to a log file when a duplicate user account is encountered during the migration process. Once a user account is migrated, each additional occurrence of an identical user account name will be logged to a log file but will not be migrated. This radio button is selected by default.
- **Ignore:** Selecting this radio button causes duplicate user account names to be ignored during the migration process. Once a user account is migrated, each additional occurrence of an identical user account name will be ignored.



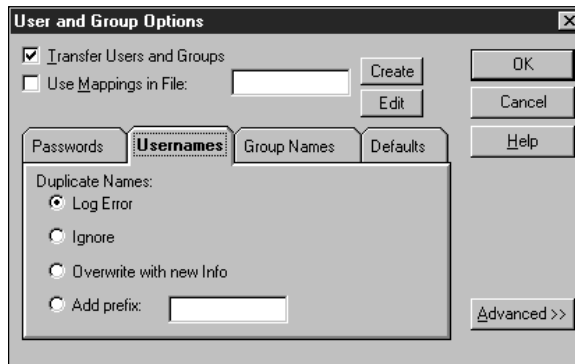


FIGURE 18-4 Configuring options for duplicate user account names

- **Overwrite with new info:** Selecting this radio button causes Windows NT to overwrite existing user account information with the account information from the duplicate user account(s) encountered during migration.
  - **Add prefix:** Selecting this radio button causes a prefix to be added to duplicate user account names encountered during the migration process.
4. To configure group name options, click the Group Names tab in the User and Group Options dialog box. The Group Names tab appears, as shown in Figure 18-5. Notice the options available for handling duplicate group names encountered during the migration process.

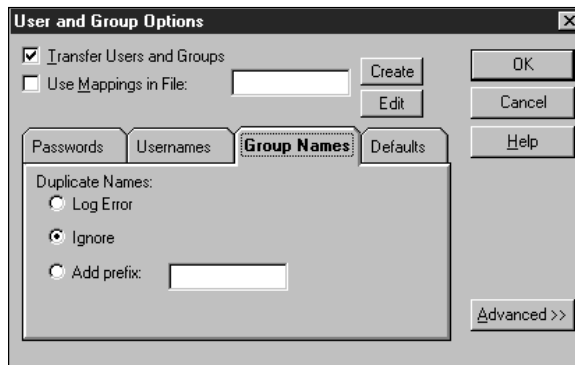
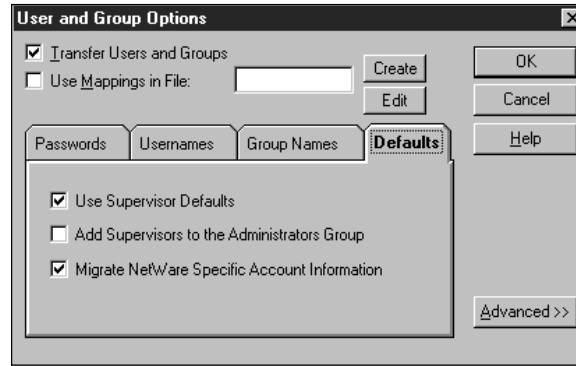


FIGURE 18-5 Configuring options for duplicate group account names

You can choose from three duplicate name options: Log Error, Ignore, and Add prefix. These options have the same effect as the identical options on the Ussenames tab, except that they are applied to group accounts rather than to user accounts.

- To configure defaults, click the Defaults tab. The Defaults tab appears, as shown in Figure 18-6. Notice the three check boxes on the tab. Select or deselect the defaults options check boxes, as appropriate:



**FIGURE 18-6** Configuring default account migration options

- **Use Supervisor Defaults**—To migrate global NetWare account policy settings, such as password length and expiration, to the Windows NT Server account policy, select the check box next to Use Supervisor Defaults. This check box is selected by default.



If you are *not* migrating to a “clean” Windows NT Server computer that was installed expressly for the purpose of migration, use caution here—selecting this check box can cause your existing Windows NT Server account policy to be overwritten.

- **Add Supervisors to the Administrators Group**— Selecting the check box next to Add Supervisors to the Administrators Group causes the NetWare Supervisor user account, and all NetWare user accounts with Supervisor equivalence, to be added to the Administrators group on the Windows NT Server computer. This check box is *not* selected by default.
  - **Migrate NetWare Specific Account Information**— If you select the check box next to Migrate NetWare Specific Account Information, all user account properties, such as group memberships, will be migrated to equivalent properties on the Windows NT Server computer. (Note: Not all NetWare account properties have equivalent properties in Windows NT. Account properties with no equivalents will not be migrated.)
- When you have finished configuring all user and group account options, click OK to return to the Migration Tool for NetWare dialog box.

## Migrating files and folders

When migrating files from a NetWare server to a Windows NT Server computer, the files must be migrated to an NTFS partition on the Windows NT Server computer for the file permissions to be retained.

NetWare file and folder permissions are *not* the same as Windows NT file and folder permissions. During migration, each NetWare file and folder permission is translated into its closest equivalent Windows NT permission. For more information on how NetWare file and folder permissions are applied during the migration process, select the Help menu in the Migration Tool for NetWare dialog box.

By default, certain files and folders on the NetWare server are *not* migrated. Hidden files, system files, and the contents of the `\SYSTEM`, `\MAIL`, `\LOGIN`, and `\ETC` directories are not migrated. You can override these defaults, however, by configuring the file options in the Migration Tool for NetWare. The next section explains how to configure file and folder migration options.



Because potentially large volumes of data are transferred during a migration, you should consider performing the migration during nonbusiness hours, so that network performance is not impaired.

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TO CONFIGURE FILE MIGRATION OPTIONS IN MIGRATION TOOL FOR NETWARE, FOLLOW THESE STEPS:

1. After starting Migration Tool for NetWare, configuring the source and destination servers, and configuring user options (if desired), click the File Options command button in the Migration Tool for NetWare dialog box.
2. The File Options dialog box appears, as shown in Figure 18-7. Note the check box next to Transfer Files.

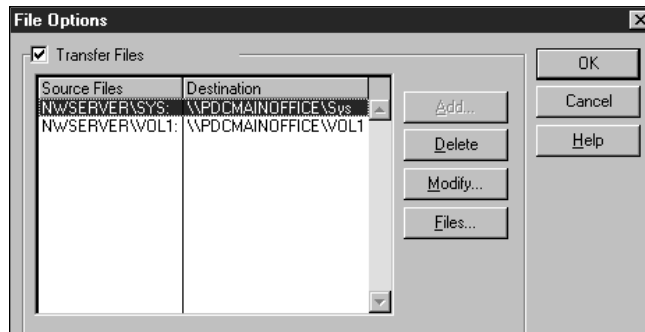
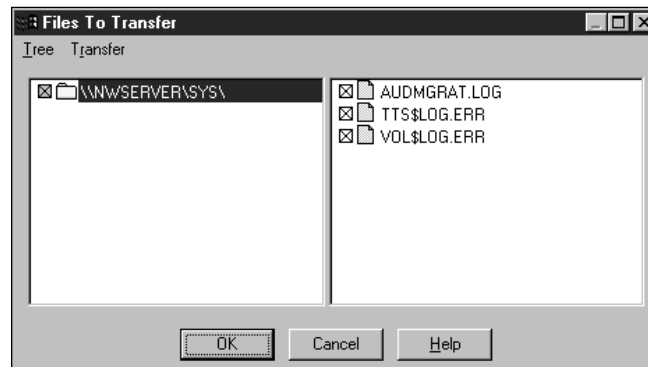


FIGURE 18-7 Configuring file migration options

- If you *don't* want to migrate files, clear the check box next to Transfer Files. This check box is selected by default.
  - To modify, delete, or add NetWare volumes on the source NetWare server to be transferred during the migration, select the Modify, Delete, or Add command buttons, as appropriate.
  - If you want to select or deselect specific files and/or folders for migration, highlight the source NetWare volume in the Source Files list box, and click the Files command button.
  - If you don't want to select or deselect specific files, click OK to return to the Migration Tool for NetWare dialog box. You are finished configuring file migration options.
3. The Files To Transfer dialog box appears, as shown in Figure 18-8. Notice the check boxes next to each file and folder.



**FIGURE 18-8** Selecting individual files and folders for migration

There are two primary configurable options in this dialog box—Tree and Transfer.

- **Tree options:** To expand your view of subdirectories and files on the volume you have selected, select Tree and then choose the appropriate option from the menu that appears. The Tree options are: Expand One Level, Expand Branch, Expand All, and Collapse Branch.

Figure 18-9 shows the Files To Transfer dialog box after the Tree>> Expand All option has been selected. Note that the full tree is expanded and displayed on the left side of the dialog box.

To select or deselect individual files or folders to be migrated, select or deselect the check box next to the file or folder, as appropriate.

- **Transfer options:** To migrate hidden or system files (which are not migrated by default), select Transfer>>Hidden Files or Transfer>>System Files, as appropriate, in the Files To Transfer dialog box.

When you finish configuring the files to transfer, click OK.

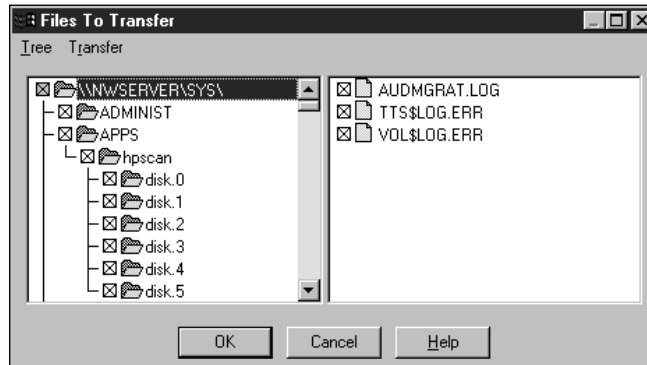


FIGURE 18-9 Expanded tree view

4. The File Options dialog box reappears. Repeat Steps 2 to 3 to configure file options on the remaining volumes as desired. When you finish configuring file options on all volumes selected for migration, click OK to return to the Migration Tool for NetWare dialog box.

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This completes the configuration of file options. You can save your completed migration configurations for use at a later time by selecting File > Save Configuration.

Now you're ready to proceed with a trial migration to test your configurations.

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## Performing Trial Migrations and an Actual Migration

The Migration Tool for NetWare enables you to perform one or more trial migrations that simulate a migration without actually completing the migration process.

The purpose of performing trial migrations is to test your migration configurations and to resolve any errors that occur *before* the actual migration is performed. The Migration Tool for NetWare can be configured so that errors that occur during a trial (or actual) migration are written to a log file and/or displayed on screen. It is recommended that you perform as many trial migrations as neces-

sary until you are satisfied that no critical errors will occur during the actual migration. The next section discusses the steps involved in performing a trial migration.

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TO PERFORM A TRIAL MIGRATION, FOLLOW THESE STEPS:

1. Start the Migration Tool for NetWare. After configuring all user, group, and file migration options, the Migration Tool for NetWare dialog box appears, as shown in Figure 18-10. Notice the Logging, Trial Migration, and Start Migration command buttons.

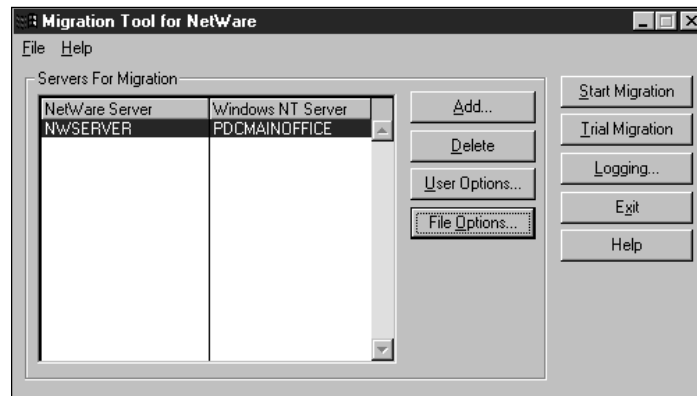


FIGURE 18-10 Preparing for a trial migration

To configure error logging options, click the Logging command button. Figure 18-11 shows the Logging dialog box.

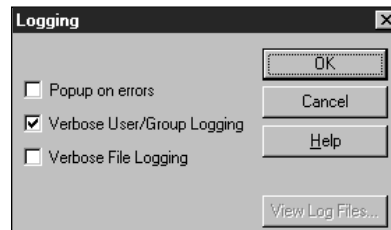


FIGURE 18-11 Configuring logging options

Notice the three logging configuration options available, and select the options you want applied during the trial migration:

- **Popup on errors:** Selecting this check box causes the migration process to pause and to display a message on the screen when an error occurs during the migration process. This check box is not selected by default.

This option can require extensive amounts of user intervention, and can significantly increase the amount of time involved in a trial migration.

- **Verbose User/Group Logging:** Selecting this check box causes all user and group migration errors to be written to the log file, in addition to recording a complete list of users and groups migrated. This check box is selected by default.
- **Verbose File Logging:** Selecting this check box causes all file and folder migration errors to be written to the log file, in addition to recording a complete list of files migrated. This check box is not selected by default.

When you are finished configuring logging options, click OK.

2. In the Migration Tool for NetWare dialog box, click the Trial Migration command button to begin a trial migration.
3. A Verifying Information dialog box appears, as shown in Figure 18-12.

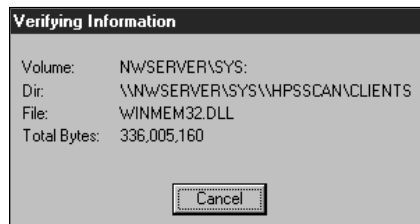


FIGURE 18-12 Trial migration in process—part 1

After some time, the Converting dialog box appears, as shown in Figure 18-13.

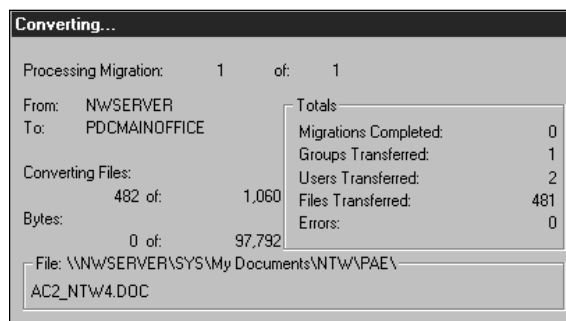
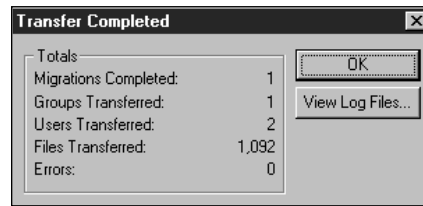


FIGURE 18-13 Trial migration in process—part 2

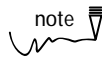
4. At the completion of the trial migration, the Transfer Completed dialog box appears, as shown in Figure 18-14. Notice the summary migration statistics presented.



**FIGURE 18-14** Trial migration completed

If errors are displayed in the Totals section of the Transfer Completed dialog box, you can click the View Log Files command button to view the three logs created during the trial migration: `Error.LOG`, `Summary.LOG`, and `LogFile.LOG`. When you are finished viewing the log files, close the LogView dialog box. Click OK in the Transfer Completed dialog box.

5. The trial migration is complete. Resolve any errors that occurred, such as duplicate user or group account names, or disk space limitations on the destination Windows NT Server computer. Perform additional trial migrations as necessary.



**note** Some migration errors are more serious than others. You might choose to ignore some errors and clean up the Windows NT Server after the migration. Sometimes performing a migration in this way involves less work than eliminating all migration errors.

**Not all errors are detected by a trial migration. Some errors will be detected only when the migration utility performs the actual migration.**

When you are satisfied with the results of a trial migration, you can click the Start Migration command button in the Migration Tool for NetWare dialog box to perform an actual migration. The process of performing an actual migration is the same as performing a trial migration.

If you're not ready to perform an actual migration at this time, select **File > Save Configuration** to save your current settings for later use in an actual migration.



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## Configuring NetWare Client Computers to Access the Windows NT Server Computer After Migration

After the migration is performed, the existing NetWare client computers must be reconfigured to enable them to access the Windows NT Server computer.

If the existing NetWare client computers will no longer access any NetWare servers, their NetWare client software should be removed and a Microsoft redirector (Microsoft client software that enables client computers to access resources on the Windows NT Server computer) should be installed on each of the client computers.

Examples of Microsoft client software include: Network Client v3.0 for MS-DOS and Windows, TCP/IP 32 for Windows for Workgroups 3.11, and LAN Manager v2.2c for OS/2. Microsoft client software is included with Windows for Workgroups, Windows 95, Windows NT Workstation, and Windows NT Server.

If the existing NetWare client computers will continue to access NetWare servers, and will also access the Windows NT Server computer, their NetWare client software should be left intact, and a Microsoft redirector should be installed on each of the client computers.

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## Key Point Summary

This chapter explored migrating from NetWare to Windows NT. The following points illuminate the major issues:

- When an organization decides to replace one or more of its Novell NetWare servers with a Windows NT Server computer, a *migration* to Windows NT from NetWare is performed. The migration process entails copying user accounts, group accounts, files, and folders from the NetWare server(s) to the Windows NT Server computer. Microsoft supplies an administrative tool with NT Server, called the *Migration Tool for NetWare*, that makes migrating to Windows NT from NetWare possible.

- Migration involves several steps:
  - Starting and configuring the Migration Tool for NetWare
  - Selecting the source NetWare server and destination Windows NT Server computer
  - Configuring how user and group accounts will be migrated
  - Configuring how files and folders will be migrated
  - Performing a trial migration to test your configurations
  - Performing an actual migration
  - Configuring NetWare client computers to access the Windows NT Server computer
- Several prerequisites that must be satisfied *before* a migration can successfully be performed:
  - NWLink IPX/SPX Compatible Transport and Gateway Service for NetWare must be installed and configured on the Windows NT Server computer.
  - The user who performs the migration must have Administrator privileges on the Windows NT Server computer, and must also have Supervisor privileges on the NetWare server(s).
  - An NTFS partition must be configured on the Windows NT Server computer and must be specified as the destination volume if you want to retain file permissions on migrated files.
  - If you are migrating from a NetWare 4.x server, the NetWare server must be configured for bindery emulation.
- User and group accounts and their properties, and files and folders and their permissions *can* be migrated. User account passwords; print servers and print queues and their configurations; workgroup managers and user account managers; application-defined bindery objects; and login scripts *cannot* be migrated.
- An important consideration when migrating user and group accounts is determining how duplicate user and group account names will be treated during the migration. An efficient way to handle duplicate user and group account names is to create a mapping file. A *mapping file* specifies every

source NetWare user and group account name that is being migrated, and specifies a corresponding user or group account name that will be created on the destination Windows NT Server computer, during the migration, for each specified NetWare user or group.

- When migrating files from a NetWare server to a Windows NT Server computer, the files must be migrated to an NTFS partition on the Windows NT Server computer for the file permissions to be retained. By default, hidden files, system files, and the contents of the `\SYSTEM`, `\MAIL`, `\LOGIN`, and `\ETC` directories are *not* migrated. You can override these defaults, however, by configuring the file options in the Migration Tool for NetWare.
- The purpose of performing trial migrations is to test migration configurations and to resolve any errors that occur *before* the actual migration is performed. The Migration Tool for NetWare can be configured so that errors that occur during a trial (or actual) migration are written to a log file and/or displayed on screen. Perform as many trial migrations as necessary until you are satisfied that no critical errors will occur during the actual migration. When you are satisfied with the results of a trial migration, the actual migration can be performed. The process of performing an actual migration is identical to performing a trial migration.
- After the migration is performed, the existing NetWare client computers must be reconfigured to enable them to access the Windows NT Server computer. A Microsoft redirector (Microsoft client software) must be installed on each NetWare client computer to enable it to access resources on the Windows NT Server computer.

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## Applying What You've Learned

Now it's time to regroup, review, and apply what you've learned in this chapter. The following Instant Assessment questions bring to mind the key facts and concepts presented in Chapter 18.

## Instant Assessment

1. What are the steps involved in performing a migration from NetWare to Windows NT?
2. Which Windows NT protocol and which Windows NT Server service must be installed and configured on the Windows NT Server before a migration is performed?
3. What privileges must the user who performs the migration have?
4. What type of partition must be configured on the Windows NT Server computer and specified as the destination volume if you want to retain file permissions on migrated files?
5. What items can be migrated?
6. What items cannot be migrated?
7. What type of file can you use to efficiently manage duplicate user and group account names during a migration?
8. What should you always do before you perform an actual migration?
9. Which Windows NT Server tool should you use to accomplish a migration from Novell NetWare to Windows NT?
10. How must you reconfigure existing NetWare client computers *after* a migration is performed to enable them to access resources on the Windows NT Server computer?



concept link

For answers to the Instant Assessment questions see Appendix D.